

AGENDA
REGULAR MEETING OF THE BIRMINGHAM PLANNING BOARD

WEDNESDAY MARCH 23, 2022

151 MARTIN ST., CITY COMMISSION ROOM 205, BIRMINGHAM MI *

*******7:30 pm*******

Michigan and Oakland County are at a substantial rate of COVID-19 community transmission. Per Occupational Safety and Health Administration (OSHA) mask guidance for areas of high or substantial community transmission levels, and to continue to protect essential government operations and functions, the city requires masks in City Hall for all employees, and for board and commission members. Masks are recommended for members of the public who attend city meetings. The city continues to provide KN-95 respirators for all in-person meeting attendees.

- A. Roll Call**
- B. Review and Approval of the Minutes of the Regular Meeting of **March 9, 2022****
- C. Chairpersons' Comments**
- D. Review of the Agenda**
- E. Unfinished Business**
- F. Rezoning Applications**
- G. Community Impact Studies**
 - 1. **294 E. Brown St. – Request for new 4-story mixed-use building**
- H. Special Land Use Permits**
 - 1. **2225 E. 14 Mile – Our Shepherd – SLUP request for parking lot/circulation improvements and minor exterior façade changes.**
- I. Site Plan & Design Reviews**
 - 1. **294 E. Brown St. – Request for new 4-story mixed-use building**
 - 2. **2225 E. 14 Mile – Our Shepherd – Final Site Plan and Design Review request for parking lot/circulation improvements and minor exterior façade changes.**
 - 3. **36877 Woodward – Gasow – Preliminary Site Plan request for a new 2-story building and associated site improvements**
 - 4. **191 N. Chester – OneStream –Design Review request for new dumpster enclosure**
- J. Study Session**
- K. Miscellaneous Business and Communications:**
 - 1. Pre-Application Discussions
 - 2. Communications
 - 3. Administrative Approval Correspondence
 - 4. Draft Agenda – **March 31, 2022**
 - 5. Action List - 2022
 - 6. Other Business
- L. Planning Division Action Items**
 - 1. Staff Report on Previous Requests
 - 2. Additional Items from Tonight's Meeting
- M. Adjournment**

* Please note that board meetings will be conducted in person once again. Members of the public can attend in person at Birmingham City Hall OR may attend virtually at:

Link to Access Virtual Meeting: [**https://zoom.us/j/111656967**](https://zoom.us/j/111656967)

Telephone Meeting Access: 877-853-5247 US Toll-Free

Meeting ID Code: 111656967

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**City Of Birmingham
Regular Meeting Of The Planning Board
Wednesday, March 9, 2022**

City Commission Room
151 Martin Street, Birmingham, Michigan

Minutes of the regular meeting of the City of Birmingham Planning Board held on March 9, 2022.
Chair Scott Clein convened the meeting at 7:30 p.m.

A. Roll Call

Present: Chair Scott Clein; Board Members Stuart Jeffares, Bert Koseck, Daniel Share, Janelle Whipple-Boyce, Bryan Williams; Alternate Board Members Jason Emerine, Nasseem Ramin; Student Representative MacKinzie Clein

Absent: Board Member Robin Boyle; Student Representative Andrew Fuller

Administration:

Nick Dupuis, Planning Director
Leah Blizinski, City Planner
Brooks Cowan, Senior Planner
Laura Eichenhorn, City Transcriptionist

Master Planning Team:

Matt Lambert, DPZ

03-49-22

B. Approval Of The Minutes Of The Regular Planning Board Meeting of February 23, 2022

Mr. Share stated that on page six the "real estate consultant who regularly does business in Birmingham" is Sam Munaco.

Motion by Mr. Williams

Seconded by Ms. Whipple-Boyce to approve the minutes of the Regular Planning Board Meeting of February 23, 2022 as amended.

Motion carried, 7-0.

VOICE VOTE

Yeas: Share, Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein

Nays: None

03-50-22

C. Chair's Comments

Chair Clein welcomed MacKinzie Clein, one of the Board's two new student representatives, and reviewed the meeting's procedures.

D. Review Of The Agenda **03-51-22**

E. Unfinished Business **03-52-22**

None.

F. Rezoning Applications **03-53-22**

None.

G. Community Impact Studies **03-54-22**

None.

H. Special Land Use Permits **03-55-22**

1. 100 Townsend – Townsend Hotel/Rugby Grille – Request for new outdoor dining platform (Postponed from January 26, 2022)

CP Blizinski presented the item.

In reply to Mr. Share, CP Blizinski explained the Fire Marshal shared no concerns with the plans as presented. The Fire Marshal had expressed that he had written his comments to pre-empt potential issues in the future.

PD Dupuis noted that all City Departments review outdoor dining requests every year, and that the City would be entitled to take remedial action if an establishment were to run afoul of its agreement with the City.

John Gardner, architect, and Steven Kalczynski, Managing Director of the Townsend Hotel (the Townsend), were present on behalf of the item.

In reply to Mr. Share, Mr. Kalczynski stated he did not anticipate that the proposed outdoor dining would impede traffic outside the Townsend. He noted that the Townsend had a structure outside during Covid-19 and that no traffic issues arose during that period.

Chair Clein noted that since the outdoor dining would be located within public parking spaces it should not impact the queuing area in front of the Townsend.

Mr. Share said he was concerned that the outdoor dining deck would be off-set relative to the outdoor dining that is adjacent to the building, and that a five foot clear path may not be wide

enough in a case when there is outdoor dining on both sides of the path. He also expressed some concern about the covering being proposed for the deck.

Chair Clein noted that in addition to the five foot clear path, the Townsend would not be occupying two to three feet of a 'furniture zone' which adds to the available width in this case. He said that fact and the fact that the two outdoor dining areas are staggered made him less concerned about feeling infringed upon as a pedestrian passing through the area.

Mr. Gardner confirmed that the deck would be strictly within the width of the two parking spaces.

Mr. Jeffares noted that presently the two parking spaces in question can already be occupied by vehicles, and that the proposed condition would be no different from the present condition in its effect on the clear path.

Ms. Whipple-Boyce offered praise for the proposal.

Mr. Share and Ms. Whipple-Boyce members noted some ongoing concern about approving outdoor dining requests when the Board has not yet completed its recommended outdoor dining ordinance revisions.

Chair Clein reminded the Board that this outdoor dining proposal was submitted within the context of the current ordinance, and that the Board must make its recommendations within the current ordinance until the outdoor dining ordinance revisions are approved and implemented by the Commission.

Messrs. Williams and Koseck affirmed Chair Clein's statement.

Chair Clein also noted that outdoor dining proposals do not represent an approval in perpetuity should issues arise.

Chair Clein informed the applicants that the City was reminded in a letter from the Department of Justice of its obligations to adhere to the Americans with Disabilities Act (ADA). He said that the applicant should speak with the Building Department to ensure that all aspects of the outdoor dining proposal comply with ADA regulations.

Chair Clein expressed concern regarding the use of non-recycled, non-recyclable plastic for outdoor dining furniture within the broader context of climate change. He said he would not hold up the application on that basis but did question why more sustainable materials could not be used for outdoor dining in 2022.

Mr. Gardner stated the literature indicates that the outdoor dining furniture would be fully recyclable.

Motion by Mr. Jeffares

Seconded by Ms. Whipple-Boyce to recommend approval to the City Commission the Special Land Use Permit application for 100 Townsend St. – Rugby Grille – subject to the following conditions:

- 1. The applicant should submit revised plans that clarify the width of the metal awning frame will not be greater than the width of the deck (6'6"); and,**
- 2. The applicant must comply with the requests of all City Departments.**

Mr. Share said he would support this motion but not a motion for approval of the final site plan and design review motion for 100 Townsend. He clarified that he felt the cover for the deck would not be consistent with the adjacent uses of land and would be damaging to the surrounding neighborhood. He said he would vote to approve the SLUP because even with his reservations about the cover the proposal is still an appropriate land use.

Motion carried, 7-0.

ROLL CALL VOTE

Yeas: Share, Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein

Nays: None

03-56-22

I. Site Plan & Design Reviews

- 1. 100 Townsend – Townsend Hotel/Rugby Grille – Request for new outdoor dining platform (Postponed from January 26, 2022)**

Discussion occurred during Item H1.

Motion by Mr. Jeffares

Seconded by Ms. Whipple-Boyce to recommend approval to the City Commission the Special Land Use Permit application for 100 Townsend St. – Rugby Grille – subject to the following conditions:

- 1. The applicant should submit revised plans that clarify the width of the metal awning frame will not be greater than the width of the deck (6'6"); and,**
- 2. The applicant must comply with the requests of all City Departments.**

Motion carried, 6-1.

ROLL CALL VOTE

Yeas: Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein

Nays: Share

- 2. 159 N. Eton – Request for building and site improvements (POSTPONE)**

PD Dupuis stated that a final site plan would not likely be required for this item so no motion was made to postpone.

3. 525 E. Brown – Birmingham Roast – Request for changes to outdoor dining patio (Postponed from September 9, 2021)

PD Dupuis summarized the item.

Jesse Dhillon, Managing Partner of Birmingham Roast, was present on behalf of the item.

Mr. Jeffares said that of all the outdoor dining examples that arose during Covid-19 this was the best. He said he would be pleased if more outdoor dining looked like the proposal in this case. He said the fire suppression requirements should not be an issue, noting that other establishments do the same.

Chair Clein said that while he usually does not like proposals with awnings he likes this one and thinks the overall proposal is appropriate for its location.

Motion by Ms. Whipple-Boyce

Seconded by Mr. Williams to approve the Design Review application for 525 E. Brown – Birmingham Roast – with the following conditions:

- 1. The applicant must either maintain or enter into a new rental agreement with the City for the use of the public property; and,**
- 2. The applicant must comply with the requests of all City Departments.**

Mr. Share said he remained concerned about the type of proposed cover and would be voting no on this motion.

Motion carried, 6-1.

ROLL CALL VOTE

Yeas: Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein

Nays: Share

03-57-22

J. Study Session

PD Dupuis proposed that the Board review Item J2 prior to Item J1.

Motion by Mr. Williams

Seconded by Mr. Share to reverse the order of review for Items J1 and J2.

Motion carried, 7-0.

VOICE VOTE

Yeas: Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein, Share

Nays: None

1. 2040 Master Plan (previously Item J2)

PD Dupuis introduced the item.

Board comment regarding the 'General Direction' section of Mr. Lambert's memorandum were as follows:

- Number five should address the broader thematic goal of uniting the east and west side of the City, with common elements of crossings being a tool for doing so;
- Number 15 should say the Master Plan (the Plan) recommends the City look at each neighborhood to see if the allowable height, bulk, and setbacks should be modified to better reflect the conditions of each neighborhood;
- Number 16 could be more generally about micro-mobility options instead of specifically mentioning golf carts;
- The Plan should recommend the City explore how to make public property available for private use; and,
- While there was some skepticism from one Board member about a 20 m.p.h. speed limit as mentioned in Number 17, both in terms of legality and efficacy, there was a more general consensus that the recommendation should be explored and the discussion could go from there.

Board comment regarding the 'Prioritization' section of Mr. Lambert's memorandum were as follows:

- There was Board consensus that Number seven should more specifically be 'updating the zoning code to foster neighborhood preservation'. It arose often as a core resident concern and should be considered a significant priority;
- The revision of the Multi-Modal Plan, as it relates to Woodward, should be listed as a high priority;
- Implementing unimproved streets recommendations should be moved higher on the list;
- Establishing a Sustainability Board should remain high on the list, as it needs to be done imminently and would not be difficult to achieve;
- Bates Street and moving the Farmer's Market should be considered as part of Number Two;
- A Senior Facility should be included somewhere on the priority list;
- Number Four should be described a bit more in layperson's terms;
- The Plan should make clear why the priorities are important, why ordinance changes should be considered to reflect the priorities, and why time is of the essence; and,
- Worth Park and a parking structure for the Triangle should be added to the priority list.

Board comment regarding the 'Further Direction Needed' section of Mr. Lambert's memorandum were as follows:

- Number three is not particularly important in the context of a Plan that focuses on the neighborhoods;
- Attention should be maintained on creating attainable housing and diversifying housing stock in the Triangle, the Rail, and the 14 Mile-to-Lincoln stretch of Woodward in order to bring in and retain young families;
- The City should work with Birmingham Public Schools to find further use for the facilities for both senior and/or community uses;
- There was consensus that traffic calming and enhancement of the Woodward and Maple intersection should occur; and,

- Number Two merits inclusion in terms of its effects neighborhood cohesion.

Public Comment

Samuel Oh, resident and member of the Corridor Improvement Authority, spoke on behalf of his neighborhood group in the Triangle. He expressed concerns about the speed and density of traffic, about the process of appointments for the Corridor Improvement Authority, and about potentially increasing density in the Triangle. He requested that a park or open space be considered for the Triangle.

Chair Clein clarified that:

- The Plan itself makes recommendations but does not rezone properties; and,
- The recommendations made for the Triangle in the Plan align with the Triangle Plan which was adopted by the City in 2007.

Mr. Oh reiterated his belief that the Plan rezoned properties in the Triangle to a higher density.

David Bloom said the Plan should provide more clarity on how a Master Plan influences zoning, noting that the process may confuse some residents. He advocated for clarity in the Plan as to whether there is insufficient parking in the City, recommended public engagement on the Plan's recommendations, raised concerns about having cafes in the parks, and said there should be clarity regarding whether a mezzanine is considered a 'floor' in describing building heights.

Jack Reinhardt, Managing Partner of the 555 Building, expressed concern about the S. Old Woodward project. He said he had not received notice of discussions of the S. Old Woodward project.

Chair Clein clarified that the present topic before the Board was the Master Plan.

Mr. Williams said Mr. Reinhardt's comments regarding the S. Old Woodward project would be more appropriately directed to the Commission.

Mr. Reinhardt then expressed concern about the loss of parking in the S. Old Woodward area.

2. Outdoor Dining Standards (previously Item J1)

PD Dupuis introduced the item.

Mr. Share recommended in Article 4, Section 4.44(B), "or by the Planning Division at the discretion of the Planning Director" would be changed to "or by the Planning Division at the discretion of the Planning Board", and that "throughout the year with a valid Outdoor Dining License" be removed from Article 4, Section 4.44(B)(5).

Mr. Jeffares and Chair Clein said the 'written permission' referenced in Article 4, Section 4.44(B)(4) should require renewal yearly and should be submitted to the City as part of the Outdoor dining patio renewal process. Chair Clein recommended Staff determine where best to include that as part of the policy.

Mr. Jeffares said dining establishments should be permitted to store their planters against the building during January, February, and March. He noted that the City and establishments without outdoor dining leave their planters out year-round.

Chair Clein stated that the Board is trying to maintain the public space for pedestrians by requiring the removal of planters during January, February, and March. He contended that planters that would normally demarcate outdoor dining would unnecessarily clutter the sidewalk during those months.

Mr. Share concurred with Chair Clein.

Ms. Whipple-Boyce said there were likely some planters that could be allowed to be placed against the building during January, February, and March, and some planters where it would not be appropriate to allow that. She said she was not immediately sure of how to differentiate between the two types.

The Board then addressed the three discussion points posed in the Staff report under Study Session #9.

After discussion, the Board concurred that for Number One establishments should be permitted outdoor dining on both a sidewalk and a deck if requested as long as the clear path meets the five foot minimum and the deck does not encroach past the curb.

PD Dupuis noted that the majority of outdoor dining is regulated by SLUPs, meaning the City can make modifications if necessary.

For Number Two, there were a range of opinions about what sort of coverings should be permitted for outdoor dining adjacent to a building and for outdoor dining on a deck.

Mr. Koseck proposed that awnings or umbrellas be allowed along the buildings, and that only umbrellas be allowed on the decks. He noted that it would make the pedestrian clear path feel less closed in, and would also keep the streetscape view more open.

Messrs. Share and Williams and Chair Clein agreed with Mr. Koseck.

Mr. Jeffares and Ms. Whipple-Boyce spoke in favor of awnings being allowed in both conditions. Ms. Whipple-Boyce noted prior Departmental comments had raised the issue of umbrellas potentially being moved and encroaching into the road or pedestrian clear path.

Mr. Jeffares agreed that umbrellas' ability to be moved was possibly a drawback, and noted that awnings more effectively protect against inclement weather.

For Number Three, there was Board consensus that there would be no appropriate way to limit the number of decks per block.

Chair Clein said he would sooner discuss limiting the number of dining establishments in an area than he would limiting the number of outdoor dining decks permitted per block, though he clarified he was not particularly interested in doing either.

Mr. Williams agreed it would be better to limit the number of dining establishments in an area than it would be to limit the number of outdoor dining decks permitted per block.

Ms. Whipple-Boyce asked if using recycled materials for outdoor dining furniture could be discussed as part of the topic.

Chair Clein said he wanted to avoid delaying this topic so that restaurateurs know what to expect for outdoor dining, but said he would be open to discussing appropriate outdoor dining furniture materials as a future, separate topic.

Motion by Mr. Williams

Seconded by Mr. Share to set a public hearing on April 13, 2022 to amend Article 4, Section 4.44 Outdoor Dining Standards, Article 3, Section 3.04 – Specific Standards (Downtown Overlay District), Article 3, Section 3.16 – Specific Standards (Via Activation Overlay District), and Article 9, Section 9.02 – Definitions.

Motion carried, 7-0.

VOICE VOTE

Yeas: Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein, Share

Nays: None

Public Comment

Richard Astrein, owner of Astrein's Jeweler, member of the Advisory Parking Committee, and member of the Birmingham Shopping District Board, expressed a concern that too many outdoor dining decks could negatively impact other retailers.

03-58-22

K. Miscellaneous Business and Communications

Motion by Mr. Share

Seconded by Mr. Williams to have whatever needs to be amended be amended so that on March 31, 2022 the special meeting will include consideration of the application for 220 Merrill Street for outdoor dining.

Mr. Williams noted that this item would be reviewed in addition to 770 S. Adams on the same date.

Motion carried, 7-0.

VOICE VOTE

Yeas: Jeffares, Williams, Whipple-Boyce, Koseck, Ramin, Clein, Share

Nays: None

1. Pre-Application Discussions
i. 100 N. Old Woodward

PD Dupuis summarized the item and asked the Board to refer the item to the Historic District Commission (HDC).

The Board referred the item to the HDC.

2. Communications
3. Administrative Approval Correspondence
4. Draft Agenda
5. Other Business
i. Action List – 2022

03-59-22

L. Planning Division Action Items
a. Staff Report on Previous Requests
b. Additional Items from tonight's meeting

03-60-22

M. Adjournment

No further business being evident, the Chair adjourned the meeting at 10:08 p.m.



Nick Dupuis
Planning Director



Laura Eichenhorn
City Transcriptionist



MEMORANDUM

Planning Division

DATE: February 23, 2022

TO: Planning Board Members

FROM: Nicholas Dupuis, Planning Director

SUBJECT: 294 E. Brown – Community Impact Study & Preliminary Site Plan Review (Updates in Blue)

Introduction

The applicant has submitted an application for Community Impact Study and Preliminary Site Plan Review for a new 4-story mixed-use building in Downtown Birmingham. The site currently contains a 2-story building, off street parking facility, and minor landscaping. The applicant is proposing to completely redevelop the site with below-grade parking, retail and office on the 1st and 2nd floors, and 38 residential units on floors 3 and 4. The project is also proposed to contain a courtyard/passage that runs east/west that connects to the future RH development site, as well as the Connecting Via that runs from Brown to Daines. At this time, the applicant generally meets all of the bulk, area, and setback requirements of the Zoning Ordinance, as well as parking, use and other ordinance requirements applicable to the site.

On February 23rd, 2022, the Planning Board reviewed the Community Impact Study (CIS) and discussed a number of issues more closely such as the use of the proposed retail spaces, trash, the Environmental Site Assessment, and deliveries. Ultimately, the Planning Board moved to postpone consideration of the CIS so that they may receive updated transportation studies and comments from the City's transportation consultants.

Community Impact Statement

Article 7, Section 7.27 (E) states that a community impact study (CIS) shall be required for a new structure and/or building of 20,000 square feet of gross floor area or greater, to be prepared by the petitioner, for review by the Planning Board at the Preliminary Site Plan Review. As the proposed building is proposed at 101,875 sq. ft., a CIS has been submitted. The Zoning Ordinance recognizes that buildings of a certain size may affect community services, the environment, and neighboring properties. The CIS acts as a foundation for discussion between the Planning Board and the applicant, beyond the normal scope of information addressed in the preliminary site plan review application. The Planning Board "accepts" the CIS prior to taking action on a Preliminary Site Plan.

1.0 Planning & Zoning Issues

- 1.1 **Use:** The proposed use as a mixed-use building with 1st floor retail along Brown, 1st floor office along Daines, 2nd floor office, and 38 residential units on the 3rd and 4th floors.
- 1.2 **Downtown Birmingham 2016 Plan:** Article 3, Section 3.01 of the Zoning Ordinance states that the purpose of the Downtown Birmingham Overlay District is to:
1. Encourage and direct development within the boundaries of the Downtown Birmingham Overlay District and implement the Downtown Birmingham 2016 Plan;
 2. Encourage a form of development that will achieve the physical qualities necessary to maintain and enhance the economic vitality of Downtown Birmingham and to maintain the desired character of the City of Birmingham as stated in the Downtown Birmingham 2016 Plan;
 3. Encourage the renovation of buildings; ensure that new buildings are compatible with their context and the desired character of the city; ensure that all uses relate to the pedestrian; and, ensure that retail be safeguarded along specific street frontages; and
 4. Ensure that new buildings are compatible with and enhance the historic districts which reflect the city's cultural, social, economic, political, and architectural heritage.

In general, the proposed development conforms to the Downtown Birmingham 2016 Plan ("2016 Plan") through several means. In reference to the above ordinance language, the development is within the boundaries of the Downtown Birmingham Overlay District, maintains a physical quality that fits the description provided in the 2016 Plan, relates to the pedestrian, and does not damage any historic districts or buildings. It is worth discussing in further detail a certain aspect of the above, which is the desired character of the area as stated in the 2016 Plan.

At present, the block from Brown to Daines and Old Woodward to Purdy contains 1-3 story commercial buildings and a considerable amount of surface parking facilities. The area (as exemplified by the zoning, D3) was recommended to serve as the beginning of the stepdown in terms of height/bulk from the more intense B4 zoning district on the north side of Brown. Recently, the new RH development site was rezoned to D4, but was required to maintain the 4-story maximum height as required in the D3 zone. The proposed building is 4 stories, meeting the requirements of the D3 zone and the intent of the 2016 Plan. In addition, the Old Woodward and Brown frontages of the block is within the retail frontage boundary, which requires retail within the first 20 ft. of building frontage. The proposed development is providing 6,826 sq. ft. of retail along Brown, which should enhance the activity along Brown and provide a consistent character that is seen in the adjacent area.

Furthermore, the subject site is included within a key anchor area between the Central Business District and the South Woodward commercial area. Within this anchor area, the 2016 Plan suggests the following mix of retail, restaurant and service anchors: hardware and home improvement, restaurants (with and without alcohol), and home furnishings. The current mix of uses in the anchor area include the Daxton Hotel, Madame Restaurant, Adachi Bistro, Max Broock realtors, offices, and the future RH furniture gallery and restaurant. It is apparent that the proposed development will complement the RH gallery in many respects based on the site connection, but it is unclear what type of retail may end up in the retail spaces along Brown.

Finally, the subject site is located in an area that is described as Redevelopment Site II: Brown at Woodward. It appears as though this redevelopment site is focused more on the S. Old Woodward frontage and creating a consistent retail frontage to provide more continuity between districts and a draw for the South Woodward commercial area. Thus, there are no issues present in relation to the Redevelopment Site II.

1.3 Land Development Issues

The applicant has submitted a Phase 1 Environmental Site Assessment (ESA) dated September 14, 2021, which was prepared by PM Environmental. As indicated in the report, the purpose of the 2021 ESA was to update a previous ESA that was performed in December 2020. The 2020 ESA included 300-394 S. Old Woodward, which is the RH site. In the 2020 ESA, most of the Recognized Environmental Conditions (REC's) observed by the consultant were located on 300-394 S. Old Woodward. However, a review of historical uses at 294 E. Brown did indicate that the building was occupied by a fur retail with potential repair or cleaning operations performed on site. The consultants note that these services may have been performed during a period that preceded major environmental regulations and current waste management and disposal procedures. In the conclusion of the 2020 ESA, it is noted that a Phase II ESA was in process to further investigate the REC's on site.

The applicant has also submitted a Baseline Environmental Assessment (BEA) for the property, which detail 12 borings total across the two sites, 2 borings were performed on 294 E. Brown. The soil and groundwater samples were submitted to Merit Laboratories, Inc. in East Lansing, Michigan for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or polynuclear aromatic hydrocarbons (PNAs), PCBs, and Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), or some combination thereof. The 2 borings performed at 294 E. Brown did not yield any of the above.

In summary, the Phase 1 ESA update concluded that the assessments described above did not reveal any evidence of REC's on the subject site.

An additional land development issue considered in the CIS provided was a soils investigation dated November 21, 2021, which was prepared by McDowell & Associates. The consultants performed 4 borings at various locations on the property. The results of the borings yielded fill soils consisting of topsoil and sand or firm to stiff clay for 3-5 ft. followed by native soils consisting of firm to extremely stiff silty or silty sandy clay. The consultants noted groundwater in 3 of four borings, but it was indicated that short-term groundwater observations may not be a reliable indication of the depth of the water table. The consultants also provided a foundation recommendation that suggests that the structure could be supported by conventional to deeper than normal spread or strip footings. All exterior footings should be constructed at, or below, a minimum frost penetration depth of three feet six inches below finished grade. All interior and exterior load-bearing footings should extend through non-engineered fill soils, soils containing significant amounts of organic substances, or excessively weak soils. All strip footings should be continuously reinforced in order to minimize any noticeable effects of differential settlement.

Finally, the applicant has indicated that although there are no steep slopes to deal with on the site, care will be taken to mitigate and sediment laden soils from leaving the site, and that best management techniques for soil erosion will be employed throughout the duration of the project. The applicant projects the volume of excavated soils to be around 15,000 cubic yards, and has provided a haul route heading east on Brown towards Woodward. However, **the applicant has not indicated the means by which they will mitigate noise, dust and debris impacts during demolition and construction.**

The applicant has stated that there will be pedestrian and traffic control which will be clearly marked and identified with either jersey barriers, fencing, signage, street and sidewalk closures clearly identified, etc. Signage at the gates clearly noting areas as "do not enter", etc. Miscellaneous noise nuisances that may occur are demo of the existing structures, starting of large equipment, safety back-up alarms, and heavy machinery. Dust mitigation and track out clean-up will be accomplished with water spray guns and sweepers.

1.4 **Utilities, Noise & Air Issues**

The Civil Engineering drawings provided indicate that the proposed development will be connecting to existing sanitary sewer and water service lines that exist in both the Brown and Daines right-of-way. The applicant has indicated that it is unlikely that any utility easements will be required due to the location of existing utilities.

A Noise Impact Assessment dated September 22, 2021 was prepared by Kolano and Saha Engineers, Inc. (K & S) for the proposed development, which concludes that the proposed development can be designed to meet the City of Birmingham ordinance noise limits. K & S identified 4 potential sources of noise that must be addressed and designed to meet the City of Birmingham noise standards: heating and cooling systems, emergency power generator, subterranean parking, and

building services. In general, K & S seemed to indicate each of these sources would require special design considerations to minimize the impact on both the residential use proposed on the site, but also the adjacent residential neighborhoods. In addition, K & S observed the existing measured site sound level did not exceed 65 DNL (Day-Night Sound Level), which is in the range of the “normally acceptable” noise level guidelines promulgated for residential land use by the U.S. Department of HUD.

The subject site is located within the Southeast Michigan Air Quality District, with monitoring stations in Pontiac and Oak Park. The district has attained and surpassed the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide and particulate matter less than 10 microns. The air quality is expected to remain high and will not establish a trend which may lead to a violation of air quality standards. In addition, the applicant indicates that the building will be consistent with many other newer building types in Birmingham that utilize more sustainable materials and equipment, which should mitigate some of the effects of the new development.

1.5 **Environmental Design & Historic Values**

The current sites is fully developed with the exception of a few small landscaped areas with little diversity. Thus, there are no concerns over the loss of natural areas on the property. In addition, it would be difficult to perform an adaptive reuse of the buildings or include them in the new design to try and minimize material that is introduced to the landfill. However, the CIS does indicate that all of the existing streetscape will be removed and replaced, including the street trees. Although there is a recommendation found in The Birmingham Plan (which is currently in draft form) which states that the City should “prevent existing, healthy trees from being removed due to new construction,” the Department of Public Services has outlined several reasons (see comments below) as to why new plantings would better serve the City of Birmingham. Thus, the Planning Division would not recommend further action in regards to street tree removal.

The CIS continues to suggest that the site and building as designed will be similar in size, scale and materiality to the existing neighboring buildings, which will bring density and activity to an underutilized site. The CIS indicates that the new building will not degrade views, and that thoughtful consideration has been given to neighboring properties to enhance the area.

It is worth noting in this section that although the applicant is proposing to introduce some landscaping in the courtyard/passage area in the middle of the building, the area underneath the building on the eastern side of the property is proposing several synthetic plantings that are not permitted. All landscaping installed on a site is required to consists of living plant material. A full review of the landscaping standards and proposed plantings will be completed in the Preliminary Site Plan review below.

Finally, the applicant has expressed that there are no historic properties on the site, and that the subject sites do not appear on the National Register of Historic

Places. In addition, the applicant suggests that the buildings on site do not appear to be historic (or eligible for designation), and that there are no designated historic resources on the adjacent properties. The Planning Division is in agreement with the assertions provided.

1.6 **Refuse, Sewer & Water**

The CIS and site plans submitted show one dedicated trash room proposed within the development. The applicant is proposing the trash room on the first floor adjacent to the receiving area located on Daines. There are no indications of the type or quantity of refuse containers noted in the plans. However, the applicant has indicated that there will be adequate space for the separation of recyclable materials. In terms of screening, the receptacles are all proposed inside the building envelope, thus fully screened by the building. Although the receptacles will be fully screened, the Planning Division does have some concerns about the logistics of trash collection. The trash room is located towards the southwest corner of the building, which makes for a long walk through the courtyard and mechanical/electrical room for both the retail spaces along the north frontage, but also for many of the residential units on floors 3-4 above which share access to one trash chute.

The development has access to sanitary sewers that exist on Brown, which the applicant has indicated should have the capacity to service the proposed development. The applicant has made clear that the City Engineer will be engaged throughout the design and all proposals will be confirmed prior to site plan approvals. The proposed development may incorporate low flow toilets, low flow faucets, and greywater recycling, which will reduce the output to the system.

At this time, the applicant has suggested that the site, which is currently fully developed, drains via an existing conveyance network. They continue to state that the new site would not introduce any new storm water to the system, and that the drainage from the site should not adversely affect the municipal system. Aside from the landscaping on site, there are no other direct storm water mitigation designs proposed, which would include any green infrastructure installations. **The Planning Division suggests that the applicant review any and all opportunities on site to provide stormwater detention in the form of green infrastructure.**

Finally, the CIS explains that the existing sites utilize the existing water mains along Brown and Daines, and that there are no capacity issues present or expected as a result of the development.

1.7 **Public Safety**

The CIS does not indicate that they expect to have any public safety concerns as a part of the proposed development. The site has adequate access for emergency vehicles on two sides and contains an elevator that can accommodate a medical cart. Furthermore, the applicant states that building will have a security system in place per each tenants requirements. The applicant suggests that the tenant will bring the details of which to the Police Department for approval. Although the fire

suppression system has not yet been designed, the applicant has stated that the building will be fully suppressed, contain Siamese fire department connections, and a Knox box will be provided.

1.8 Transportation Issues

The applicant has submitted a completed Transportation Impact Study as required by the City's transportation consultants. A review of the submission will be performed by the City's traffic consultants and furnished to the Planning Board prior to CIS and Preliminary Site Plan Review.

Please see the attached review responses from the City's transportation consultants, as well as responses from the applicant. The full transportation impact study has been updated within the larger CIS document, but the review letters have been kept separate for convenience.

Aside from passenger vehicle transportation, the CIS indicates that several other modes of transportation are available close by as well. There are two SMART bus stations in close proximity to the site, bicycle facilities, and complete pedestrian connections to existing sidewalks. In addition to providing bike racks in the public right-of-way, the applicant is also proposing a bike storage/parking facility within the parking garage to encourage biking.

Finally, the applicant has indicated that there will be dedicated parking within the underground parking facility that is dedicated to electric vehicle charging, as well as dedicated parking for compact cars.

1.9 Parking Issues

Based on a review of the site plans submitted, the applicant is proposing a below grade off-street parking facility with 59 parking spaces where 47 are required. Due to the parking facility's placement below-grade, the applicant meets the parking requirements of the Downtown Overlay standards and provides an improved condition from the existing parking presently on the site. A full review of the parking conditions proposed is provided in the Preliminary Site Plan Review below.

1.10 Natural Features

As noted in several places above, the site does not contain any natural features that will be lost as a result of this development. In addition, the little landscaped area that exists does not provide any significant stormwater detention properties, nor does it contain enough variety of plantings to raise concerns over the loss of habitat for pollinators and other creatures. There are no special considerations that need to be had in terms of floodplains, and there are no other water bodies nearby.

1.11 Departmental Reports

1. **Engineering Division** – Please see the attached Engineering Division comments dated 2/18/2022.

2. **Department of Public Services** – The Department of Public Services has provided the following comments:

This plan would include the removal of 2 existing city Honey Locust trees that are in good condition. The diameter at breast height (DBH) for one is 12" and for the other is 4".

The DPS Forestry division will allow for the removal of the trees because of the following reasons:

- Planned construction activities will affect the health of the trees;
- Honey Locusts are currently an overrepresented species in the City; and
- The City will lose 16" DBH but gain 18"+ DBH in new trees in what we will assume to be excellent condition.

Regarding the proposed new city street trees: The hybrid elms are acceptable. The "Presidential Gold" Ginkgos have a 30-40 ft. width at maturity. We recommend "Goldspire" ginkgo instead. Same look, but columnar growth pattern with a 6 ft. mature width for this tight location, and in addition they must be male clone only (seedless variety).

3. **Fire Department** – Please see the attached Fire Department comments.
4. **Police Department** – The Police Department has provided several comments regarding parking for the site. The PD is encouraged by the proposal of the underground parking facility, and that the site will meet its off-street parking requirements, but does have some concerns about construction parking for the project and its impact on the Pierce St. garage and the surrounding neighborhood. This could especially be impactful with the construction of the RH project around the same time.
5. **Building Division** – Please see the attached Building Division comments dated 2/15/2022.
6. **Parking Manager** – The Parking Manager has no concerns at this time.

1.12 **Summary of CIS**

The following is a list of outstanding or unresolved issues relating the CIS information provided:

1. The Planning Division suggests that the applicant review any and all opportunities on site to provide stormwater detention in the form of green infrastructure;
2. The applicant comply with the requests of the City's traffic consultant and submit a final transportation impact study; and
3. The applicant must comply with the requests of all City departments.

1.13 **Suggested Action**

Based on a review of the CIS documents provided and the standards outlined in Article 7, Section 7.27 of the Zoning Ordinance, the Planning Division recommends that the Planning Board **ACCEPT** the Community Impact Study as provided by the applicant for the proposed development at 294 E. Brown with the following conditions:

1. The Planning Division suggests that the applicant review any and all opportunities on site to provide stormwater detention in the form of green infrastructure;
2. The applicant comply with the requests of the City's traffic consultant and submit a final transportation impact study; and
3. The applicant must comply with the requests of all City departments.

1.14 **Sample Motion Language**

Motion to **ACCEPT** the Community Impact Study as provided by the applicant for the proposed development at 294 E. Brown with the following Conditions:

1. The Planning Division suggests that the applicant review any and all opportunities on site to provide stormwater detention in the form of green infrastructure;
2. The applicant comply with the requests of the City's traffic consultant and submit a final transportation impact study; and
3. The applicant must comply with the requests of all City departments.

OR

Motion to **POSTPONE** the Community Impact Study as provided by the applicant for the proposed development at 294 E. Brown pending receipt of the following:

1. _____
2. _____
3. _____

OR

Motion to **REJECT** the Community Impact Study as provided by the applicant for the proposed development at 294 E. Brown for the following reason(s):

1. _____
2. _____
3. _____

Preliminary Site Plan Review

The applicant has submitted an application for Preliminary Site Plan review for the construction of a 4-story mixed-use building in the B2 (General Business) and D3 (Downtown Overlay) Zoning Districts. The subject site currently contains a 2-story office/commercial building, street trees, landscaping, and associated parking and site improvements. The proposed new building will contain a mix of retail, office and residential units, as well as a rooftop use, a courtyard/passage that connects to the RH site to the east, and a 59-car below-grade parking facility. The primary materials on the building façade are brick, limestone and glass.

On February 23, 2022, the Planning Board moved to postpone consideration of the Preliminary Site Plan review to give the applicant time to address the issues noted in the CIS, but also to make revisions to the site plans per staff comments. The applicant has provided revised site plans with minor modifications to the parking and loading entries, as well as a revised photometric plan.

1.0 Land Use & Zoning

- 1.1 **Existing Land Use** – The existing land use is commercial, and currently contains a 2-story office building and an associated off-street parking facility.
- 1.2 **Zoning** – The subject site exists within the B2 (General Business) and D3 (Downtown Overlay) Zoning Districts.
- 1.3 **Summary of Adjacent Land Use & Zoning** – The following chart summarizes existing land use and zoning classifications of the adjacent and/or nearby properties:

	North	South	East	West
Existing Land Use	Commercial	Mixed-Use	Commercial	Commercial/ Office
Existing Zoning District	B4 (Business-Residential)	B2-B (General Business)	B2 (General Business)	B2 (General Business)
Overlay Zoning District	D4	D2	D4	D3

2.0 Setback & Height Requirements

The attached zoning compliance summary analysis provides the required and proposed bulk, area, and placement regulations for the proposed project. The applicant appears to meet the bulk, area and placement requirements of the B2/D3 zoning districts.

3.0 Screening & Landscaping

- 3.1 **Dumpster Screening** – The applicant is proposing one trash room on the first floor at the southwest corner of the site adjacent to the receiving area, which appear

to collect from the first floor through the courtyard and mechanical room, as well as floors 3-4 through a trash chute. There are no indications of the type or quantity of refuse containers noted in the plans. In terms of screening, the receptacles are all proposed inside the building envelope, thus fully screened by the building.

- 3.2 Parking Lot Screening – The applicant is proposing a below-grade, 59-space off-street parking facility. The facility spans the entire property, with the entrance to the facility being located off Brown at the northwest corner of the property. Due to the proposed parking facilities location underground, the parking facility is considered to be fully screened and will require no additional screening.
- 3.3 Mechanical Equipment Screening – The site plans proposed show a number of rooftop mechanical units that will require screening.

The proposed rooftop units (RTU's) are all centrally located (in terms of depth) on the roof in various locations. The applicant has indicated extensive metal panel screening enclosures on the elevation drawings, and has included the location of such on the roof plan. The applicant has also submitted specification sheets on the proposed RTU's, and has provided a height dimension of 9 ft. for the proposed RTU screening on the elevation drawings. The RTU specifications provided range from small air handling units to large package HVAC units that measure a little over 6 ft. in height at the tallest (not including any curbs). The applicant appears to meet the screening requirements for the proposed rooftop units.

- 3.4 Landscaping – The applicant is proposing to install landscaping on-site within the courtyard/passage, as well as on the roof. The bulk of the landscaping proposed on the ground level are neat evergreen hedges/shrubs (Green Velvet Boxwood), with other flowering shrubs (Bobo and Pinky Winky Hydrangea) mixed in at the courtyard/passage entries. In addition, 4 flowering trees (Kousa Dogwood), 12 columnar trees (Slender Silhouette Sweetgum) and ornamental grasses (All Gold J. Forest Grass) are proposed in the open side of the courtyard.

As noted above, the applicant is proposing to install synthetic plantings beneath the building on the eastern part of the courtyard/passage. Article 4, Section 4.20 (D)(1) requires all landscaping to consist of approved natural materials or living plant materials. **The applicant must remove the synthetic planting material (turf, groundcover, birch trees, etc.) and replace with a live planting material, or propose some other non-landscaped decorative element.**

As for the roof plantings, the applicant is proposing extensive plantings along the northern, southern and eastern edges of the rooftop. These plantings include flowering trees (Coralburst Crabapple), ornamental grasses (Hamelin Fountain Grass), canopy trees (Presidential Gold Gingko), columnar trees (Slender Silhouette Sweetgum) and evergreen groundcover (Green Carpet Pachy). The applicant is also proposing synthetic turf on the rooftop.

None of the proposed plantings appear explicitly on the prohibited species list found in Article 4, Section 4.20 (D)(4). However, the flowering trees proposed

(Kousa Dogwood and Coralburst Crabapple) appear to bear fruit, albeit small fruit. **The Planning Board should discuss the proposed flowering trees and their potential to be considered succulent fruit bearing trees, which are listed on the prohibited species list.**

- 3.5 Streetscape Elements – The applicant has provided a number of street trees, street lights, 5 benches, 4 trash receptacles, and 2 bike racks on the site plans submitted. In terms of street trees, Article 4, Section 4.20 (G) requires at least 1 street tree for each 40 linear feet of frontage along a street. A breakdown of the required and proposed street trees is provided below:

Street	Linear Frontage (ft.)	Required	Provided
Brown	170	4	3
Daines	170	4	3
Total	340	8	6

It is apparent that the areas of the streetscape where the 4th tree would be placed contain the entrance to their underground parking access and receiving access areas. **The applicant must provide an additional street tree on Brown and Daines, obtain a variance from the Board of Zoning Appeals, or obtain a waiver from the Staff Arborist.**

The applicant has obtained a waiver from the Staff Arborist for 1 street tree along Brown, and 1 street tree along Daines.

As far as streetlights, the applicant appears to be proposing 4 street lights along Brown. Each streetlight is spaced 40 ft. apart and set in between street trees. All streetlights proposed are expected to meet the streetscape standards for Downtown Birmingham.

Finally, the applicant has proposed 5 total benches: 3 along Brown and 2 along Daines. There are 2 bike racks proposed on private property along the Connecting Via at the west side of the property, and 4 trash receptacles located adjacent to the benches on the site plans submitted. **The Planning Board may wish to require the applicant to include additional benches, bike racks, or trash receptacles along each street frontage.**

4.0 Parking, Loading & Circulation

- 4.1 Parking – Article 4, Section 4.46 of the Zoning Ordinance requires the applicant to provide the following off-street parking for the uses proposed in the site plans submitted:

Proposed Use	Requirements	Area or Units	Spaces
2 or less room unit	1 space per unit	4	4
3 or more room unit	1.25 spaces per unit	34	43
Total Required	-	-	47
Total Proposed	-	-	59

Based on the calculations above, the applicant meets the parking requirements for the proposed development. These spaces appear to be available for the residential and office users of the building through what appears to be a restricted access garage door. **The applicant must clarify how many parking spaces are intended to be permitted to be used by office users of the building.**

The applicant has indicated that the 12 spaces over the required off-street parking will be provided to the office users of the building.

- 4.2 Loading – Based on the commercial space (6,737 sq. ft.) and office space (36,217 sq. ft.) within the proposed development, the applicant is required to provide two off-street loading spaces with the following minimum dimensions: 40 feet long, 12 feet wide and 14 feet high. The applicant has provided two loading spaces (40 ft. x 12 ft.) within the south side of the building along Daines. The applicant has indicated that the loading spaces will be 14 ft. high, and that the overhead garage doors will also measure 14 ft. high. However, scaling out the elevation drawing on Sheet A200 indicates that the entrance to the loading and receiving room is only about 13 ft. high, which is not tall enough to meet the ordinance. Thus, **the applicant must submit revised plans showing a loading space that meets the requirements of Article 4, Section 4.24 (C) of the Zoning Ordinance.**

The applicant has revised the interior loading area to contain one large overhead door instead of two, and has provided vehicle maneuvering plans based on Planning Board comments. The elevation drawings, however, still show two overhead garage doors. The applicant must revise the site plans submitted to be consistent with the single garage door, and provide dimensions for such.

- 4.3 Vehicle Circulation & Access – The site plans submitted indicate that the main vehicle access to the site will be through an opening on the northwest side of the building that leads to the underground parking facility. The curb cut measures 20ft. wide and contains glass overhead garage doors. Delivery and service vehicles will access the site on the southwest side of the building through two solid garage doors that access the receiving area of the building.

The applicant has provided an opening on the west elevation of the building at the parking ingress/egress point to provide for greater visibility while pulling in and out of the parking garage. However, similar to the loading issues described above, the elevation drawings have not been updated to reflect the change.

- 4.4 Pedestrian Circulation & Access – Pedestrian access is varied with a main lobby entrance for the upper office and residential floors in the center of the building along Brown. There are also two retail access points along Brown, as well as the courtyard/passage. The office space along Daines has similar pedestrian access.

5.0 Lighting

The applicant has submitted an exterior lighting design concept, specification sheets for proposed light fixtures, and a photometric plan detailing the illuminance level across the property pursuant to Article 4, Section 4.21 (C). The lighting concepts consists of bollard lighting, in-grade lighting, and accent lighting concentrated in the courtyard /passage and rooftop of the proposed development. A preliminary review of the light fixtures proposed suggests that the bollard lights are fully cutoff as defined by Section 9.02, but the in-grade strip lighting and the accent lighting would not be considered fully cut off. The lighting does appear to be placed in a manner that is consistent and coordinated, and positioned away from abutting properties where appropriate.

A review of the photometric plan provided does indicate light intensity that stays within the permitted 1.5 maintained foot-candles at most locations around the site. However, it does appear as though the applicant provided photometrics in the area of the entry ramp and receiving dock with the garage doors closed. The Planning Division will require the applicant to provide light intensity details for the open garage doors to ensure that the light intensity does not prove to exceed the permitted limits. **The Planning Division will work with the applicant to provide a complete photometric plan and a full detailed review of the lighting proposal at Final Site Plan review.**

The applicant has provided an updated photometric plan indicating a few new fixtures, as well as the fixtures proposed within the loading area and the parking entryway. The Planning Division will work with the applicant to perfect the photometric plan at Final Site Plan.

6.0 Departmental Reports

6.1 Engineering Department – Please see the attached Engineering Division comments dated 2/18/2022.

6.2 Department of Public Services – The Department of Public Services has provided the following comments:

This plan would include the removal of 2 existing city Honey Locust trees that are in good condition. The diameter at breast height (DBH) for one is 12" and for the other is 4".The DPS Forestry division will allow for the removal of the trees because of the following reasons:

- Planned construction activities will affect the health of the trees;
- Honey Locusts are currently an overrepresented species in the City; and
- The City will lose 16" DBH but gain 18"+ DBH in new trees in what we will assume to be excellent condition.

Regarding the proposed new city street trees: The hybrid elms are acceptable. The "Presidential Gold" Ginkgos have a 30-40 ft. width at maturity. We recommend "Goldspire" ginkgo instead. Same look, but columnar growth pattern

with a 6 ft. mature width for this tight location, and in addition they must be male clone only (seedless variety).

- 6.3 Fire Department – Please see the attached Fire Department comments.
- 6.4 Police Department – The Police Department has provided several comments regarding parking for the site. The PD is encouraged by the proposal of the underground parking facility, and that the site will meet its off-street parking requirements, but does have some concerns about construction parking for the project and its impact on the Pierce St. garage and the surrounding neighborhood. This could especially be impactful with the construction of the RH project around the same time.
- 6.5 Building Department – Please see the attached Building Division comments dated 2/15/2022.
- 6.6 Parking Manager – The Parking Manager has no concerns at this time.

7.0 Design Review

The applicant has submitted elevation drawings with material notes, but has not yet submitted any detailed material specifications for the proposed building. Specification sheets and samples for all façade materials, windows & doors, railings, and other proposed materials are required at Final Site Plan to complete the Design Review. Additionally, the applicant must submitted glazing calculations for the proposed building, a sign plan, and all other design related details, a full review of which will be provided at Final Site Plan. **The applicant must submit material specifications, samples and all other required information for the proposed building to complete the Design Review at Final Site Plan.**

8.0 Required Attachments

	Submitted	Not Submitted	Not Required
Existing Conditions Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed and Scaled Site Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Certified Land Survey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interior Floor Plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landscape Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Photometric Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Colored Elevations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Material Specification Sheets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Material Samples	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Site & Aerial Photographs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9.0 Approval Criteria

In accordance with Article 7, section 7.27 of the Zoning Ordinance, the proposed plans for development must meet the following conditions

- 9.1 The location, size and height of the building, walls and fences shall be such that there is adequate landscaped open space so as to provide light, air and access to the persons occupying the structure.
- 9.2 The location, size and height of the building, walls and fences shall be such that there will be no interference with adequate light, air and access to adjacent lands and buildings.
- 9.3 The location, size and height of the building, walls and fences shall be such that they will not hinder the reasonable development of adjoining property and not diminish the value thereof.
- 9.4 The site plan, and its relation to streets, driveways and sidewalks, shall be such as to not interfere with or be hazardous to vehicular and pedestrian traffic.
- 9.5 The proposed development will be compatible with other uses and buildings in the neighborhood and will not be contrary to the spirit and purpose of this chapter.
- 9.6 The location, shape and size of required landscaped open space is such as to provide adequate open space for the benefit of the inhabitants of the building and the surrounding neighborhood.

10.0 Recommendation

Based on a review of the site plans submitted and the requirements outlined in Article 7, Section 7.27 of the Zoning Ordinance, the Planning Division recommends that the Planning Board **APPROVE** the Preliminary Site Plan for 294 E. Brown with the following conditions:

1. The applicant must remove the synthetic planting material (turf, groundcover, birch trees, etc.) and replace with a live planting material, or propose some other non-landscaped decorative element;
2. The applicant must provide an additional street tree on Brown and Daines, obtain a variance from the Board of Zoning Appeals, or obtain a waiver from the Staff Arborist;
3. The applicant must clarify how many parking spaces are intended to be permitted to be used by office users of the building;
4. The applicant must submit revised plans showing a loading space that meets the requirements of Article 4, Section 4.24 (C) of the Zoning Ordinance;
5. The applicant must submit material specifications, samples and all other required information for the proposed building to complete the Design Review at Final Site Plan; and
6. The applicant must comply with the requests of all City Departments.

11.0 Sample Motion Language

Motion to **APPROVE** the Preliminary Site Plan for 294 E. Brown with the following conditions:

1. The applicant must remove the synthetic planting material (turf, groundcover, birch trees, etc.) and replace with a live planting material, or propose some other non-landscaped decorative element;
2. The applicant must submit revised plans showing a loading space that meets the requirements of Article 4, Section 4.24 (C) of the Zoning Ordinance;
3. The applicant must submit material specifications, samples and all other required information for the proposed building to complete the Design Review at Final Site Plan; and
4. The applicant must comply with the requests of all City Departments.

OR

Motion to **POSTPONE** the Preliminary Site Plan for 294 E. Brown pending receipt of the following:

1. _____
2. _____
3. _____

OR

Motion to **DENY** the Preliminary Site Plan for 294 E. Brown for the following reasons:

1. _____
2. _____
3. _____

**Zoning Compliance Summary Sheet
Final Site Plan Review
294 E. Brown**

Existing Site: 2 story commercial/office building

Zoning: B2 (General Business) & D3 (Downtown Overlay)

Land Use: Commercial/Office

Existing Land Use and Zoning of Adjacent Properties:

	North	South	East	West
Existing Land Use	Commercial	Mixed-Use	Commercial	Commercial/ Office
Existing Zoning District	B4 (Business-Residential)	B2-B (General Business)	B2 (General Business)	B2 (General Business)
Overlay Zoning District	D4	D2	D4	D3

Land Area: Existing: 0.758 ac
Proposed: 0.758 ac

Dwelling Units: Existing: 0 units
Proposed: 38 units

Minimum Lot Area/Unit: Required: N/A
Proposed: N/A

Min. Floor Area /Unit: Required: 300 sq. ft. (single story hotel or motel)
600 sq. ft. (efficiency and one bedroom)
800 sq. ft. (two or more bedroom)
Proposed: 936 sq. ft. (one bedroom)
1,316-1,200 (two or more bedroom)

Max. Total Floor Area: Required: N/A
Proposed: N/A

Min. Open Space: Required: N/A
Proposed: N/A

Max. Lot Coverage:	Required:	N/A
	Proposed:	N/A
Front Setback:	Required:	0 ft.
	Proposed:	0 ft.
Side Setbacks	Required:	0 ft. maximum
	Proposed:	0 ft.
Rear Setback:	Required:	10 ft.
	Proposed:	N/A
Min. Front+Rear Setback	Required:	N/A
	Proposed:	N/A
Max. Bldg. Height:	Permitted:	68 ft., 4 stories
	Proposed:	65 ft., 4 stories
Min. Eave Height:	Required:	20 ft.
	Proposed:	52 ft.
Floor-Floor Height:	Required:	N/A
	Proposed:	N/A
Front Entry:	Required:	On frontage line
	Proposed:	On frontage line
Absence of Bldg. Façade:	Required:	N/A
	Proposed:	N/A
Opening Width:	Required:	N/A
	Proposed:	N/A
Parking:	Required:	47 off-street spaces
	Proposed:	59 off-street spaces
Min. Parking Space Size:	Required:	180 sq. ft.
	Proposed:	180 sq. ft.
Parking in Frontage:	Required:	N/A
	Proposed:	N/A
Loading Area:	Required:	2 off-street loading spaces 40 ft. x 12 ft. x 14 ft.

Screening:

Proposed: 2 off-street loading spaces
40 ft. x 12 ft. x 13 ft.

Parking: Required: 6 ft. masonry screen wall
 Proposed: Facility located underground

Loading: Required: Screened from view
 Proposed: Interior loading area screened by building

Rooftop Mechanical: Required: Screened from view
 Proposed: 9 ft. metal panel screen wall

Elect. Transformer: Required: N/A
 Proposed: N/A

Dumpster: Required: Masonry screen wall with wood gates
 Proposed: One fully interior trash room fully screened by building facade

Departmental Comments



CITY OF BIRMINGHAM FIRE DEPARTMENT

572 SOUTH ADAMS • BIRMINGHAM, MICHIGAN 48009 • 248.530.1900 FAX 248.530.1950

Brown Street Mixed Use Preliminary Site Plan

Fire Department Comments

1. A bi-directional antenna system (BDA) may be required per the fire code. Determination shall be made toward the end of final construction after walls are poured and construction is near completion.
2. Per City Ordinance, install emergency power shut down device(s) on the exterior of the building. This device shall disconnect power to all of the building with the exception of emergency devices such as egress lighting, fire alarm, elevator recall, etc. This device shall be secured using the Knox Shut off device. Contact Fire Marshal for specifications.
3. Full fire suppression is required for this structure.
 - a. Fire department connection to be installed on the north side (Brown St.) side and located within 100 feet of a fire hydrant. IF a hydrant is not within 100 feet of the FDC a hydrant shall be installed at the expense of the project owner to meet this requirement.
4. Stand pipe system to be installed in all stairwells on each level. Standpipe system to be installed on rooftop. Any plans for parking area (underground or above, under building) shall require a standpipe system).
5. Full fire alarm coverage and installation is required for this structure.
6. Stairway access to rooftop.
7. Required egress pathway distances shall be met and required in the building and enclosed egress points per IBC and IFC.
8. Knox box key box (surface mount) shall be required on north and south side of building due to the size of the building. Contact Fire Marshal with specific locations for Knox box installation.
9. Exterior fire alarm notification devices on rooftop elevation required.
10. Rooftop garden shall follow all fire code requirements listed in the International Fire Code.
11. Dependent on the final design height of the building and IBC, IFC requirements an emergency generator may be required.
12. Do to the size of the project and dependent on the final design height of the building a fire command center is recommended and may be required per IFC.
13. A fire pump may be required dependent of building height and available city water pressure.
14. Access on Brown St. and Danes St. of fire apparatus shall be maintained following completion of project.
15. Exit signage illuminated shall be installed above doors and at ground level of all floors.
16. If parking lot/garage is added (underground or under building) later, requirements will be submitted for this addition if necessary.

DATE: February 18, 2022

TO: Nicholas Dupuis, Planning Director

FROM: Scott Zielinski, Assistant City Engineer

SUBJECT: Preliminary Design Drawing Review Comments for 294 E Brown

As requested the Engineering Department has conducted a review of the Preliminary Design drawings prepared by Saroki Architecture dated 1-25-2022 for Design Review, and the engineering site plan drawings prepared by Nowak & Fraus for Saroki that are not dated. With respect to conformance with City ordinances and engineering standards, the Engineering Department has the following comments:

GENERAL:

- Site Plans will be required to show changes in planned grade elevations both onsite and in Right-Of-Way (ROW) space.
- Cross section of the Sewer and Water connections need to be shown along with the clarification showing a minimum of 18" clearance will be maintained between any water and sewer crossings.
- Engineering recommends the truck access to street been reviewed to assure there is enough space for trucks to turn in and out of planned truck entrance off of Daines (as Daines is a smaller width street).
- Earth Retention System (ERS) will be required for below ground work, and must be designed to be self-contained on the property.

SEWER:

- Separate connections for both Storm Sewer and Sanitary Sewer shall be established.
- Current sanitary connections appear to be adequate for building use.
- Plans do not indicate how roof drainage will be handled. Note that City Ordinance prohibits downspouts from being directly connected to the sewer system.

STORM WATER RUNOFF:

- For the proposed site development, it is the City's determination that the full property of the proposed construction site is considered the "affected area" with respect to City's Storm Water Runoff Ordinance (Chapter 114, Article III, Division 4, Sec 114-271 to 114-274). Therefore, the allowable runoff from the site for a 10-year storm event is 1.0 cfs/acre, or 0.2 cfs, whichever is greater.
- Provide calculations for required storm water detention, and show how the excess storm water will be detained and released at the allowable discharge rate.

CITY OF BIRMINGHAM
Community Development – Building Department
151 Martin Street, Birmingham, MI 48009

February 15, 2022

RE: Preliminary Site Plan Review Comments
294 E. Brown, Brown Street Mixed Use Building

As requested, the Building Department has examined the plans for the proposed project referenced above. The plans were provided to the Planning Department for site plan review purposes only and present conceptual elevations and floor plans. Although the plans lack sufficient detail to perform a code review, the following comments are offered for Planning Design Review purposes and applicant consideration:

Applicable Building Codes:

- **2015 Michigan Building Code.** Applies to all buildings other than those regulated by the *Michigan Residential Code*.
- **2015 Michigan Mechanical Code.** (Residential requirements for mechanical construction in all detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures are contained in the Michigan Residential Code)
- **2018 Michigan Plumbing Code.** (Residential requirements for plumbing construction in all detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures are contained in the Michigan Residential Code)
- **2017 National Electrical Code along with the Michigan Part 8 Rules.** (Residential requirements for electrical construction in all detached one and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height with a separate means of egress and their accessory structures are contained in the Michigan Residential Code)

Review Comments:

1. The exterior windows along the west property line will need to be fire-resistance-rated glazing in accordance with Section 716.2 of the building code.
2. No other building code concerns at this time.

294 E. Brown - New Site Plan

Carrie Laird <Claird@bhamgov.org>

Thu, Feb 3, 2022 at 11:27 AM

To: Nicholas Dupuis <ndupuis@bhamgov.org>

Cc: Bruce Johnson <Bjohnson@bhamgov.org>, Jim Surhigh <cityengineer@bhamgov.org>, Mark Clemence <mclemence@bhamgov.org>, Jack Pesha <jpesha@bhamgov.org>, Lauren Wood <Lwood@bhamgov.org>, Ryan Weingartz <rweingartz@bhamgov.org>, Scott Zielinski <szielinski@bhamgov.org>, Brendan McGaughey <bmcgaughey@bhamgov.org>

Good morning,

This plan would include the removal of 2 existing city Honey Locust trees that are in good condition. The diameter at breast height (DBH) for one is 12" and for the other is 4".

The DPS Forestry division will allow for the removal of the trees because of the following reasons:

- planned construction activities will affect the health of the trees
- Honey Locusts are currently an overrepresented species in the City
- the City will lose 16" DBH but gain 18"+ DBH in new trees in what we will assume to be excellent condition

Regarding the proposed new city street trees: The hybrid elms are acceptable. The "Presidential Gold" Ginkgos have a 30-40 ft. width at maturity. We recommend "Goldspire" ginkgo instead. Same look, but columnar growth pattern with a 6 ft. mature width for this tight location, and in addition they must be male clone only (seedless variety).

Thank you!

[Quoted text hidden]

--

Carrie A. Laird
Parks & Recreation Manager
851 S. Eton
Birmingham, MI 48009
248-530-1714

[Quoted text hidden]



MEMORANDUM

Department of Public Services

DATE: February 23, 2022

TO: Patrick Funke, Senior Associate
Michael J. Dul & Associates

FROM: Brendan McGaughey, Parks and Forestry Foreman
Carrie A. Laird, Parks and Recreation Manager

SUBJECT: Waiver to be Granted for 294 E. Brown

A waiver from the Staff Arborist shall be granted for the elimination of 2 trees upon approval of the Final Site Plan for 294 E. Brown. One (1) tree on Brown Street due to the location of the underground parking access, and one (1) tree on Daines Street due to the limited space between building frontage and curb of the street to the west, as the street widens close to Brown.

Site Plans



SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009

Date: Issued For:

01-17-2022 SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION
02-15-2022 DESIGN REVISION

Sheet No.:
A110
First Floor Plan

First Level Floor Plan
SCALE: 3/32" = 1'-0"

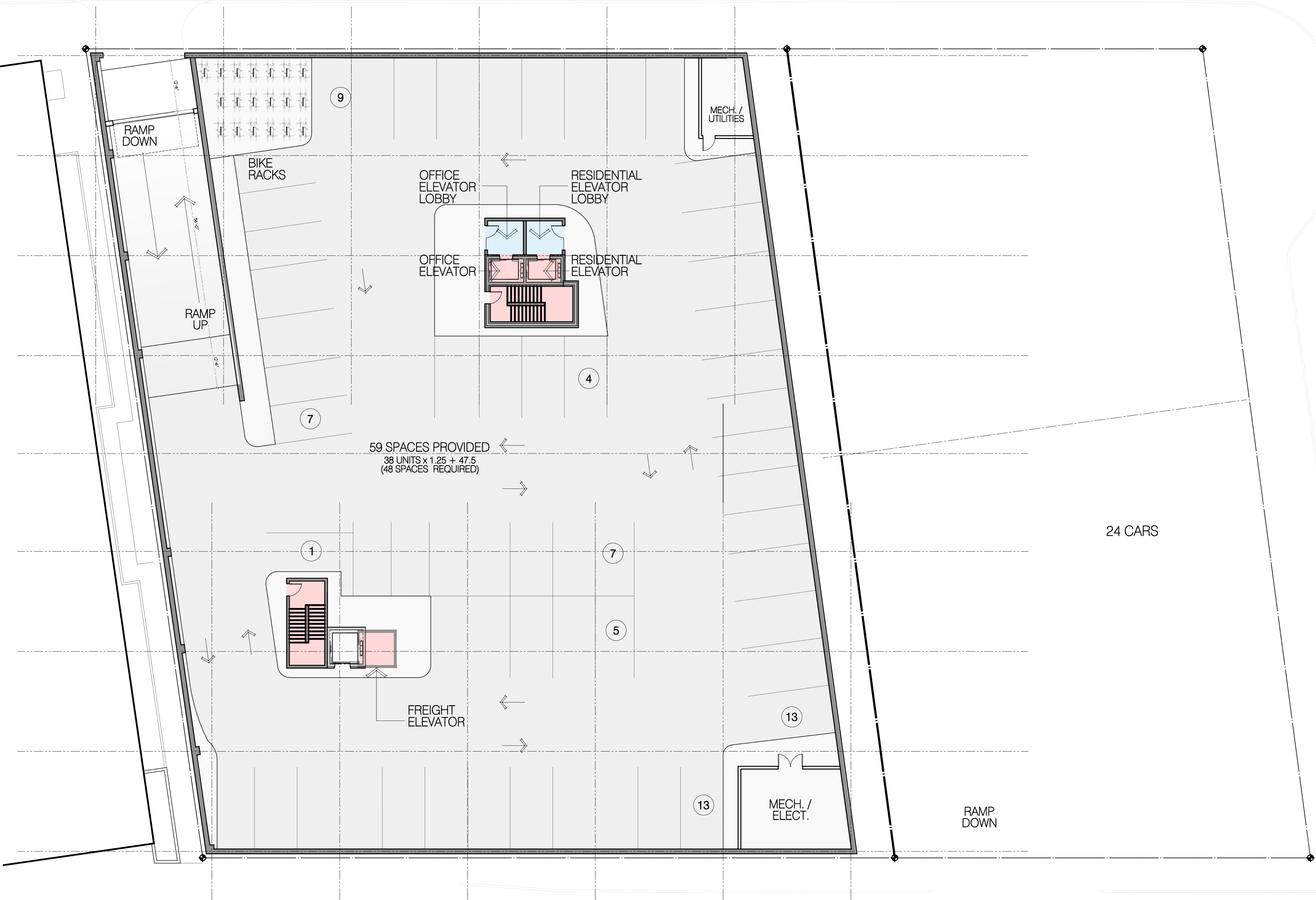
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BROWN STREET

OLD WOODWARD AVENUE

24 CARS


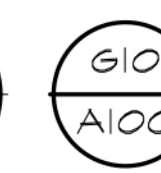
DAINES STREET



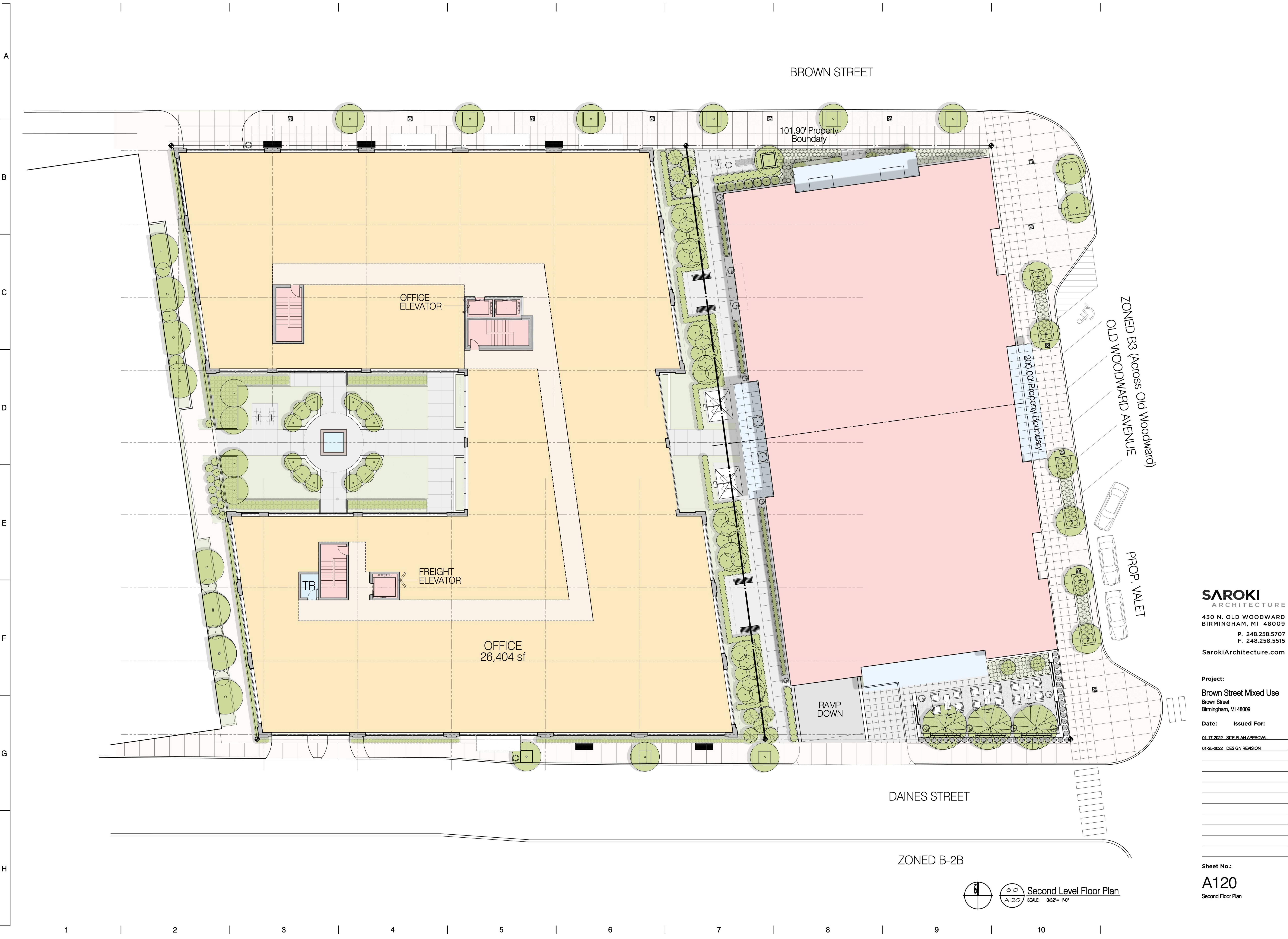
SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009
Date: 01-17-2022 **Issued For:** SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION
02-15-2022 DESIGN REVISION

Sheet No.:
A100
SOUTH / MAPLE DEMO ELEVATION

  **Lower Level Floor Plan**
SCALE: 3/32" = 1'-0"

1 2 3 4 5 6 7 8 9 10



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Brown Street Mixed Use
Brown Street
Birmingham, MI 48009
Date: 01-17-2022 SITE PLAN APPROVAL
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Sheet No.:
A120
Second Floor Plan

Second Level Floor Plan
SCALE: 3/32" = 1'-0"



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Brown Street Mixed Use
Brown Street
Birmingham, MI 48009
Date: 01-17-2022 SITE PLAN APPROVAL
Issued For: 01-25-2022 DESIGN REVISION

Sheet No.:
A130
THIRD LEVEL FLOOR PLAN

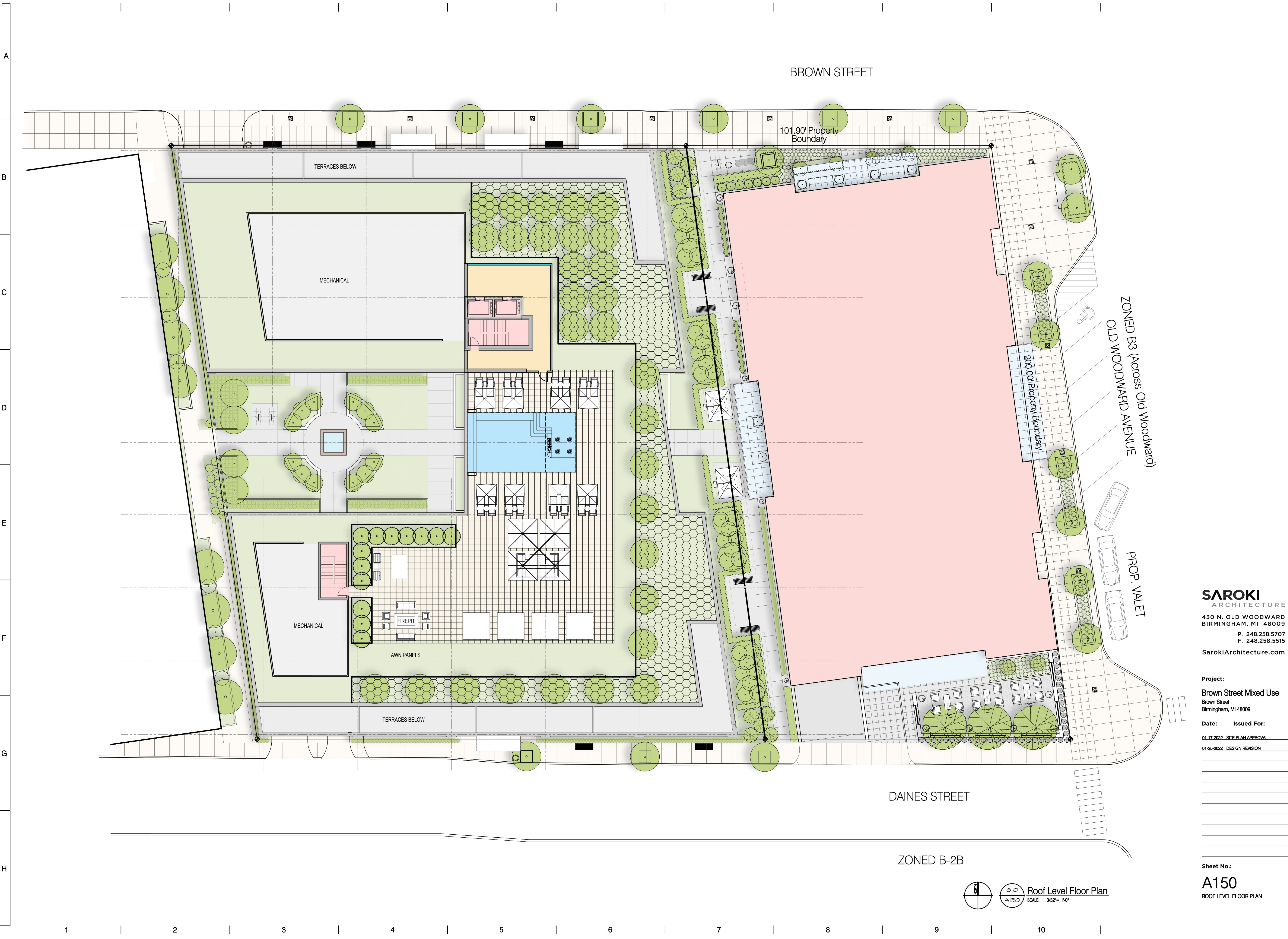
Third Level Floor Plan
SCALE: 3/32" = 1'-0"



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Brown Street Mixed Use
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Date: 01-17-2022 SITE PLAN APPROVAL
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Sheet No.:
A140
FOURTH LEVEL FLOOR PLAN



BROWN STREET

101.90' Property Boundary

TERRACES BELOW

MECHANICAL

MECHANICAL

LAWN PANELS

TERRACES BELOW

FIREPIT

ZONED B3 (Across Old Woodward)
OLD WOODWARD AVENUE

PROP. VALET

DAINES STREET

ZONED B-2B

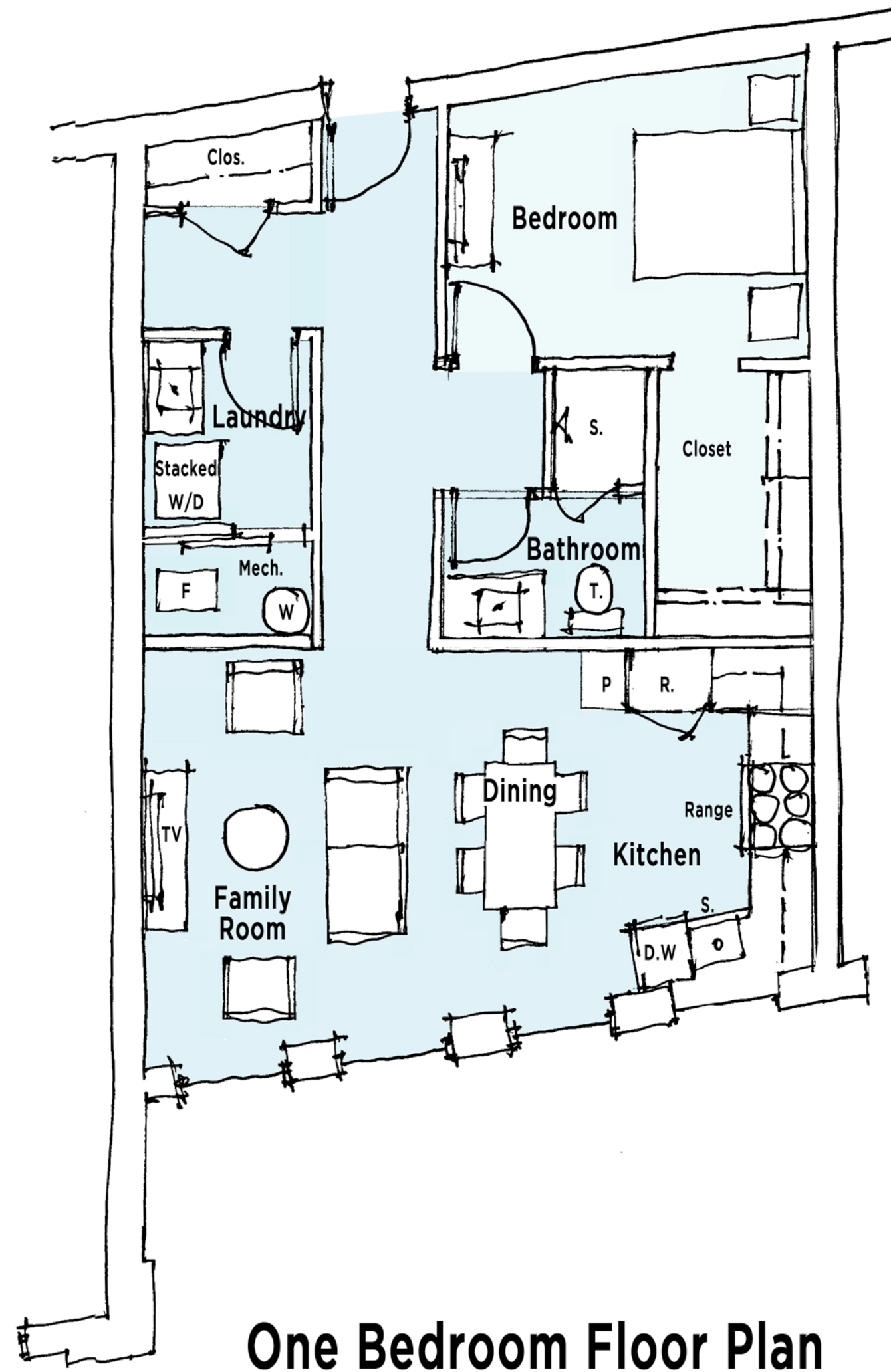
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BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
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Project:
Brown Street Mixed Use
Brown Street
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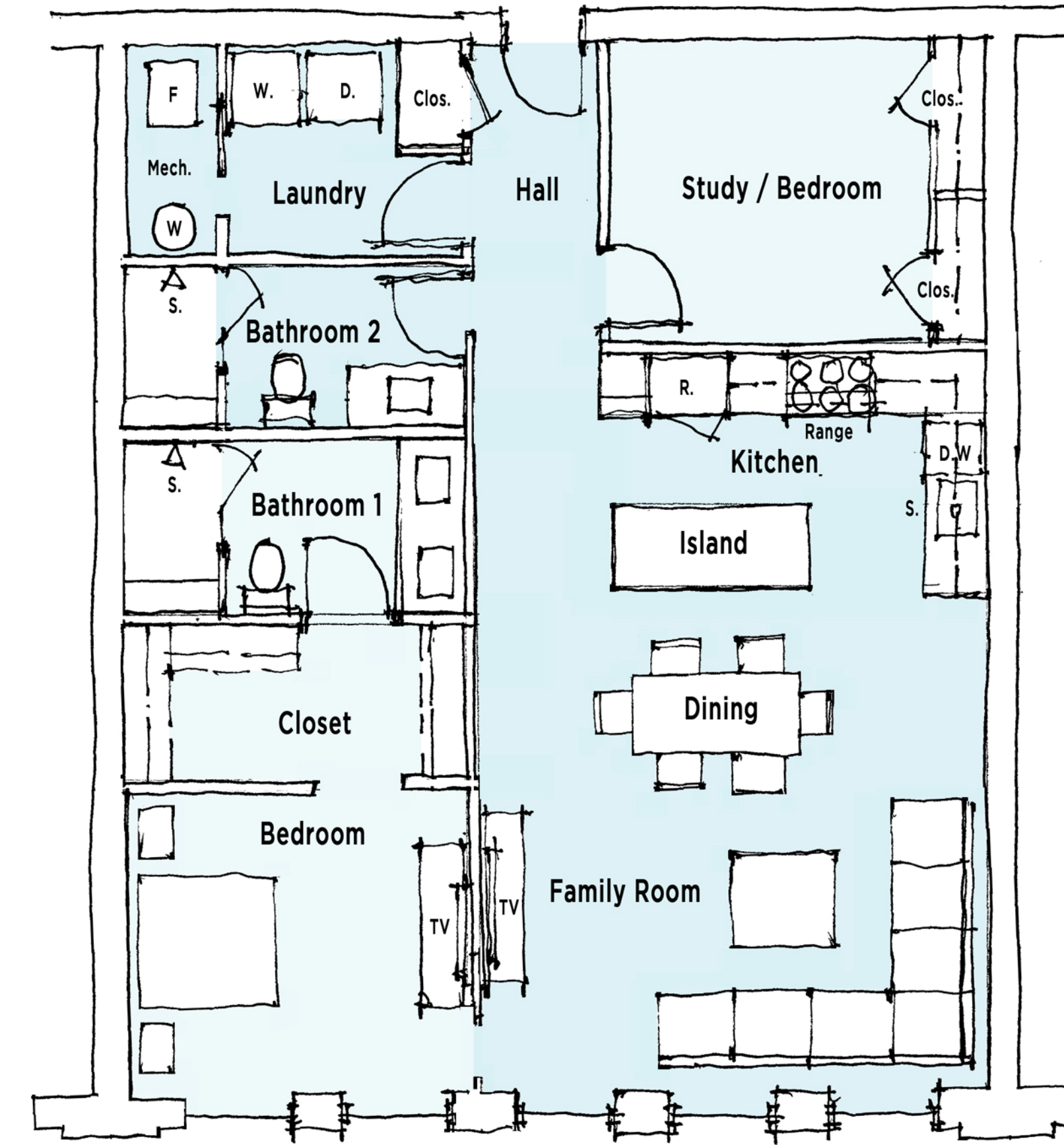
Sheet No.:
A150
ROOF LEVEL FLOOR PLAN

Roof Level Floor Plan
SCALE: 3/32" = 1'-0"

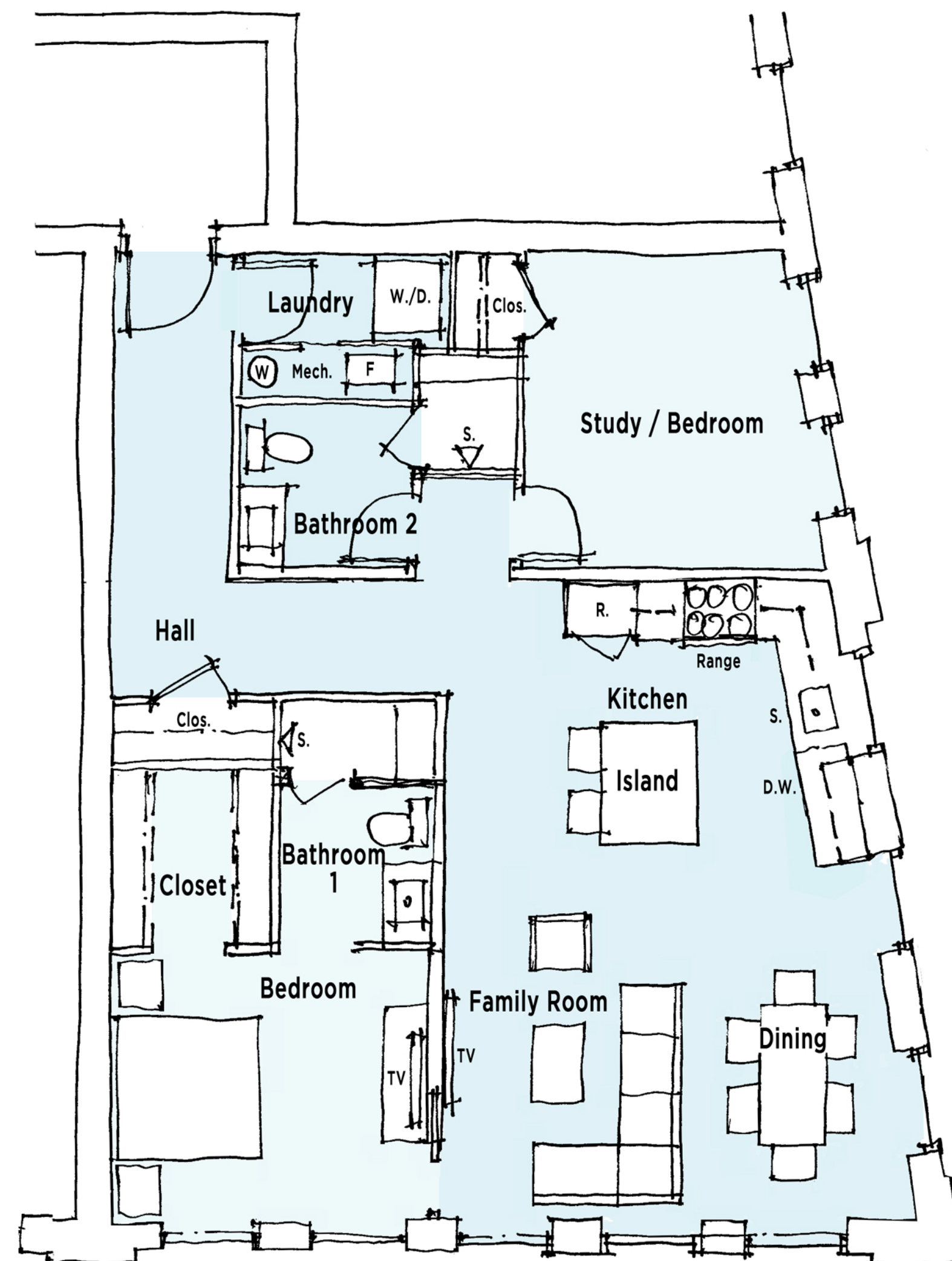
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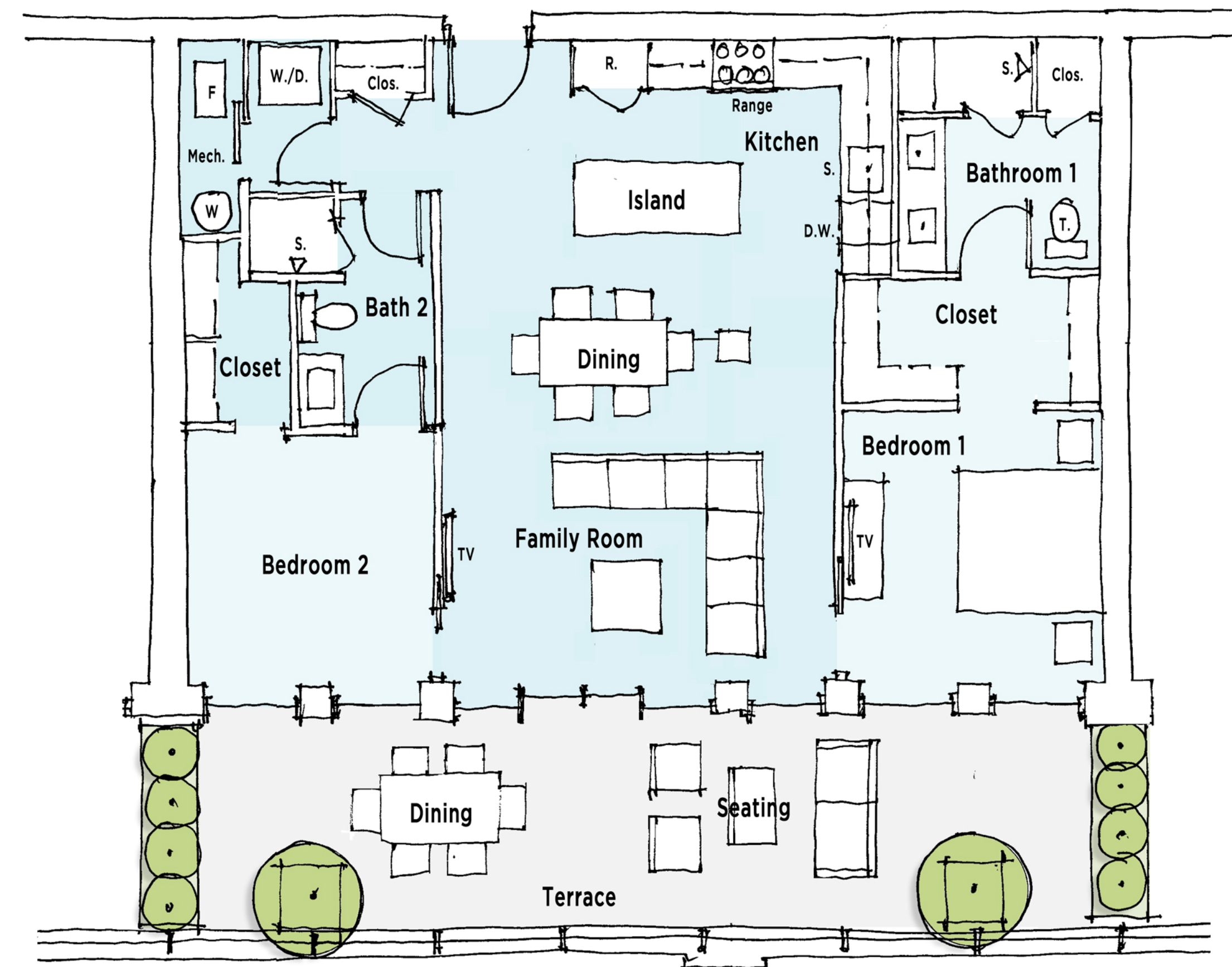
One Bedroom Floor Plan
Units 7, 8, 27, 28
936 SF



Two Bedroom Floor Plan
Units 2-4 and 11-13
1,200 SF



Two Bedroom Floor Plan
Unit 10
1,316 SF



Two Bedroom Floor Plan
Units 23-24 and 31-32
1,117 SF

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Brown Street
Birmingham, MI 48009

Date: 01-17-2022 **Issued For:** SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION

Sheet No.:
A160
Typical Unit Floor Plans

A

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1 2 3 4 5 6 7 8 9 10

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Brown Street Mixed Use
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01-25-2022 DESIGN REVISION
02-15-2022 DESIGN REVISION

Sheet No.:
A200
SOUTH ELEVATION

610 South Elevation
A200 SCALE: 3/32" = 1'-0"

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610
A204
West Elevation
SCALE: 3/32" = 1'-0"

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Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009
Date: 01-17-2022 **Issued For:** SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION

Sheet No.:
A204
WEST ELEVATION

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E

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1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

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Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009

Date: **Issued For:**

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01-25-2022 DESIGN REVISION
02-15-2022 DESIGN REVISION

Sheet No.:
A208
NORTH ELEVATION

610 North Elevation
A208 SCALE: 3/32" = 1'-0"

A

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610
A212
East Elevation
SCALE: 3/32" = 1'-0"

SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI
48009
P. 248.258.5707
F. 248.258.5515
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Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009
Date: Issued
For:
01-17-2022 SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION

Sheet No.:
A212
EAST ELEVATION

A

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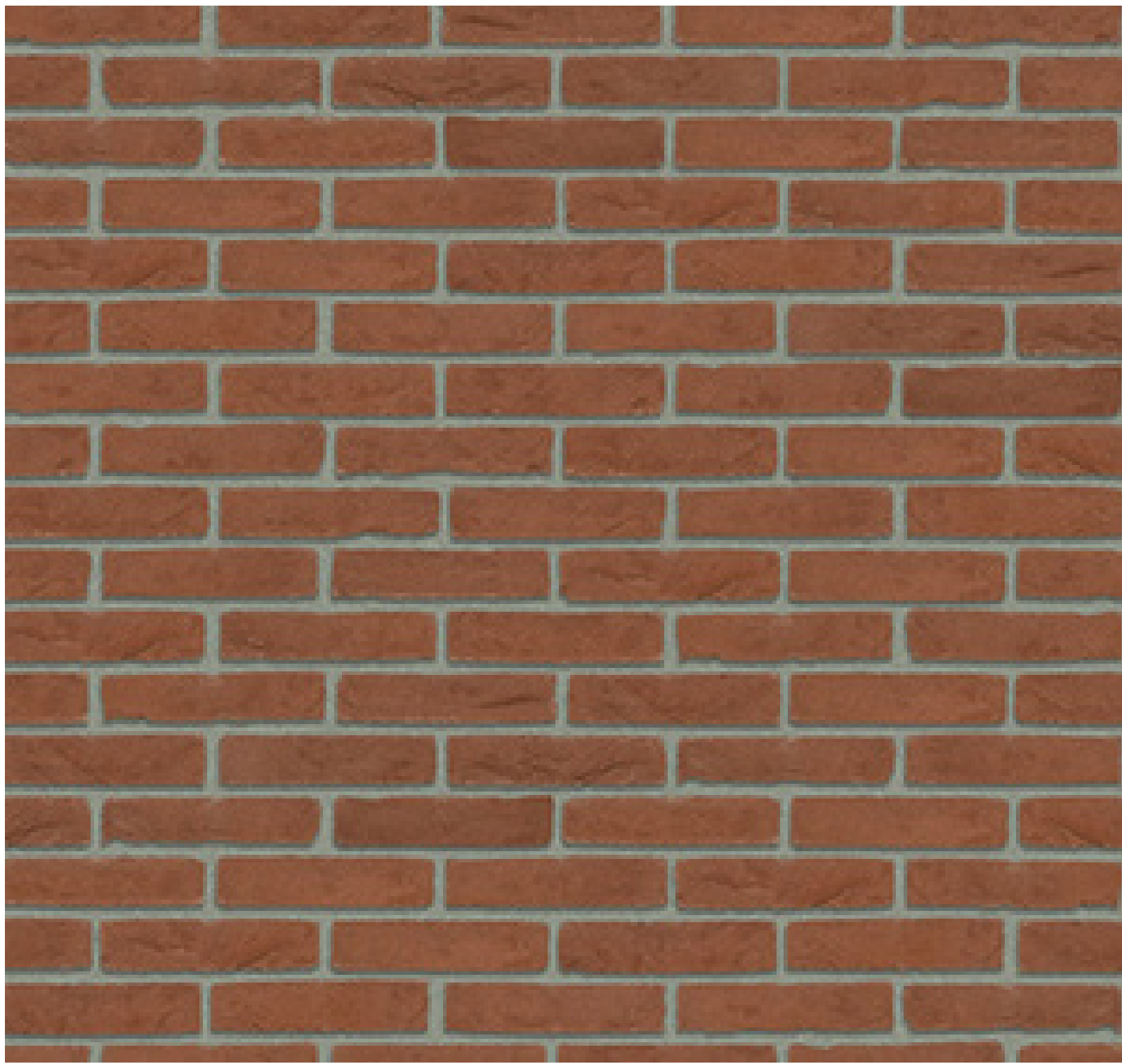
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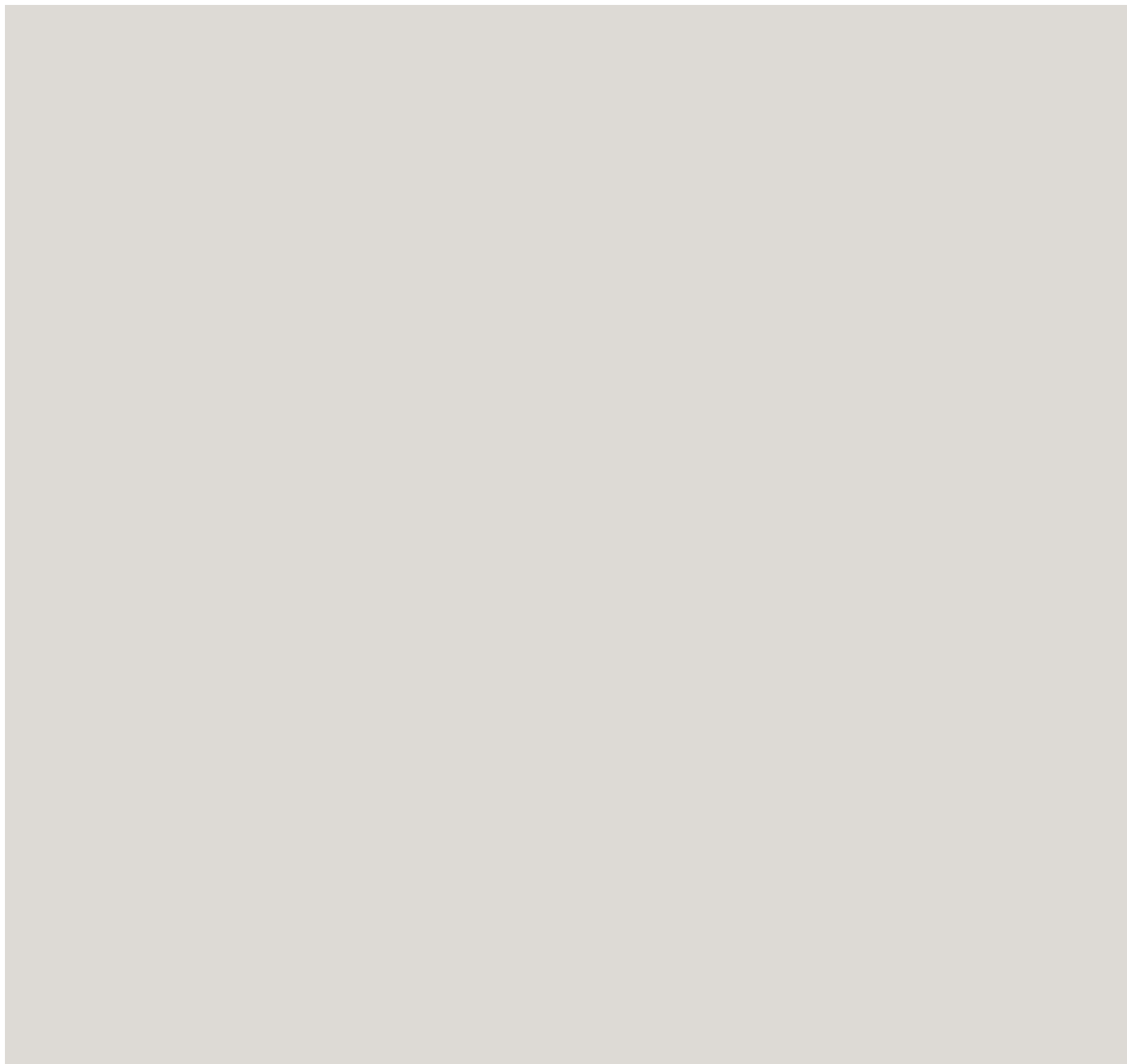
Architectural Brick



Limestone



Stucco



Metal Panel
Slate Gray



Guardrail, Typical



Operable Windows, Typical

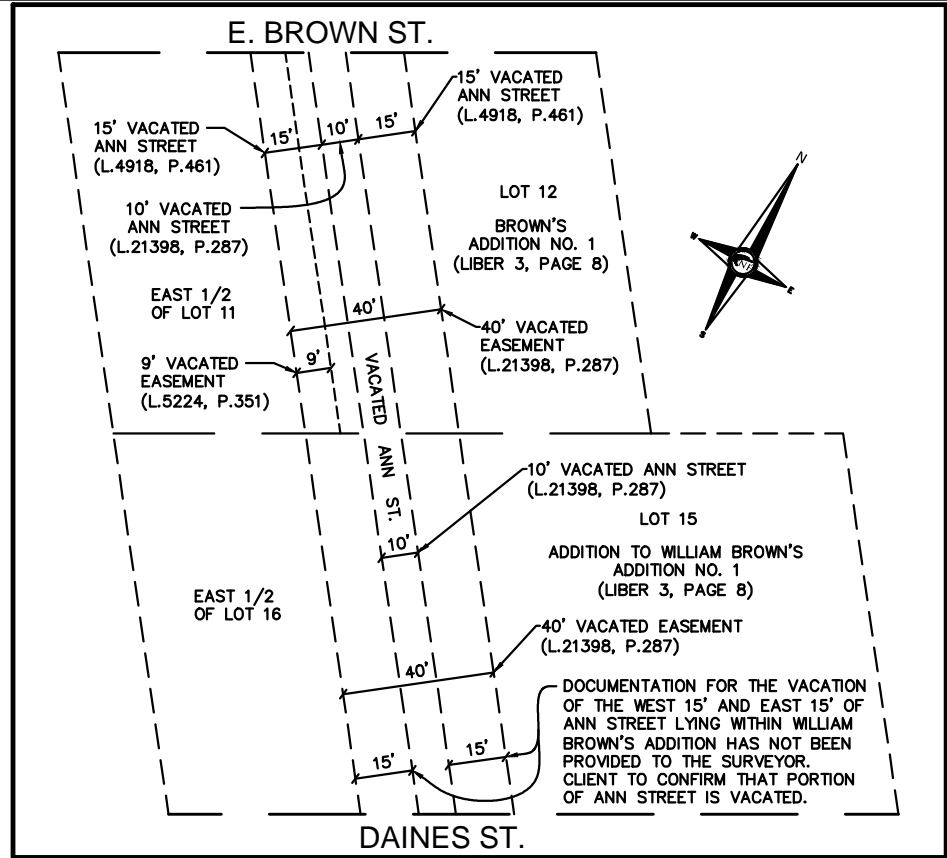
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ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
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F. 248.258.5515
SarokiArchitecture.com

Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009

Date: 01-17-2022 **Issued For:** SITE PLAN APPROVAL

Sheet No.:
A900
EXTERIOR MATERIALS

610
A900
Exterior Materials
SCALE: NTS



ANN STREET SKETCH

1" = 50'

FLOOD HAZARD NOTE

THE PROPERTY DESCRIBED ON THIS SURVEY DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. THE PROPERTY LIES WITHIN ZONE X OF THE FLOOD INSURANCE RATE MAP IDENTIFIED AS MAP NO. 26125C0537F DATED AN EFFECTIVE DATE OF 09-29-2006.

MISS DIG / UTILITY DISCLAIMER NOTE

A MISS DIG TICKET NUMBER A003240501, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY. DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON DECEMBER 29, 2020. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE UTILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.

ALTA SURVEY NOTES

THERE IS NO VISIBLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADJUSTMENTS.

THERE IS NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES AND THERE IS NO EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIR.

THERE IS NO VISIBLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

THERE IS NO VISIBLE EVIDENCE OF ANY WETLAND AREAS.

LOCATION OF UTILITIES EXISTING ON OR SERVING THE PROPERTY AS DETERMINED BY: OBSERVED EVIDENCE OR EVIDENCE FROM PLANS REQUESTED BY THE SURVEYOR AND OBTAINED FROM UTILITY COMPANIES.

THE SUBJECT PROPERTY HAS ACCESS TO S. OLD WOODWARD AVENUE, E. BROWN STREET AND DAINES STREET, ALL BEING A PUBLICLY DEDICATED ROAD.

BASIS OF BEARING NOTE

ALL BEARINGS ARE IN RELATION TO THE PREVIOUSLY ESTABLISHED SOUTH RIGHT-OF-WAY LINE OF STREET (60' WIDE) (NOW KNOWN AS BROWN STREET) OF BROWN'S ADDITION AS RECORDED IN LIBER 3 OF PLATS, PAGE 8, OAKLAND COUNTY RECORDS. (N.62.1°)

DATUM NOTE

ALL ELEVATIONS SHOWN HEREON ARE ON THE CITY OF BIRMINGHAM'S VERTICAL DATUM. HEREON, IS ONE (1.00) FOOT HIGHER THAN THE NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D. 88).

SURVEY DATA

SITE AREA:
PARCEL I: 13,818.22 SQUARE FEET OR 0.317 ACRES
PARCEL II: 18,892.08 SQUARE FEET OR 0.433 ACRES
PARCEL 2: 13,204.93 SQUARE FEET OR 0.303 ACRES
PARCEL 3: 8,137.75 SQUARE FEET OR 0.187 ACRES
TOTAL: 54,052.96 SQUARE FEET OR 1.24 ACRES

ZONED:
B2, GENERAL BUSINESS DISTRICT

PARKING SPACES:

PARCEL I: 9 REGULAR SPACES
PARCEL II: 46 REGULAR SPACES AND 3 BARRIER-FREE SPACES
PARCEL 2: 20 REGULAR SPACES AND 1 BARRIER-FREE SPACE
PARCEL 3: NO ON-SITE PARKING SPACES

A SURVEYOR CANNOT MAKE A CERTIFICATION ON THE BASIS OF AN INTERPRETATION OR OPINION OF ANOTHER PARTY. A ZONING ENDORSEMENT LETTER SHOULD BE OBTAINED FROM THE CITY OF BIRMINGHAM TO INSURE CONFORMITY AS WELL AS MAKE A FINAL DETERMINATION OF THE REQUIRED BUILDING SETBACK REQUIREMENTS.

DTE DISCLAIMER NOTE

PLEASE NOTE THAT DTE HAS NEW REGULATIONS THAT MAY IMPACT DEVELOPMENT OUTSIDE THEIR EASEMENT OR THE PUBLIC RIGHT OF WAY. CLIENT SHALL CONTACT DTE TO DETERMINE THE "NEW STRUCTURES AND POWER LINE" REQUIREMENTS AS THEY MAY APPLY TO ANY FUTURE BUILDING OR RENOVATION OF A STRUCTURE. DTE ENERGY CAN BE CONTACTED AT 800-477-4747

LEGAL DESCRIPTION - PARCEL 2 (PER TITLE COMMITMENT)

LAND IN THE CITY OF BIRMINGHAM, OAKLAND COUNTY, MI, DESCRIBED AS FOLLOWS:

THE EASTERLY 50 FEET OF LOT 12, AND THE WESTERLY PART OF LOT 13, MEASURING 82.45 FEET ON THE NORTH LOT LINE AND 82.48 FEET ON THE SOUTH LOT LINE OF BROWN'S ADDITION SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN LIBER 3 OF PLATS, PAGE 8 OF OAKLAND COUNTY RECORDS.

ADDRESS: 300 S. OLD WOODWARD AVENUE, BIRMINGHAM, MI 48009

TAX ID NUMBER: 19-36-204-006

TITLE REPORT NOTES - PARCEL 2

REFERENCE FIRST AMERICAN TITLE INSURANCE COMPANY FILE NUMBER: 910055, COMMITMENT DATE: DECEMBER 21, 2020, REVISION: B.

SCHEDULE B, PART II, EXCEPTIONS:

EXCEPTIONS: 1, 4, 5, 6, 7, 8, 10, 11, 14 AND 15 REFER TO THE OWNERSHIP OF THE PROPERTY AND/OR ARE NOT PLOTTABLE.

2. ANY FACTS, RIGHTS, INTERESTS OR CLAIMS NOT SHOWN BY THE PUBLIC RECORDS BUT THAT COULD BE ASCERTAINED BY MAKING INQUIRY OF PERSONS IN POSSESSION THEREOF OF THE LAND.

3. EASEMENTS, ENCUMBRANCES, OR CLAIMS THEREOF, NOT SHOWN BY THE PUBLIC RECORDS.

9. TERMS AND CONDITIONS CONTAINED IN RESOLUTION AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 8715, PAGE 137. (NO EASEMENTS OR RESTRICTIONS WITHIN SAID DOCUMENT, NOT PLOTTED)

12. INTEREST, IF ANY, OF THE UNITED STATES, STATE OF MICHIGAN, OR ANY POLITICAL SUBDIVISION THEREOF, IN THE OIL, GAS AND MINERALS IN AND UNDER THAT MAY BE PRODUCED FROM THE CAPTIONED LAND.

13. RIGHTS OF TENANTS, IF ANY, UNDER ANY UNRECORDED LEASES.

LEGAL DESCRIPTION - PARCEL 3 (PER TITLE COMMITMENT)

LAND IN THE CITY OF BIRMINGHAM, OAKLAND COUNTY, MI, DESCRIBED AS FOLLOWS:

LOT(S) 14, EXCEPT THAT PART TAKEN FOR WIDENING WOODWARD AVENUE OF ADDITION TO WILLIAM BROWN'S ADDITION NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN LIBER 3 OF PLATS, PAGE 8 OF OAKLAND COUNTY RECORDS.

ADDRESS: 394 S. OLD WOODWARD AVENUE, BIRMINGHAM, MI 48009

TAX ID NUMBER: 19-36-204-014

TITLE REPORT NOTES - PARCEL 3

REFERENCE FIRST AMERICAN TITLE INSURANCE COMPANY FILE NUMBER: 91045, COMMITMENT DATE: DECEMBER 21, 2020, REVISION: A.

SCHEDULE B, PART II, EXCEPTIONS:

EXCEPTIONS: 1, 4, 5, 6, 7, 9, 10, 13 AND 14 REFER TO THE OWNERSHIP OF THE PROPERTY AND/OR ARE NOT PLOTTABLE.

2. ANY FACTS, RIGHTS, INTERESTS OR CLAIMS NOT SHOWN BY THE PUBLIC RECORDS BUT THAT COULD BE ASCERTAINED BY MAKING INQUIRY OF PERSONS IN POSSESSION THEREOF OF THE LAND.

3. EASEMENTS, ENCUMBRANCES, OR CLAIMS THEREOF, NOT SHOWN BY THE PUBLIC RECORDS.

9. TERMS AND CONDITIONS CONTAINED IN RESOLUTION AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 8715, PAGE 137. (NO EASEMENTS OR RESTRICTIONS WITHIN SAID DOCUMENT, NOT PLOTTED)

11. INTEREST, IF ANY, OF THE UNITED STATES, STATE OF MICHIGAN, OR ANY POLITICAL SUBDIVISION THEREOF, IN THE OIL, GAS AND MINERALS IN AND UNDER THAT MAY BE PRODUCED FROM THE CAPTIONED LAND.

12. RIGHTS OF TENANTS, IF ANY, UNDER ANY UNRECORDED LEASES.

CERTIFICATE OF SURVEY

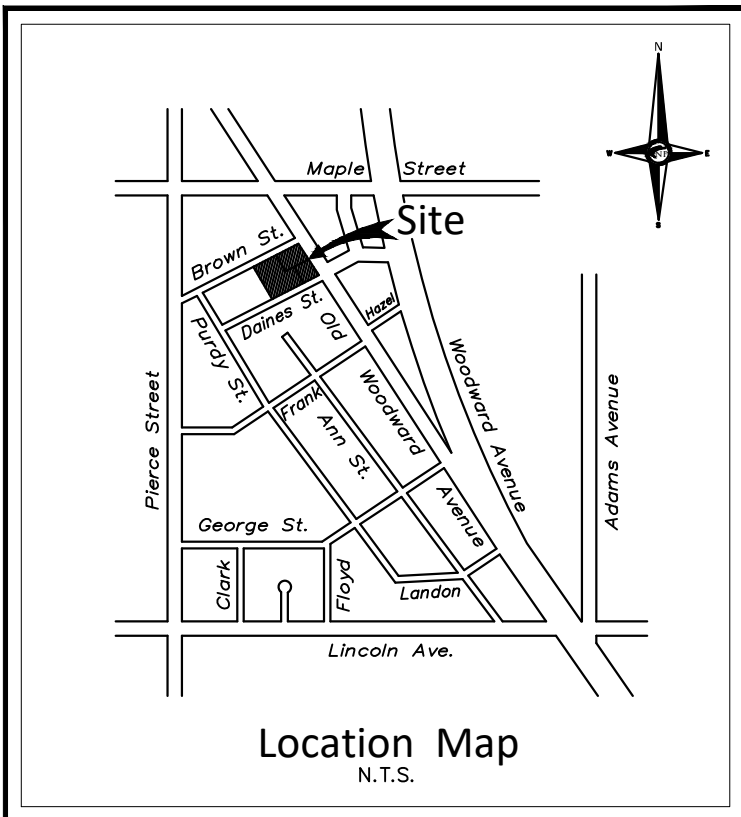
CERTIFIED TO:

-PURCHASER'S ASSIGNEE
-TROTTS PROPERTIES 294, LLC, A MICHIGAN LIMITED LIABILITY COMPANY, AS TO PARCEL 1
-BRB EQUITABLE, LLC, AS TO PARCEL 2
-FRANK T. KONJAREVICH OR LOS H. KONJAREVICH (OR SUCCESSOR TRUSTEES) AS THE TRUSTEE FOR THE FRANK T. KONJAREVICH REVOCABLE LIVING TRUST DATED MAY 22, 1995, AS TO PARCEL 3
-FIRST AMERICAN TITLE INSURANCE COMPANY AND EACH OF THEIR RESPECTIVE SUCCESSORS AND/OR ASSIGNS AS THEIR INTERESTS MAY APPEAR

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDE ITEMS 1, 2, 3, 4, 6(a), 7(c), 8(b)(1), 7(c), 8, 9, 11, 12, 14, 16, 17, 18 AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 16, 2020.

1-24-2021

KEVIN NAVAROLI, P.S. NO. 4001053503 DATE



Location Map

N.T.S.

LEGAL DESCRIPTION - PARCELS I & II (PER TITLE COMMITMENT)

LAND IN THE CITY OF BIRMINGHAM, OAKLAND COUNTY, MI, DESCRIBED AS FOLLOWS:

PARCEL I:
THE EAST 1/2 OF LOT(S) 11 OF BROWN'S ADDITION TO THE CITY OF BIRMINGHAM AND THE EAST 1/2 OF LOT 16 OF BROWN'S ADDITION NO. 1, IN THE CITY OF BIRMINGHAM, OAKLAND COUNTY, MICHIGAN ACCORDING TO THE PLAT THEREOF RECORDED IN LIBER 3 OF PLATS, PAGE 8 OF OAKLAND COUNTY RECORDS, INCLUDING THE VACATED WEST 20 FEET OF ANN STREET ADJOINING LOT 11 AND THE VACATED WEST 19 FEET OF ANN STREET ADJOINING LOT 16.

PARCEL II:
THE WEST 1/2 OF LOT(S) 12 OF BROWN'S ADDITION TO THE VILLAGE (NOW CITY) OF BIRMINGHAM, OF PART OF THE WEST 1/2 OF THE NORTHEAST 1/4 OF SECTION 36, TOWN 2 NORTH, RANGE 10 EAST, TOWNSHIP OF BLOOMFIELD (NOW CITY OF BIRMINGHAM), OAKLAND COUNTY, MICHIGAN ACCORDING TO THE PLAT THEREOF RECORDED IN LIBER 3 OF PLATS, PAGE 8 OF OAKLAND COUNTY RECORDS, ALSO LOT 15, ADDITION TO WILLIAM BROWN'S ADDITION NO. 1, BEING A PART OF THE WEST 1/2 OF THE NORTHEAST 1/4 OF SECTION 36, TOWN 2 NORTH, RANGE 10 EAST ACCORDING TO THE PLAT THEREOF RECORDED IN LIBER 3 OF PLATS, PAGE 8 OF OAKLAND COUNTY RECORDS, INCLUDING VACATED 20 FEET OF ANN STREET, ADJOINING THE WESTERLY SIDE OF LOT 12 AND VACATED 21 FEET OF ANN STREET ADJOINING THE WESTERLY SIDE OF LOT 15.

ADDRESS: 294 E. BROWN STREET, BIRMINGHAM, MI 48009

TAX ID NUMBER: 19-36-204-021

TITLE REPORT NOTES - PARCELS I & II

REFERENCE FIRST AMERICAN TITLE INSURANCE COMPANY FILE NUMBER: 915853, COMMITMENT DATE: DECEMBER 8, 2020.

SCHEDULE B, PART II, EXCEPTIONS:

EXCEPTIONS: 1, 4, 5, 6, 7, 8 AND 16 REFER TO THE OWNERSHIP OF THE PROPERTY AND/OR ARE NOT PLOTTABLE.

2. ANY FACTS, RIGHTS, INTERESTS OR CLAIMS NOT SHOWN BY THE PUBLIC RECORDS BUT THAT COULD BE ASCERTAINED BY MAKING INQUIRY OF PERSONS IN POSSESSION THEREOF OF THE LAND.

3. EASEMENTS, ENCUMBRANCES, OR CLAIMS THEREOF, NOT SHOWN BY THE PUBLIC RECORDS.

9. TERMS AND CONDITIONS CONTAINED IN RESOLUTION AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 8715, PAGE 137. (NO EASEMENTS OR RESTRICTIONS WITHIN SAID DOCUMENT, NOT PLOTTED)

11. EASEMENT FOR UTILITIES OVER THAT PORTION OF LAND INCLUDED IN THE VACATED ANN STREET AS EVIDENCED BY INSTRUMENT RECORDED IN LIBER 4918, PAGE 461 (SAID VACATED ANN STREET & RETAINED EASEMENT ARE PLOTTED HEREON) AND LIBER 21398, PAGE 287 (SIZE AND LOCATION OF DETROIT EDISON EASEMENT IS UNKNOWN, NOT PLOTTED).

12. EASEMENT(S), RESTRICTIONS AND/OR SETBACK LINES, IF ANY, AS DISCLOSED BY THE RECORDED PLAT.

13. INTEREST OF OTHERS IN OIL, GAS AND MINERAL RIGHTS, IF ANY, WHETHER OR NOT RECORDED IN THE PUBLIC RECORDS.

14. INTEREST, IF ANY, OF THE UNITED STATES, STATE OF MICHIGAN, OR ANY POLITICAL SUBDIVISION THEREOF, IN THE OIL, GAS AND MINERALS IN AND UNDER THAT MAY BE PRODUCED FROM THE CAPTIONED LAND.

15. RIGHTS OF TENANTS, IF ANY, UNDER ANY UNRECORDED LEASES.

NOTE: DOCUMENTATION FOR THE VACATION OF THE WEST 15 FEET AND EAST 15 FEET OF ANN STREET LYING WITHIN WILLIAMS BROWN'S ADDITION HAS NOT BEEN PROVIDED TO THE SURVEYOR. CLIENT TO CONFIRM THAT PORTION OF ANN STREET IS VACATED.

LEGEND

MANHOLE(MH)	EXISTING SANITARY SEWER
CO	EXISTING SAN. CLEAN OUT
HYDRANT(HYD)	EXISTING WATER MAIN
MANHOLE(MH) CATCH BASIN(CB)	EXISTING STORM SEWER
CB	EX. BEEHIVE CATCH BASIN
UTILITY POLE	EX. UNDERGROUND (UG) CABLE
POLE	OVERHEAD (OH) LINES
LP	LIGHT POLE
+	SIGN
---	EXISTING GAS MAIN
ASPH.	ASPHALT
CONC.	CONCRETE
FD. / FND.	FOUND
RET. WALL	RETAINING WALL
R.O.W.	RIGHT-OF-WAY
SPK	SET PK NAIL
(TYP)	TYPICAL
(R)	RECORD
(M)	MEASURED
C/L	CENTERLINE
P/L	PROPERTY LINE
GM	GAS METER
EM	ELECTRIC METER
PM	PARKING METER
AC	AIR CONDITIONING UNIT
LS	LANDSCAPE



NOWAK & FRAUS ENGINEERS

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NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL (248) 332-7931
FAX (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

PROJECT

294 E. Brown St. and
300 & 394
S. Old Woodward Ave.
Birmingham, MI 48009

CLIENT

Saroki Architecture
430 N. Old Woodward Ave.
Birmingham, MI 48009

Contact: Victor Saroki
Phone: 248.258.5707

PROJECT LOCATION

Part of the NE 1/4
of Section 36
T.2N., R.10E.,
City of Birmingham,
Oakland County, Michigan

SHEET

ALTA/NSPS Land Title /
Topographic Survey



Know what's below
Call before you dig.

DATE ISSUED/REVISED
00-00-00

DRAWN BY:
M. Carnaghi

DESIGNED BY:

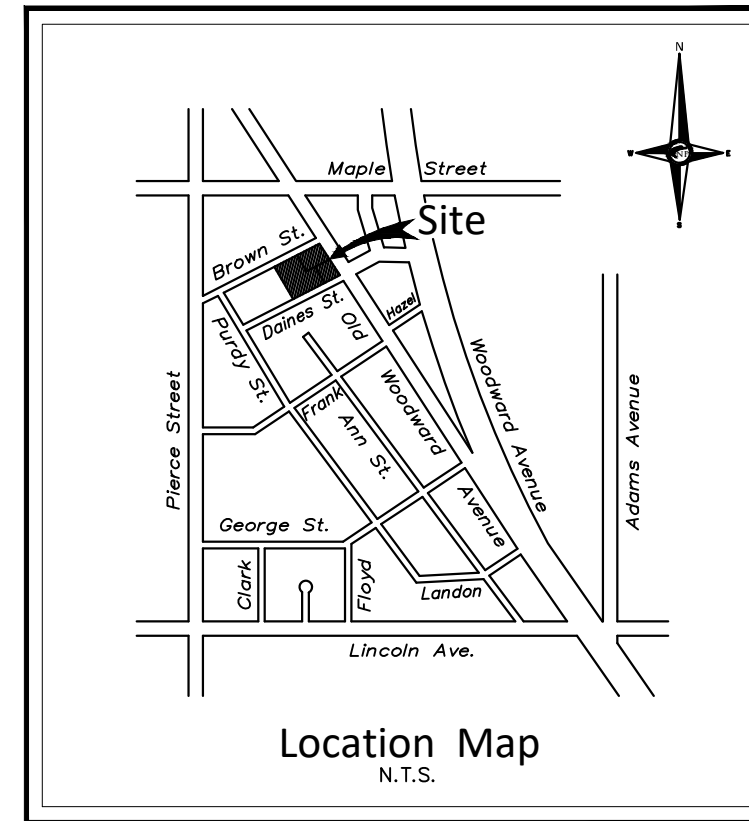
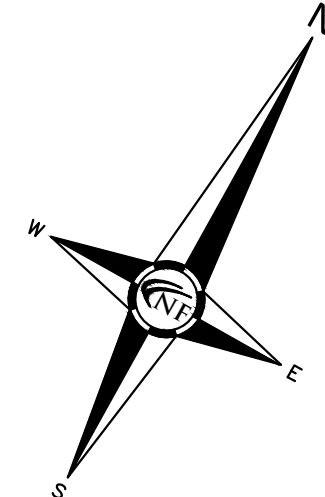
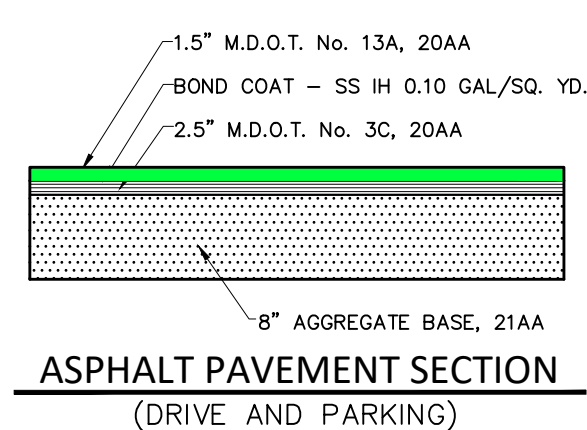
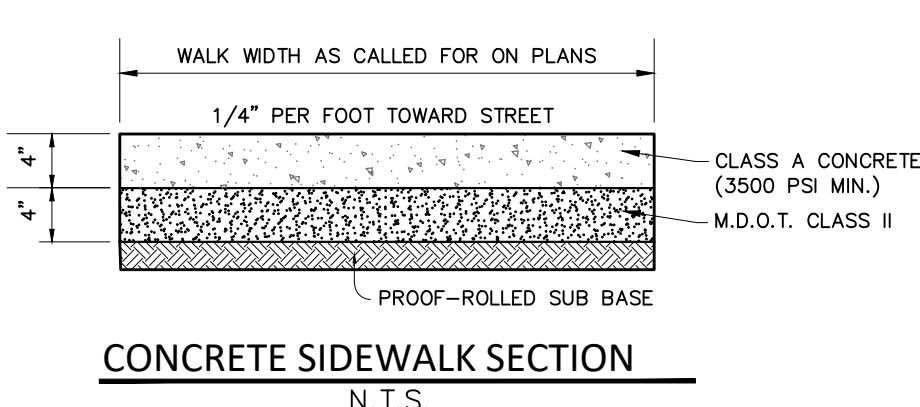
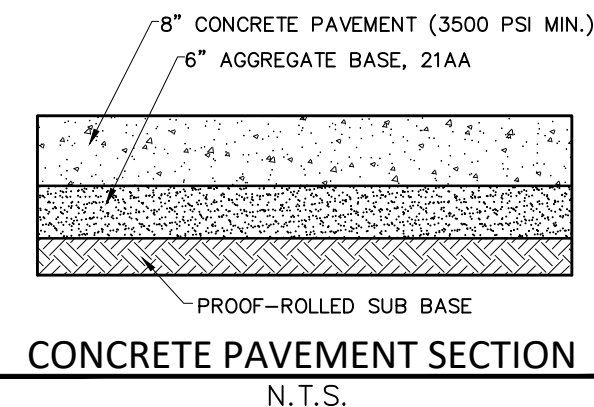
APPROVED BY:
K. Navaroli

DATE:
December 14, 2021

SCALE: 1" = 20'

20 10 0 10 20 30

NFE JOB NO. SHEET NO.
M106 SP-1



NOWAK & FRAUS ENGINEERS

CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
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PONTIAC, MI 48342-5032
TEL. (248) 332-7931
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GENERAL PAVING NOTES

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX BAGS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE - MODOT BITUMINOUS MIXTURE NO. 1100L, 20AA, SURFACE COURSE - MODOT BITUMINOUS MIXTURE NO. 1100T, 20AA; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MODOT SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-516A.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKewise ARRANGE FOR ALL INSPECTION.

EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RAOIL.

SIDEWALK RAMPS, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

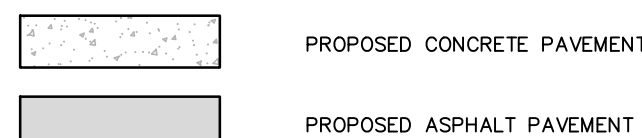
FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.

COVID-19 PANDEMIC CONDITION

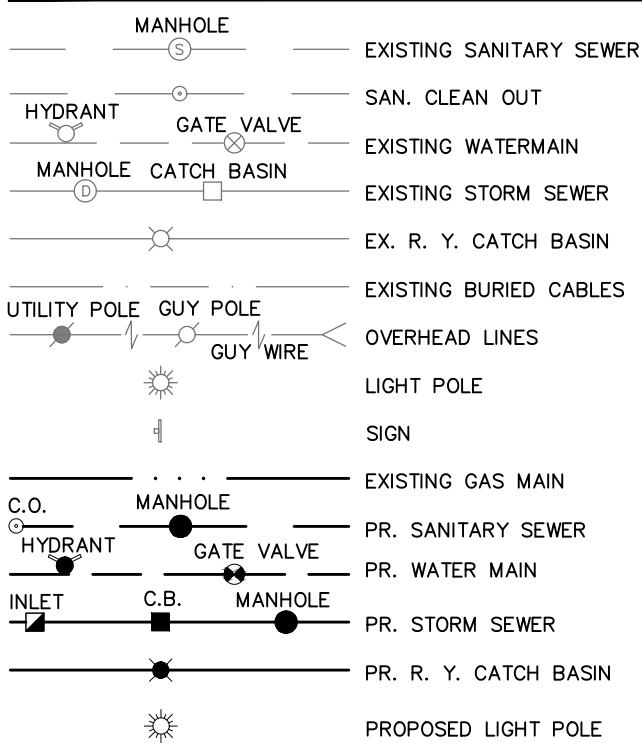
DUE TO THE UNPRECEDENTED COVID-19 PANDEMIC CONDITION AND RESTRICTIONS THE STANDARD DATA WHICH IS OBTAINED FROM MISS DIG / CALL 811 HAS BEEN RESTRICTED TO CRITICAL INFRASTRUCTURE ONLY. NFE WILL MAKE EVERY EFFORT TO OBTAIN CURRENT REFERENCE DATA FROM THE GOVERNING AGENCIES. HOWEVER, THIS DATA MAY BE PARTIAL OR INCOMPLETE. NFE WILL ISSUE THIS SURVEY WITH THE BEST AVAILABLE INFORMATION FROM OUR FIELD SURVEY AND OTHER AVAILABLE REFERENCE DATA. NFE WILL NOT BE RESPONSIBLE FOR INCOMPLETE OR PARTIAL DATA PROVIDED BY THIRD PARTY FACILITY OWNERS. NFE IS NOT RESPONSIBLE FOR BURIED UTILITIES FOR WHICH PLANS WERE NOT FURNISHED OR CANNOT BE OBSERVED IN THE FIELD.

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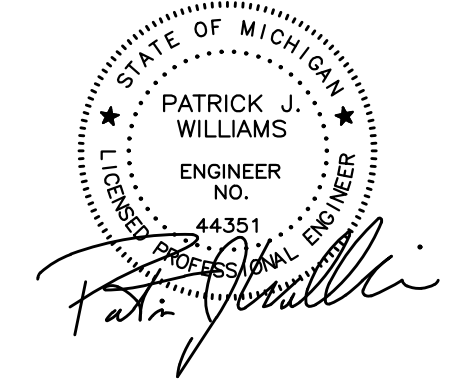
PAVING LEGEND



LEGEND



SEAL



PROJECT

294 E. Brown St. and
300 & 394
S. Old Woodward Ave.
Birmingham, MI 48009

CLIENT

Saroki Architecture
430 N. Old Woodward Ave.
Birmingham, MI 48009

Contact: Victor Saroki
Phone: 248.258.5707

PROJECT LOCATION

Part of the NE 1/4
of Section 36
T.2N., R.10E.,
City of Birmingham,
Oakland County, Michigan

SHEET

Engineering Site Plan



DATE ISSUED/REVISED
00-00-00

DRAWN BY:
A. Eizember

DESIGNED BY:
A. Eizember

APPROVED BY:
P. Williams

DATE
December 14, 2021

SCALE: 1" = 20'

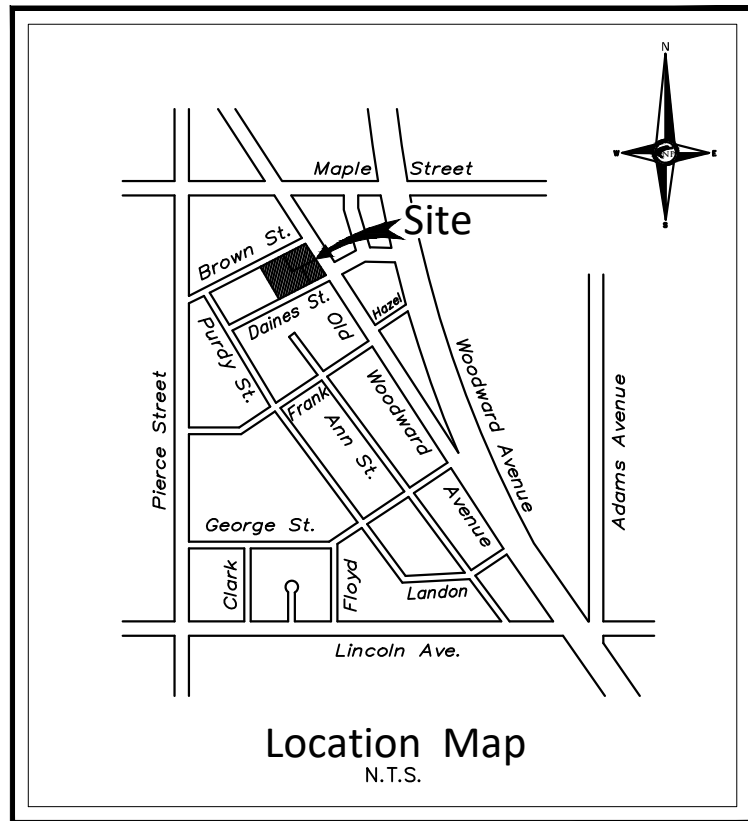
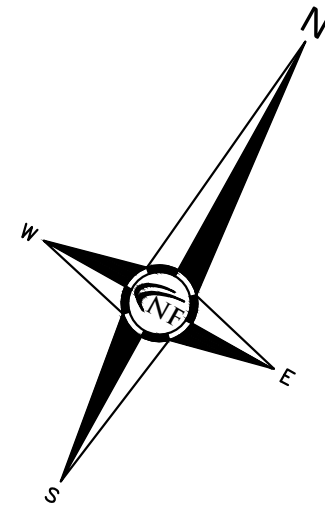
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NFE JOB NO.

M106

SHEET NO.

SP-2

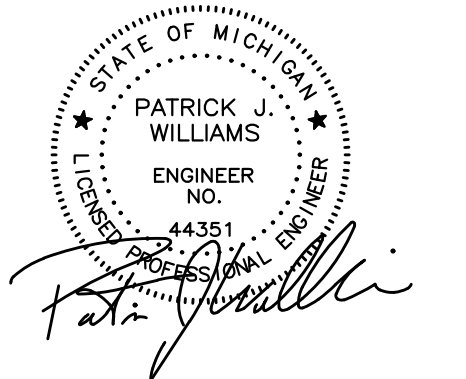


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SEAL



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294 E. Brown St. and
300 & 394
S. Old Woodward Ave.
Birmingham, MI 48009

CLIENT

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430 N. Old Woodward Ave.
Birmingham, MI 48009

Contact: Victor Saroki
Phone: 248.258.5707

PROJECT LOCATION

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of Section 36
T.2N., R.10E.,
City of Birmingham,
Oakland County, Michigan

SHEET

Vehicle Maneuvering Plan



Know what's below
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DATE ISSUED/REVISED
00-00-00

DRAWN BY:
A. Eizember

DESIGNED BY:
A. Eizember

APPROVED BY:
P. Williams

DATE:
December 14, 2021

SCALE: 1" = 20'

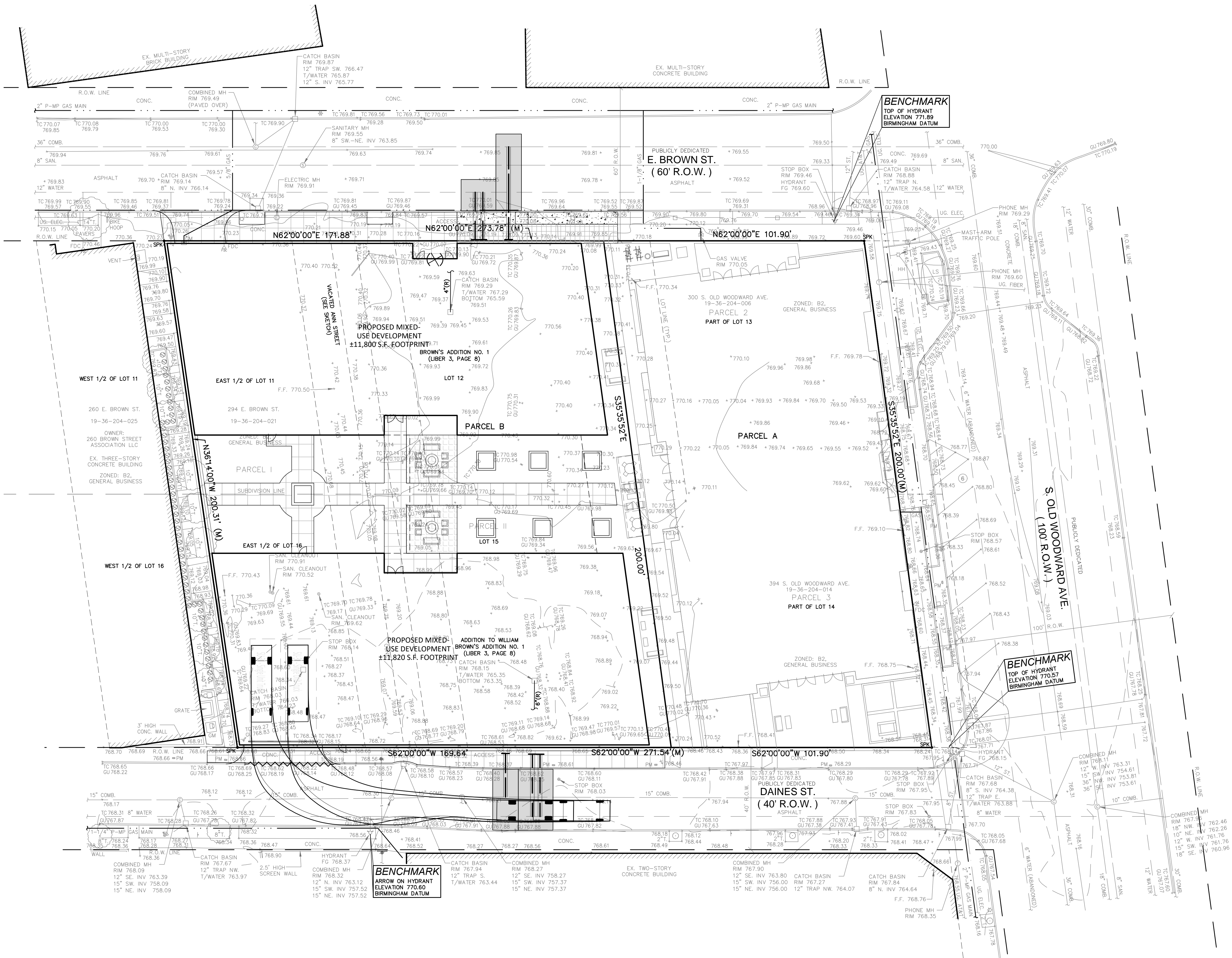
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NFE JOB NO.

M106

SHEET NO.

SP-2a



COVID-19 PANDEMIC CONDITION

DUE TO THE UNPRECEDENTED COVID-19 PANDEMIC CONDITION AND RESTRICTIONS THE STANDARD DATA WHICH IS OBTAINED FROM MISS DIG / CALL 811 HAS BEEN RESTRICTED TO CRITICAL INFRASTRUCTURE ONLY. NFE WILL MAKE EVERY EFFORT TO OBTAIN CURRENT REFERENCE DATA FROM THE GOVERNING AGENCIES. HOWEVER, THIS DATA MAY BE PARTIAL OR INCOMPLETE. NFE WILL ISSUE THIS SURVEY WITH THE BEST AVAILABLE INFORMATION FROM OUR FIELD SURVEY AND OTHER AVAILABLE REFERENCE DATA. NFE WILL NOT BE RESPONSIBLE FOR INCOMPLETE OR PARTIAL DATA PROVIDED BY THIRD PARTY FACILITY OWNERS. NFE IS NOT RESPONSIBLE FOR BURIED UTILITIES FOR WHICH PLANS WERE NOT FURNISHED OR CANNOT BE OBSERVED IN THE FIELD.

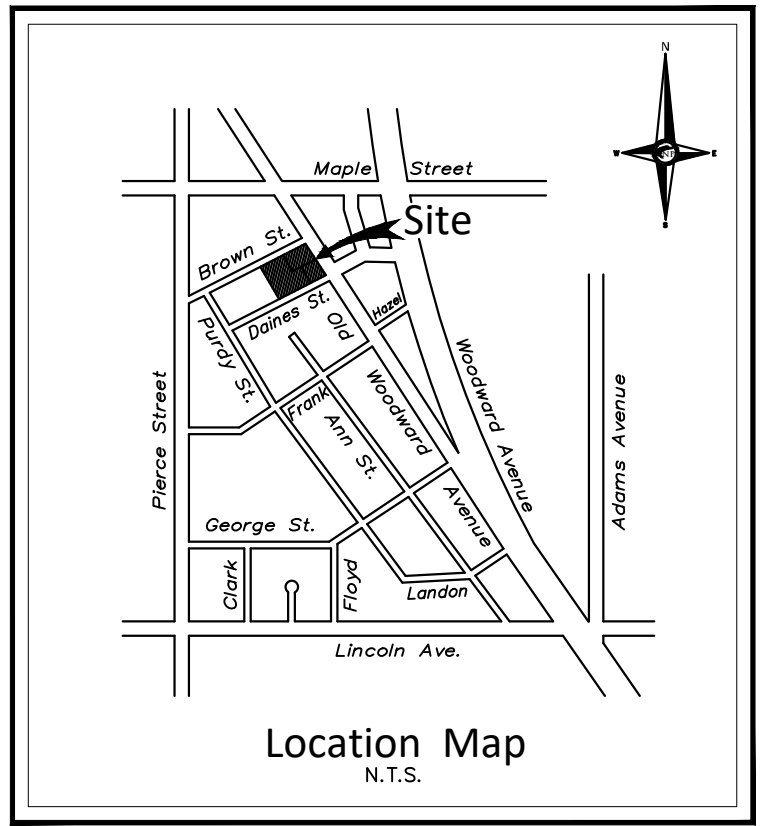
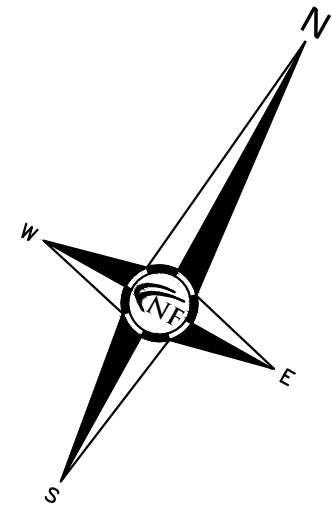
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PAVING LEGEND

	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

LEGEND

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		SAN. CLEAN OUT
	MANHOLE CATCH BASIN		EXISTING WATERMAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY POLE		EX. R. Y. CATCH BASIN
	GUY WIRE		EXISTING BURIED CABLES
	LIGHT POLE		OVERHEAD LINES
	SIGN		EXISTING GAS MAIN
	C.O.		PR. SANITARY SEWER
	HYDRANT		PR. WATER MAIN
	INLET		PR. STORM SEWER
	MANHOLE		PR. R. Y. CATCH BASIN
	GATE VALVE		PROPOSED LIGHT POLE

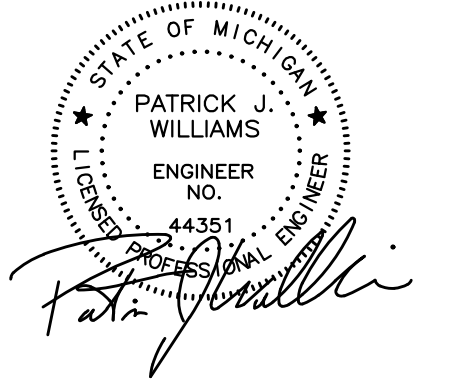


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FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL



PROJECT

294 E. Brown St. and
300 & 394
S. Old Woodward Ave.
Birmingham, MI 48009

CLIENT

Saroki Architecture
430 N. Old Woodward Ave.
Birmingham, MI 48009

Contact: Victor Saroki
Phone: 248.258.5707

PROJECT LOCATION

Part of the NE 1/4
of Section 36
T.2N., R.10E.,
City of Birmingham,
Oakland County, Michigan

SHEET

Vehicle Maneuvering Plan



DATE ISSUED/REVISED
00-00-00

DRAWN BY:
A. Eizember

DESIGNED BY:
A. Eizember

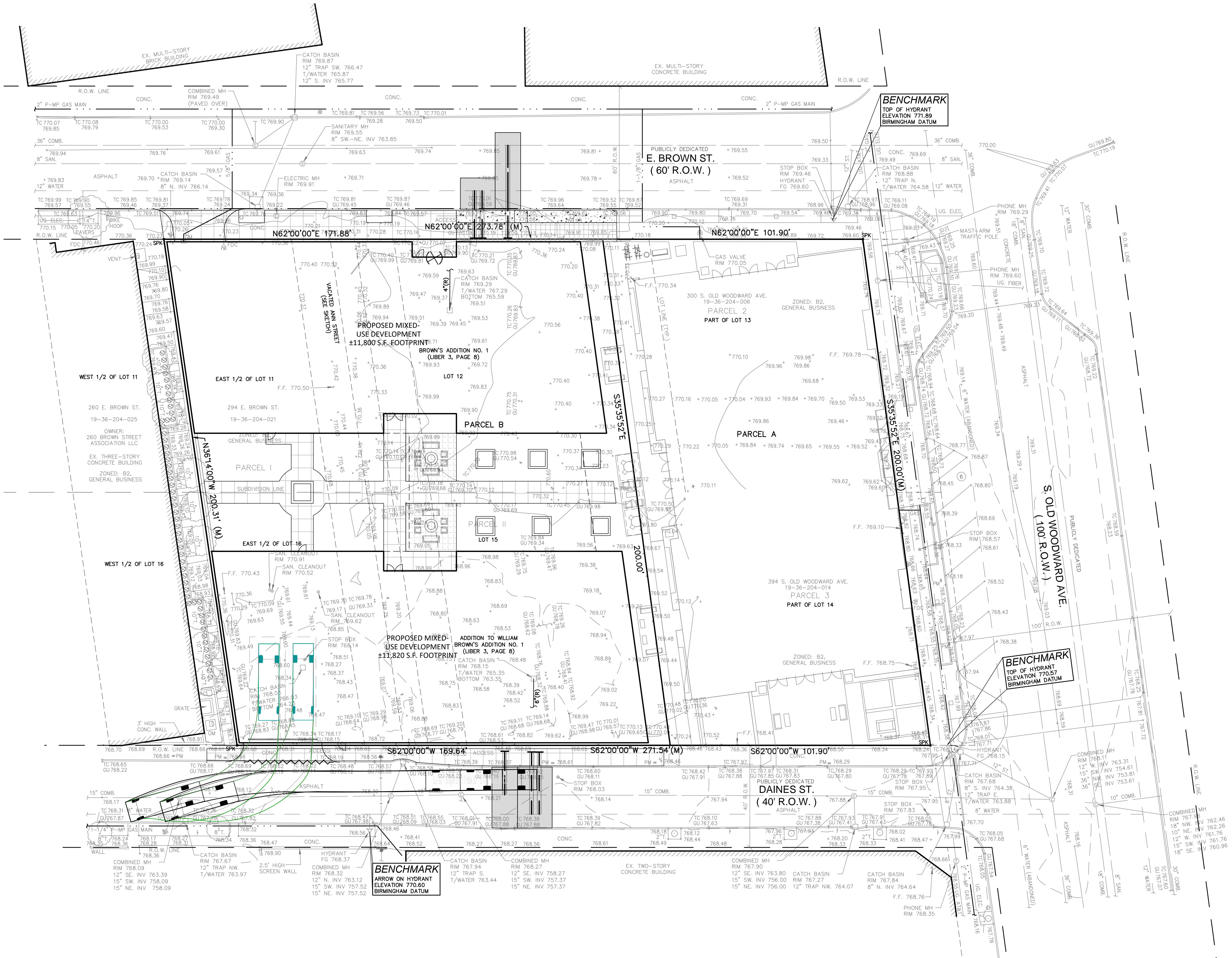
APPROVED BY:
P. Williams

DATE:
December 14, 2021

SCALE: 1" = 20'

NFE JOB NO. SHEET NO.

M106 SP-2a



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PAVING LEGEND

	PROPOSED CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT

LEGEND

	MANHOLE		EXISTING SANITARY SEWER
	HYDRANT		SAN. CLEAN OUT
	MANHOLE CATCH BASIN		EXISTING WATERMAIN
	UTILITY POLE		EXISTING STORM SEWER
	GUY POLE		EX. R. Y. CATCH BASIN
	GUY WIRE		EXISTING BURIED CABLES
	LIGHT POLE		OVERHEAD LINES
	SIGN		EXISTING GAS MAIN
	C.O.		PR. SANITARY SEWER
	HYDRANT		PR. WATER MAIN
	INLET		PR. STORM SEWER
	MANHOLE		PR. R. Y. CATCH BASIN
	GATE VALVE		PROPOSED LIGHT POLE



A
B
C
D
E
F
G
H

A PRELIMINARY LANDSCAPE PLAN
L1.1 Plan-Ground Level
Scale: 1/8"=1'-0"
NORTH

LANDSCAPE
ARCHITECTURE

MICHAEL J. DUL
& ASSOCIATES, INC.

212 DAINES STREET
BIRMINGHAM
MICHIGAN 48009

P 248 644 3410
F 248 644 0819

Michael J. Dul
MICHAEL J. DUL
LANDSCAPE ARCHITECT
NO. 781
DESIGN TREE LANDSCAPE ARCHITECT

SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI
48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

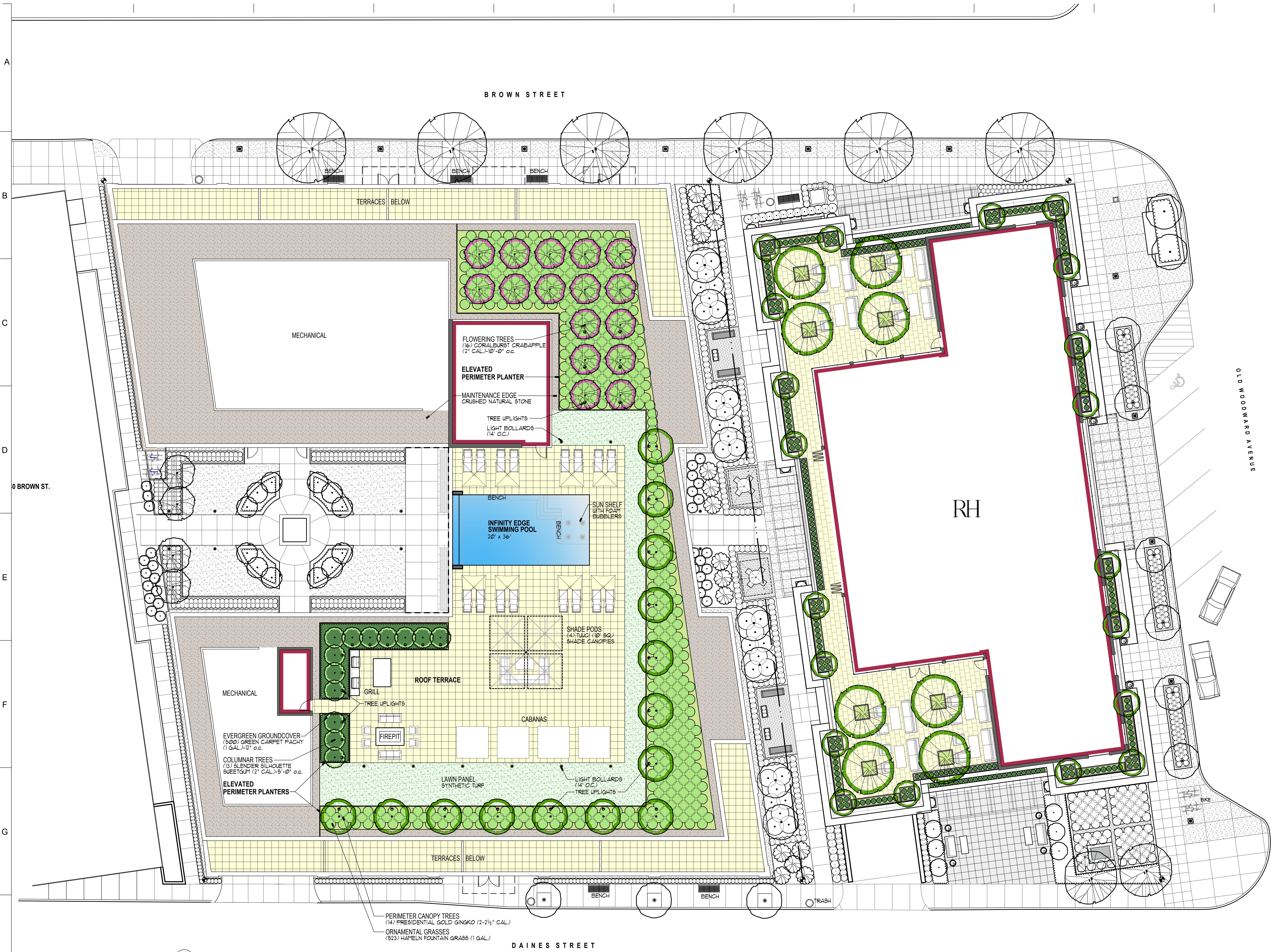
Project:
Brown Street Mixed-Use
Brown Street
Birmingham, MI 48009

Date: 12-01-2021 Preliminary Site Plan App.
01-27-2022 Preliminary Site Plan App.

Issued For:

Sheet No.:
L1.1
Preliminary
Landscape Plan
GROUND LEVEL

1 2 3 4 5 6 7 8 9 10



A
B
C
D
E
F
G
H

BROWN STREET

BROWN ST.

DAINES STREET

OLD WOODWARD AVENUE

A PRELIMINARY LANDSCAPE PLAN
1.2.1 Plan-Rooftop
Scale: 1/8"=1'-0"
NORTH

1 2 3 4 5 6 7 8 9 10

LANDSCAPE
ARCHITECTURE

MICHAEL J. DUL
& ASSOCIATES, INC.

212 DAINES STREET
BIRMINGHAM
MICHIGAN 48009

P 248 644 3410
F 248 644 0819

Michael J. Dul
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DESIGN TREE LANDSCAPE ARCHITECT

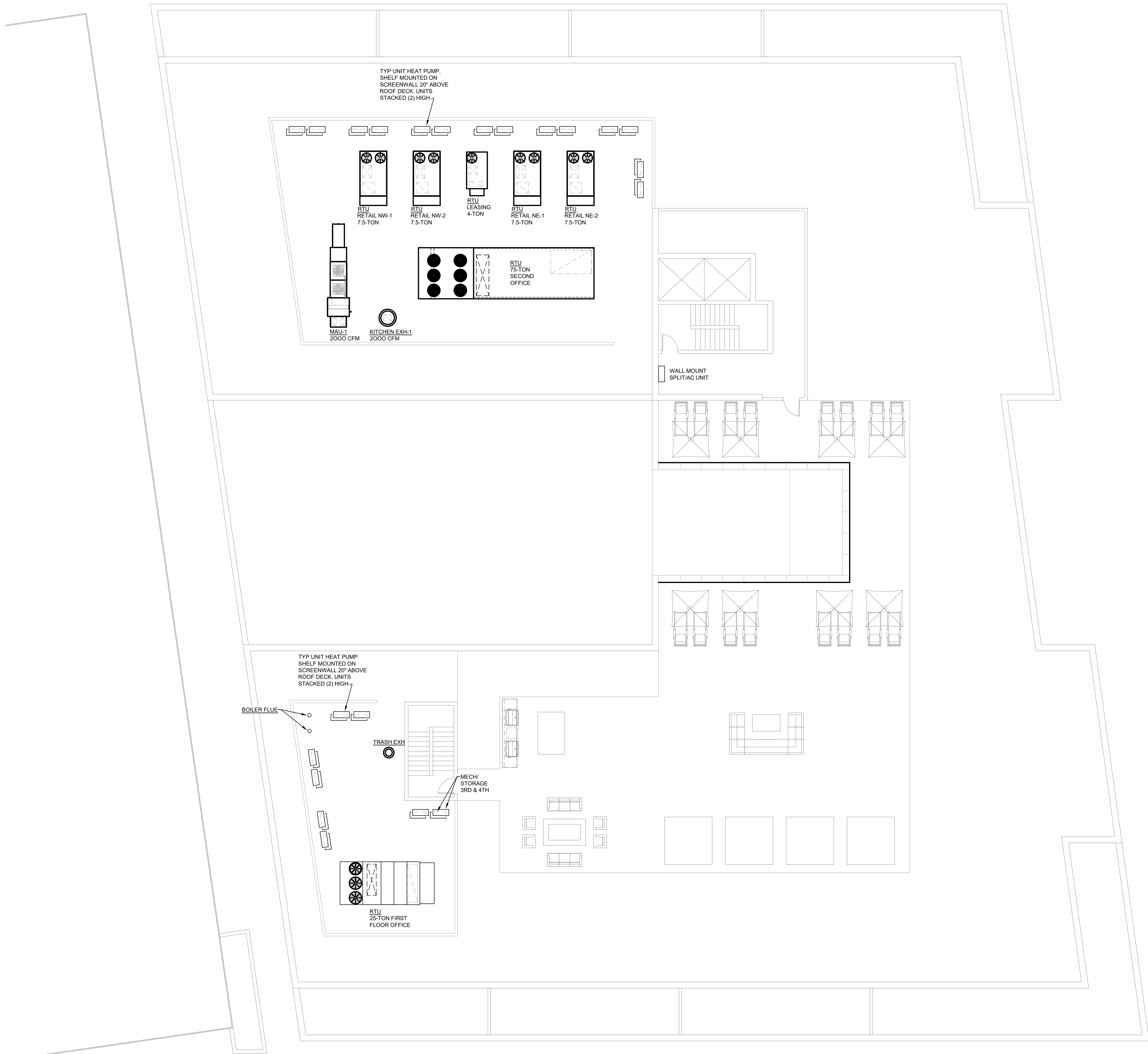
SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI
48009

P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
Brown Street / Mixed-Use
Brown Street
Birmingham, MI 48009

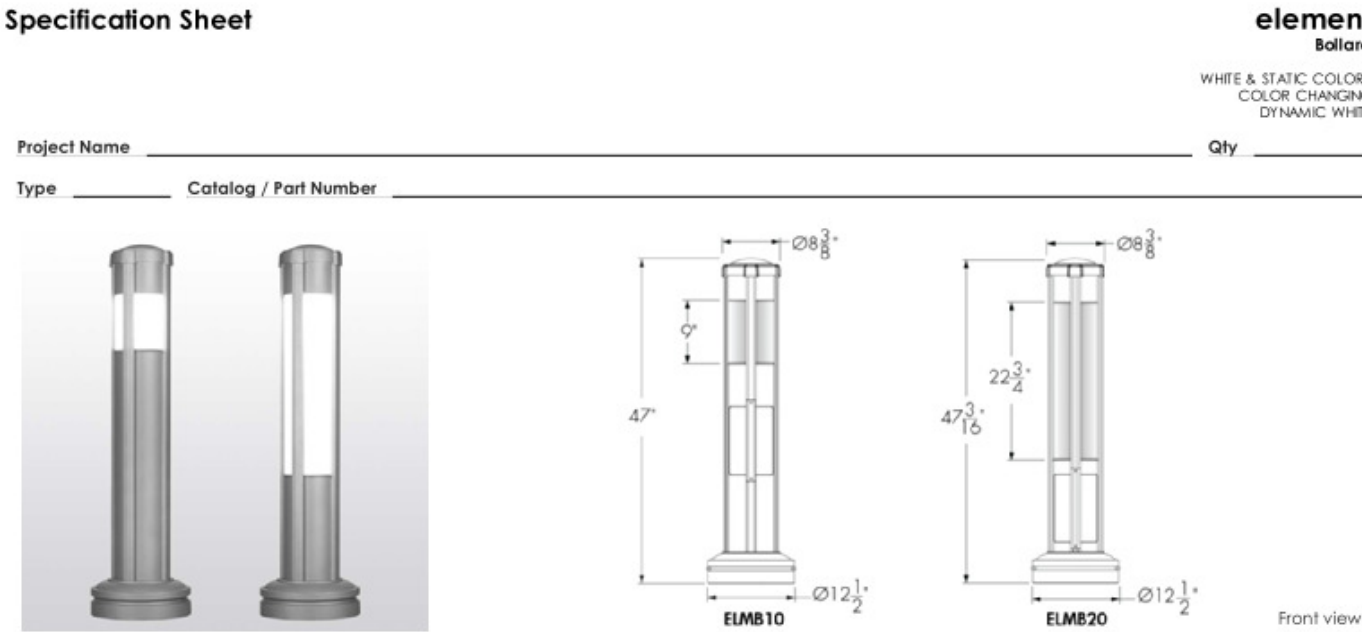
Date: 12-01-2021
Issued For: Preliminary Site Plan App.
01-27-2022 Preliminary Site Plan App.

Sheet No.:
L2.1
Preliminary
Landscape Plan
ROOFTOP



ROOF - MECHANICAL PLAN
SCALE: 1/8"=1'-0"

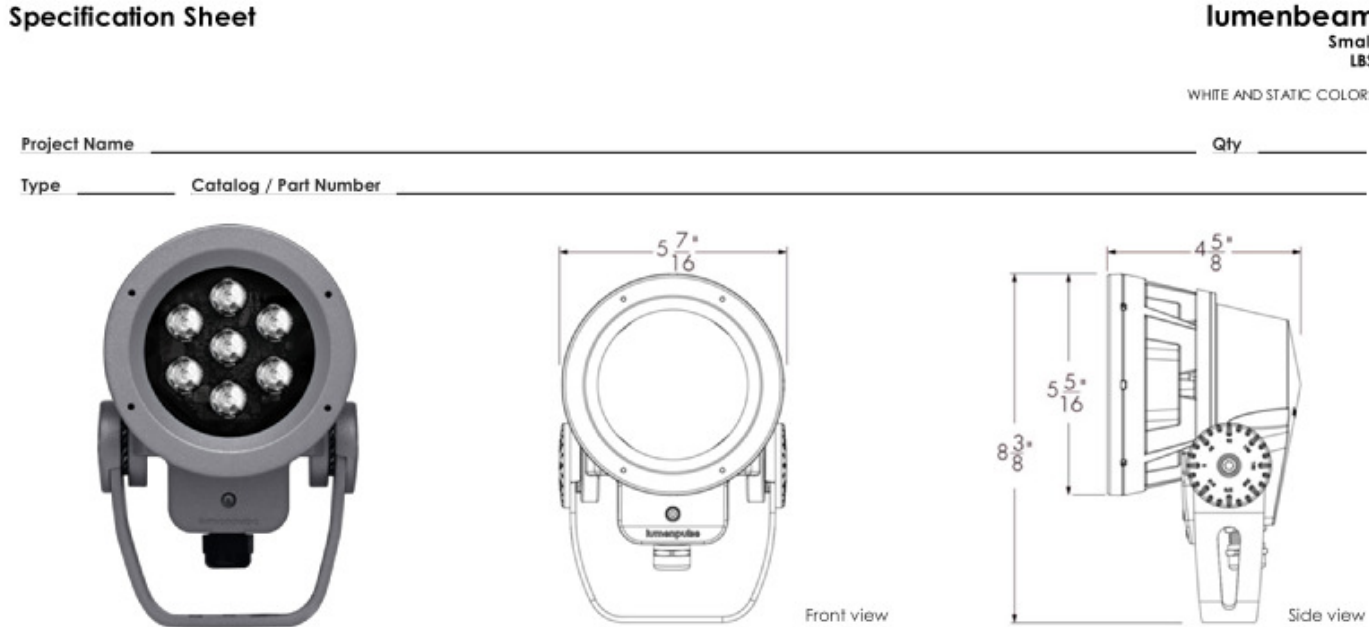
Specification Sheet



lumenpulse 1220 Marie-Victoria Blvd., Longueville, QC J4G 2H9 CA T United States 417.307.5700 | Canada 1.877.937.3003 | 514.937.3003 F 514.937.4289
info@lumenpulse.com www.lumenpulse.com www.lumenpulse.com/products/2195

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Specification Sheet



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info@lumenpulse.com www.lumenpulse.com www.lumenpulse.com/products/228

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DN - 827

Statistics						
Description	Symbol	Avg	Max	Min	Avg/Min	Max/Min
Rooftop	+	0.4 fc	1.7 fc	0.0 fc	N/A	N/A

General Note

- SEE DRAWING FOR LUMINAIRE MOUNTING HEIGHT.
- CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"
- LIGHTING ALTERNATES REQUIRE NEW PHOTOMETRIC CALCULATION AND RESUBMISSION TO CITY FOR APPROVAL.

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIRMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

Schedule									
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Lumens Per Lamp	Light Loss Factor	Wattage
B	B	8	Lumenpulse	ELMB20-RO-120/277-40K-CRI80-S120-O-NO	Element ELMB20	LED	1183	0.9	21.21
F	F	32	Lumenpulse	LBS-120-40K-FL-XX-XX	Lumenbeam Small	LED	1053	0.9	15

BROWN STREET MIXED-USE ROOFTOP
PHOTOMETRIC PLAN
PREPARED FOR: SAROKI ARCHITECTURE
GASSER BUSH ARCHITECTS
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Date
02/03/2022
Scale
Not to Scale
Drawing No.
#22-70789 V1
1 of 1

New CIS Documents

- F&V and MKSK Review Letters
 - ROWE Response Letters
- EGLE Acknowledgment of Baseline ESA



March 18, 2022

Mr. Nicholas Dupuis
Planning Director
City of Birmingham
151 Martin Street, PO Box 3001
Birmingham, MI 48012

RE: Brown Street Mixed Use Development
294 E. Brown Street
Transportation Impact Study

Dear Mr. Dupuis:

ROWE has considered the review of the revised Traffic Impact Study for the above noted site, as outlined in a letter from Fleis & Vandenbrink dated March 17, 2022. The following responses are provided for your consideration:

Items 1 and 3 in the review letter asks that the Traffic Impact Study for this development map out the person trips that will be generated from this development on to the adjacent road network. There is no industry standard recognized methodology to calculate the various decisions that persons, be they pedestrians, bicyclists, or transit users, will make as they make their way to or from the site. The figures in the report did not map out this information, as there is no statistically sound means to do so.

That said, we agree with F&V's assertion that "vehicle trips to the parking garage will become pedestrian trips to/from the site." The table below, taken from data contained in the full report, summarizes the number of trips to be generated by the development, after internal capture reductions and enumerates the potential new person trips that will want to park at a public parking space:

Person-Trip Generation (After Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	221	38 DU	10	28	38	22	13	35	22	13	35	364	364
General Office Building	710	34,568 SF	61	9	70	12	62	74	9	10	19	530	87
Furniture Store	890	3,220 SF	2	2	4	1	1	2	2	1	3	89	57
Fine Dining Restaurant (Bistro)	931	3,606 SF	2	2	4	25	12	37	30	20	50	539	579
Total New Person Trips			75	41	116	60	88	148	63	44	107	1,522	1,087
Person Trips by Non-Vehicle Modes			3	0	3	2	2	4	3	1	4	46	31
Potential New Person Trips to and from Parking Structure (excluding residential)			62	13	75	36	73	109	38	30	68	1,112	692

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Deducting 100 percent of residential trips (assuming that almost all of those trips will be directed to the private on-site parking facility), as well as other trips arriving to the site by other modes (walking, biking, and transit), the majority of trips in the last row of the above table will be walking to and from the public parking facilities. Considering the small number of metered public parking spaces available in close proximity to the site, and given the current availability of parking in the Pierce Street structure, it is acknowledged that a strong majority of the new person trips listed will choose to use the existing mid-block crossing connecting the site to the Pierce Street parking structure.

Item #2 in the F&V review letter states that the study should provide recommendations for pedestrian mitigation to improve the safety of the existing pedestrian crossings. Mitigation measures could include signs, a raised crosswalk, RRFB, flashing beacons, median refuge, or additional measures.

As identified in our report, the city has created an excellent streetscape environment in the immediate area of the development. The S. Old Woodward Avenue reconstruction project planned for the segment south of E. Brown Street will be completed during the 2022 construction season, well before the completion of this building, improving pedestrian facilities within the study area further.

Also identified in the report were a total of three pedestrian crashes in the study area, going back to 2016. All three crashes occurred at the S. Old Woodward Avenue and E. Brown Street intersection, prior to its current improved configuration. Given the further improvements planned at the S. Old Woodward Avenue and Daines Street intersection, the only remaining area where improvements are suggested is at the mid-block pedestrian crossing on E. Brown Street, at the Pierce Street parking structure. The current mid-block crossing dates to the early 2000s and is not ADA compliant. With that in mind, it is recommended that the existing handicap ramps on both sides of E. Brown Street be removed and replaced at the mid-block crossing. The developer has agreed to complete this improvement within the scope of their project.

To consider mitigation measures over and above the replacement of the handicap ramps, reference is made to MDOT's 2020 publication entitled "Guidance for Installation of Pedestrian Crosswalks on Michigan State Trunkline Highways" (attached). The guide was prepared as mitigation measures at pedestrian crosswalks are becoming more popular statewide. Similar to STOP signs, which can become a safety hazard if used where they are not warranted, the guide provides engineers for any public street a logical means to determine if enhanced pedestrian crosswalk features are warranted at a particular site. The guide considers such things as the posted speed limit, pedestrian demand, and pedestrian crash history. While it is acknowledged that E. Brown Street is not a state trunkline highway, the same concerns about providing crosswalk features where they are not warranted should be considered when planning crosswalk improvements on any public street.

Referring to the Pedestrian Crossing Treatment Flow Chart for an Uncontrolled Crossing on page 16 of the report, the decisions that apply for this crossing (as highlighted) lead one to the direction of referring to Table 1. Table 1 appears on the next page. E. Brown Street in this location is transitioning from a two-lane to a three-lane road, although not a traditional three-lane road where a left turn lane is located in the middle. With that in mind, we reviewed the guidance provided for both two-lane and three-lane roads and used the section for a roadway with a vehicle per day number between 9,000 and 12,000 (Brown St. has been measured most recently by SEMCOG

Mr. Nicholas Dupuis
March 18, 2022
Page 3

at just less than 9,000 vpd). For both of these lines, the table suggests the use of Crossing Type A.

Crossing Type A crosswalks are featured on page 7 of the MDOT report. Recommendations include special emphasis crosswalk materials (which already exist), as well as either standard pedestrian warning signs, or Gateway Treatment signs, which are also detailed on page 7. The developer has agreed to install either type of sign feature with the improved handicap ramps, per the city's preference.

With the above in mind, it is recommended that the E. Brown Street crosswalk at the Pierce Street structure be improved with the following mitigating improvements:

- Removal and replacement of the existing handicap ramps so that they are ADA compliant.
- Installation of pedestrian crosswalk signage on both sides of the street, as directed by the city.

While further enhancements such as the installation of RRFBs do not appear warranted at this time, should the city feel that they should be installed, the developer will agree to this improvement as well.

If you have any questions, feel free to contact me at (248) 318-1492.

Sincerely,
ROWE Professional Services Company

Paul T. O'Meara, P.E.
Project Manager

Attachment

Guidance for Installation of Pedestrian Crosswalks on Michigan State Trunkline Highways



Toward Zero Deaths™
National Strategy on Highway Safety

March 17, 2020

Background

The Michigan Department of Transportation's (MDOT) overall mission includes the provision of safe and efficient transportation facilities for all road users.

MDOT Mission –
Providing the highest
quality transportation
services for economic
benefit and improved
quality of Life.



Figure 1 - MDOT Strategic Area of Focus

Determining when and where to provide appropriate pedestrian treatments such as marked crosswalks and pedestrian signing on state trunkline is often complicated. According to guidance developed by the FHWA, pedestrian crossings at both midblock and intersection locations “should provide safe and comfortable locations to cross the street”¹. However, the *Michigan Manual on Uniform Traffic Control Devices* (MMUTCD) states that “crosswalk lines should not be used indiscriminately” and further that an engineering study should be conducted prior installing a crosswalk at an uncontrolled approach. In situations where a signalized or stop-controlled crossing is not warranted but potential crossing demand may exist, enhanced crossing treatments or actuated crossings should be considered². An important concept specific to pedestrian crossing design is that pedestrians will often cross where necessary to conveniently access their destination, particularly in cases where the spacing of crossings is high or the desire line is directly across the street³. The decision to install marked crosswalks, including enhanced crossing treatments (such as additional signing, pedestrian hybrid beacons or rectangular-rapid flashing beacons), represents a complex decision making process which should incorporate a broad range of engineering factors. Elements that can affect decisions on whether to install crossing treatments and what type include:

- Posted speed limit
- Volumes of vehicular and pedestrian/bicycle traffic
- Number of travel lanes and geometry of the roadway at the crossing location (including medians, refuge islands, etc.)
- Pedestrian characteristics (proportion of crosswalk used by elderly, children or those with disabilities)
- Type of roadway
- Setting (urban, suburban or rural)
- Community needs – Non-Motorized Plans
- Area land use – trip generators, schools, community centers, senior centers, etc.
- Available right of way

¹ [Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts – FHWA \(2016\)](#)

² [Urban Street Design Guide – NACTO \(2018\)](#)

³ [Designing Walkable Urban Thoroughfares: A Context Sensitive Approach – ITE \(2010\)](#)

- Type of connecting pathways
- Transit use
- Connectivity

All of the elements listed above can influence the decision to install a crosswalk at a given location and if additional treatments should be considered for the crosswalk. Crosswalks should be applied uniformly to locations where crossing demand is high, a safe crossing can be achieved, and driver expectations can be met. Not providing a uniform approach to pedestrian crossing treatments on state trunkline can create confusion for both motorists and pedestrians, potentially increasing risk to pedestrians. The context sensitive solutions (CSS) process can be used to help achieve proper crosswalk decisions. CSS emphasizes that transportation facilities should fit their physical settings within communities to maintain safety and mobility for all users of the transportation network.

“With a thorough understanding of the CSS (context sensitive solutions) principles and design process, the practitioner planning or designing a thoroughfare seeks to integrate community objectives, accommodate all users and make decisions based on an understanding of the trade-offs that frequently accompany multiple or conflicting needs.” *ITE Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*

Context-sensitive solutions (CSS) is a theoretical and practical approach to transportation decision-making and design that takes into consideration the communities and lands through which streets, roads, and highways pass

The objective of this guidance document is to establish a step-by-step procedure to identify the appropriate location for a crosswalk and selection of appropriate crossing treatments on state trunkline. This guidance is expected to provide crosswalk treatment recommendations that meet both motorist and pedestrian expectations by providing consistency on state trunkline routes. Recent pedestrian research studies, existing crosswalk guidelines used by other governmental agencies, manuals on traffic control devices, and state statute were reviewed in order to establish this document.



R1-6

As the crosswalk treatment is evaluated and selected using the process discussed in this guidance document, each local MDOT office and local agency must be aware of local regulations and ordinances. Michigan currently does not have a state law that requires motorists to yield (or stop) to pedestrians in an unsignalized crosswalk. Each local municipality must either adopt the Uniform Traffic Code or write their own ordinance language that clearly identifies the right-of-way and expected actions for both driver and pedestrian. An example of such language from the Michigan Uniform Traffic Code is provided as follows:

“R 28.1702 Rule 702. Pedestrians; right-of-way in crosswalk; violation as civil infraction. (1) When traffic-control signals are not in place or are not in operation, the driver of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is on the half of the roadway on which the

vehicle is traveling or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger, but a pedestrian shall not suddenly leave a curb or other place of safety and walk or run into a path of a vehicle that is so close that it is impossible for the driver to yield. (2) A person who violates this rule is responsible for a civil infraction.” *MI Uniform Traffic Code (can be adopted by a local unit of government)*

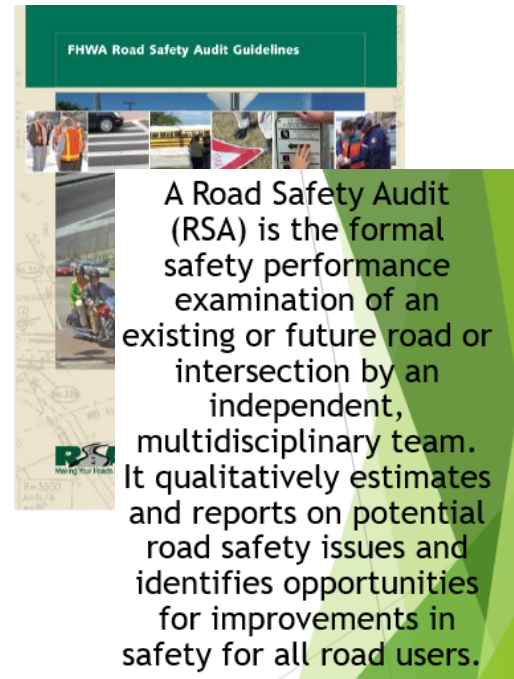
Crosswalk Evaluation Procedures

The evaluation of a proposed crosswalk location for potential crossing treatments on state trunkline routes should include the following four basic steps:

- 1) Identification and Description of the Crossing Location
- 2) Roadway Data Collection
- 3) Traffic Volume/Crash Data Collection and Operational Observations
- 4) Application of Data to Determine Appropriate Treatments

Step 1: Identification and Description of the Proposed Crossing Location (or evaluation of an existing crosswalk)

- a) Identify the major street and the specific location of the crossing
- b) Review the local Non-Motorized plan for alignment with community needs and obtain feedback from the community
- c) Determine if another project is planned for the future that might coordinate with any crossing treatments (if found appropriate)
- d) Determine if the crossing location connects both ends of a proposed or existing sidewalk or shared-use path or other pedestrian generating features
- e) Note the posted speed limit along the major street at the crossing location.
- f) Identify the existing traffic control, if any, and any existing crossing treatments (signs, markings or physical treatments), street lighting and curb ramps.
- g) Consider conducting a Road Safety Audit for the corridor or location being considered for a crossing if there are safety concerns.



Step 2: Roadway Data Collection

- a) Determine the existing roadway configuration including the number of lanes, existence of on-street parking and the presence of raised medians or refuge islands (including width) at the crossing location.

- b) Note any marked or signed restrictions.
- c) Identify the nearest marked or protected crossing and measure the distance to this proposed crossing.
 - Note type of traffic control at adjacent crossings (i.e. signal, stop sign or yield sign)
 - Identify any vehicle queue lengths at intersections
- d) Measure the distance to the nearest transit stop (if any)
- e) Measure the stopping sight distance (SSD) on all vehicular approaches to the proposed crossing. Review the MDOT Road Design Manual and Sight Distance Guidelines⁴ and if SSD is insufficient, determine if improvements (such as removal of obstructions) are feasible means to mitigate the inadequate SSD. Consider geometric roadway changes or other installations such as traffic calming treatments that would encourage lower driving speeds.

Step 3: Traffic/Crash Data Collection and Operational Observations

- a) Collect pedestrian crossing volumes during the peak hours of use. This will typically involve collection of data during the AM, midday, and PM peaks hours. Locations near schools may only require two hours of data collection, corresponding to school opening and closing times. Pedestrian volumes should include and differentiate between pedestrians and bicyclists, the number of young, elderly and/or pedestrians with disabilities. For locations where school crossing traffic is anticipated, the volume of student pedestrians (school age pedestrians on their way to/from school) should also be noted separately.
 - Whenever possible, pedestrian and bicycle volumes should be collected during warm weather months and during fair weather conditions to represent peak crossing activity.
 - Be aware of when school is in session (including typical break periods such as winter break, spring break, summer, etc.)
 - Consider gathering data before, during and after special events or near venues that generate large pedestrian volumes.
 - Consider other factors when collecting that may vary throughout the day such as transit usage/volumes, shift changes, school hours, etc.
- b) Collect hourly and average daily traffic (ADT) volumes for vehicle traffic along the roadway at the crossing location, including truck volumes and turning movements simultaneously with pedestrian data.
- c) Collect gap data for pedestrian crossings. This involves measuring the time between successive vehicles entering the crossing area and noting whether 1.) a pedestrian

What is Toward Zero Deaths (TZD)?

One person dies every 16 minutes in a traffic crash in the United States. Over the course of a lifetime, nearly every U.S. resident is touched by consequences of traffic crashes. Toward Zero Deaths is the United States' highway safety vision. It is the only acceptable target for our nation, our families and us as individuals

⁴[Sight Distance Guidelines](#)

- was waiting to cross and 2.) whether the pedestrian accepted or rejected the gap. Refer to MDOT's Electronic Traffic Control Device Guidelines for additional information on collecting gap data.⁵
- d) Review the last five years of crash data and determine if there are patterns related to pedestrian crossing activity. If the location is determined to have a specific safety issue with pedestrian access and mobility, consider alternative methods of collecting pedestrian volumes as justification for installing traffic control devices (particularly electronic devices). Safety and moving Toward Zero Deaths (TZD) is a top priority on MDOT facilities.
- Surrogate measures of pedestrian volumes to meet the minimum threshold volumes are discussed in the Surrogate Measures section of this document.

Step 4: Application of Data to Determine Appropriate Treatments

- a) Using the available data (or from the Surrogate Measures section), utilize
- Figure 6 – Pedestrian Crossing Treatment Flowchart at Controlled Crossings,
 - Figure 7 – Pedestrian Crossing Treatment Flowchart at Uncontrolled Crossings and
 - Table 1 - Criteria for Crossing Treatments at Uncontrolled Locations (if applicable) to determine appropriate treatment(s) for signalized, stop-controlled or uncontrolled locations.

Consider and incorporate the following additional evaluation considerations as appropriate in Figure 8a and 8b – Installation of Pedestrian Hybrid Beacon, Pedestrian Signals or Rectangular Rapid Flashing Beacon Signs. If an electronic device is being considered, submit Form 1597 to MDOT Signal Operations to request a study for any electronic pedestrian device.

Types of Crossing Treatments at Uncontrolled Locations

Four primary types of uncontrolled crossing treatments are discussed below. These treatments consider the physical roadway conditions, vehicle volumes and pedestrian volume at the potential crossing location. Table 1 also shows this information. All crossing types shall include ADA compliant sidewalk ramps and shall be MMUTCD (Manual on Uniform Traffic Control Devices) compliant. An uncontrolled location includes mid-block and unsignalized intersections where mainline of the state trunkline does not stop. This section may not capture all best practices and other applicable treatment alternatives that become available. Also, for more information on different treatments refer to MDOT's Best Design Practices for Walking and Bicycling in Michigan.⁶

⁵ [Electronic Traffic Control Device Guidelines](#)

⁶ [MDOT's Best Design Practices for Walking and Bicycling in Michigan](#)

Crossing Type A:

- Marked special emphasis crosswalk (See MDOT PAVE 945 series)
- Standard pedestrian warning signs (W11-2) (See MDOT Traffic Sign Design, Placement and Application Guide). Evaluate need for advanced signing.
- Gateway Treatment – R1-6 In-Street signs (see MDOT's User Guide for R1-6 Gateway Treatment for Pedestrian Crossings⁷). See Sidebar.
- If the location is a designated school crossing, then standard school crossing signs (S1-1) should be used

Crossing Type B:

- Marked special emphasis crosswalk (See MDOT PAVE 945 series)
- Standard pedestrian warning signs (MDOT Traffic Sign Design, Placement and Application Guide). Evaluate need for advanced warning signs/electronic additions (flashers).
- Geometric improvements (such as bulb outs or median refuge islands) or consider pedestrian activated Rectangular Rapid Flashing Beacons (RRFB) if criteria are met in Figure 8a or 8b. Please see page 19 for more discussion on RRFBs and submit form 1597 to MDOT Signal Operations to request a study for any electronic pedestrian device or contact MDOT Safety Programs to evaluate need based on safety considerations (and using surrogate volume measures)
- Consider use of in-street yield to pedestrian crossing sign (R1-6) in low speed urban



The Gateway Treatment is an innovative way to use typical in-street 'Yield to Pedestrian' signs in a way that:

- ▶ Significantly improves driver yielding compliance to pedestrians
- ▶ Significantly reduces speeds at crossing locations.

The way the Gateway Treatment works is that the in-street (R1-6) signs are placed on the edge lines, the lane lines and the centerlines of a roadway (or on the curb of a median/refuge island) directing vehicular traffic through two signs at the crossing (one on each side of the vehicle).

Key findings for this treatment:

- ▶ Driver yielding has increased and been sustained over a period of time (years of installation).
- ▶ Dramatic results have been recorded (from an initial 0% yielding up to 90-100% yielding at some locations)
- ▶ Has a minimal investment - this is a low cost solution.

⁷ [MDOT User Guide for R1-6 Gateway Treatment for Pedestrian Crossings](#)

setting if the local unit of government has adopted the Michigan Uniform Traffic Code for Cities Townships and Villages. Gateway Treatment – R1-6 In-Street signs (see MDOT’s User Guide for R1-6 Gateway Treatment for Pedestrian Crossings⁷)

- Additional pavement markings may be required such as double yellow centerline or cross hatching in advance of a median refuge island per the MDOT Pavement Marking standards
- If the location is a designated school crossing, then standard school crossing signs (S1-1) should be used
- Consider curb extensions if on-street parking is present and storm drainage can be accommodated
- If pedestrian volume falls above the RRFB limit line on Figure 8a or 8b, go to Crossing Type D



Crossing Type C:

- Where the posted speed limit is greater than or equal to 45 mph, determine if traffic calming measures can be installed to effectively reduce the operating speed such that the posted speed limit could be changed to 40 mph and if a raised median can be installed.
- If so, go to Crossing Type B
- If not, go to Crossing Type D



Crossing Type D:

- Crossing has 3 or more through lanes in a given direction and the posted speed limit is greater than 40 mph or is otherwise not suitable for an uncontrolled marked crosswalk
- Consider the Pedestrian Hybrid Beacon (PHB) (see Figure 2), pedestrian traffic signal or grade separated pedestrian crossing. Please see page 21 for more discussion on



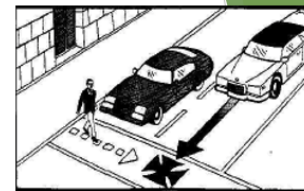
- PHBs and submit form 1597 to MDOT Signal Operations to request a feasibility study for any electronic pedestrian device or contact MDOT Safety Programs to evaluate need based on safety considerations (and using surrogate volume measures)
- Must consider corridor signal progression, grades, physical constraints and other engineering factors



Figure 2 PHB on Gratiot (M-3) near Quinn Rd/Finley St, Clinton

Table 1 lists the number of lanes crossed to reach refuge and the number of multiple threat lanes per crossing (see definition in sidebar⁸). This information does not directly play into the use of Table 1 but does provide important context to help distinguish the crossing types and support the difference in recommended crossing treatments.

Once the crossing type has been identified and specifically when an electronic device is deemed appropriate, local MDOT Traffic and Safety staff should work with the community (neighborhood associations, local outreach groups, city/county officials, etc.) in order to educate the potential users of the crossing and devices. Educating pedestrians on the proper way to activate devices and what and when to expect responses is an essential component in the effectiveness of any device or treatment. Additionally, local enforcement should be encouraged to monitor and support the treatment.



A multiple-threat crash involves a driver stopping in one lane of a multilane road to permit pedestrians to cross, and an oncoming vehicle (in the same direction) strikes the pedestrian who is crossing in front of the stopped vehicle. This crash type involves both the pedestrian and driver failing to see each other in time to avoid the collision.

⁸ [Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations](#) – FHWA 2005

When considering a crossing specifically for schools (for example through Safe Routes to School funding, <https://saferoutesmichigan.org/>) treatments should account for the users. School age children typically are not able to judge vehicular speed or distance adequately and may not be able to determine a sufficient gap in traffic to safely cross. Use of crossing guards before and after school (and other times where high-volume student crossings occur) to assist in making these crossing choices is highly recommended. Additionally, working with school officials to educate and enforce appropriate crossing behaviors is recommended.



Minimum Vehicle Volume for Treatments

Crossing treatments should generally not be installed at locations where the ADT is lower than 1,500 vehicles per day. Exceptions may be made at school crossing locations where the peak hour vehicle traffic exceeds 10% of the ADT. School crossings are defined as locations where 10 or more student pedestrians are crossing in any given hour and the crossing is a designated school walking route. Treatments for roadways with greater than 1,500 vehicles per day should be installed based on the criteria in Figure 6, Table 1 and the information in Figure 8 (a or b depending on speed limit).

Minimum Pedestrian Volume for Treatment at Uncontrolled Crossing Locations

The base threshold for consideration of an enhanced crossing treatment at an uncontrolled location is 20 pedestrians per hour. This threshold is consistent with national guidance and policies adopted by other states and cities.

The Minimum Pedestrian Volume Thresholds are as follows:

- 20 pedestrians per hour* in any one hour, or
- 18 pedestrians per hour* in any two hours, or
- 15 pedestrians per hour* in any three hours, or
- 10 school age (grades K-12) pedestrians traveling to or from school in any one hour and the crossing is a designated school walking route

*Young, elderly, and pedestrians with disabilities count two times towards volume thresholds

Surrogate Pedestrian Volume Count Data Methodology when Safety Related Concerns Exist at Crossing Location.

When safety concerns at a crossing location are identified as a main justification for the pedestrian crossing but physical pedestrian count data is not available or representative, surrogate measures can be used to meet the defined thresholds defined in the previous section of this document. The volume thresholds for electronic devices still need to be met and quantified

because they:

- Define a need – without volumes present or defined using other methodologies, there may be other opportunities to use the available resources for safety at an alternative location.
- Reasonably justify allocated resources.

Surrogate measures can include the following:

- Transit ridership count data – review transit stop counts and determine if based on these crossings can reasonably be assumed (see Figure 3).
- Corridor volumes – it is reasonable to assume that installing a device would help channelize pedestrian use within a corridor.
- Expected trips (trip generation) from and to generators. This may be calculated with a Traffic Impact Study for new developments.
- Area population – neighborhood population, usage characteristics, anticipated utilization.
- School location – student population distribution (see Figure 4).
- MDOT Pedestrian/Bicycle Risk Model
- Review a similar location type with similar characteristics that there are pedestrian volumes for. These could be utilized as surrogate volumes if shown to be representative of the study location.
- Trail usage volumes.
- Parking availability/utilization. A parking study may need to be conducted for this justification.
- Non-Motorized counts from MDOT's Traffic Data Management System (TDMS)

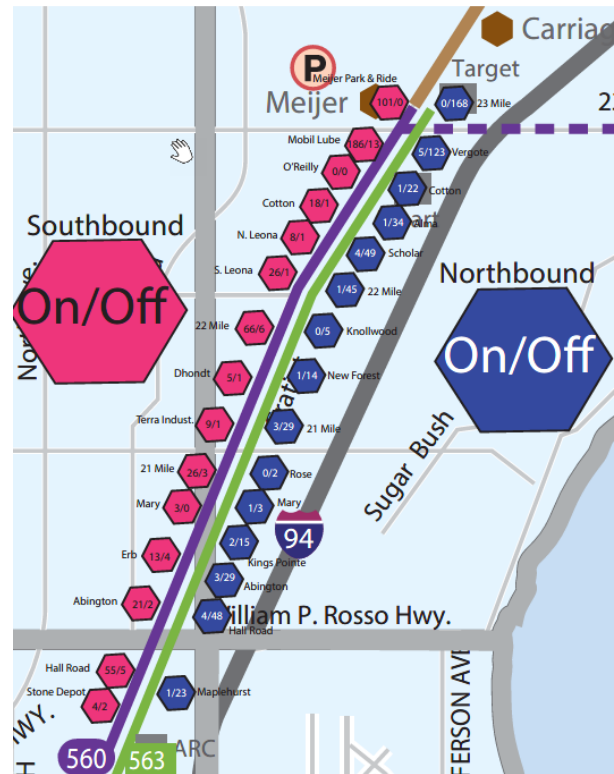


Figure 3

- Other methods of volume determination – discuss with Safety Programs



Figure 4

Surrogate Measures Methodology:

Once a safety need is identified and either physical pedestrian volumes are collected or surrogate volume measures are used, the volume data should be summarized with a discussion on the methodology of collection and validity of the data. The local Traffic and Safety engineer for that region or local office will approve the volumes and appropriateness of the treatment for the location to be submitted to Safety Programs for final review including the MDOT Signals staff in the process.

Definition of a Pedestrian Median Refuge and Minimum Median Refuge Width

A pedestrian median refuge island is defined as a location in the middle of a pedestrian crossing where a pedestrian can take refuge, separating the crossing into two stages, across each direction of approaching traffic. A painted center median or a painted turn lane does not constitute a pedestrian refuge. A pedestrian refuge must include some type of raised median as described below:

- A raised median nose at an intersection (next to a left turn bay for example) can only be considered a pedestrian refuge for the adjacent crosswalk if the median is at least four feet wide and the left turn volume is less than 20 vehicles per hour. This low left



Figure 5

turn volume means that during most pedestrian crossings there will not be a vehicle in the left turn lane as they cross the street.

- A raised median at a mid-block pedestrian crossing must be at least six feet wide (preferably 8 feet wide) and includes curb ramps or a walkway at grade through the median. For shared-use path crossing locations, a 10 foot median refuge width is desirable to accommodate bicycles with child trailers, recumbent bicycles and tandem bicycles. See Figure 5.

Distance to Nearest Marked or Protected Crossing

The Pedestrian Crossing Flowchart in Figure 6 includes consideration of spacing criteria for an uncontrolled crossing to the nearest marked or signalized crossing. The flowchart requires that a new uncontrolled mid-block crossing be at least 300 feet from the nearest crossing. However, this spacing criterion can be waived if the proposed crossing serves a shared-use path or the pedestrian crossing volume exceeds twice the minimum threshold. This criterion is subject to engineering judgment. In urban conditions, where a typical block length is 400 feet, the local MDOT agency may want to consider allowing a minimum of 200 feet, provided that the pedestrian crossing:

- Does not cross any left or right turn lanes or their transitions, where it is anticipated that vehicles will be changing lanes
- Is not near an intersection area where it will create undue restriction to vehicular traffic operations.

Pedestrian Crossing Treatments at Higher Speed Roadways with Rural Character

There may be conditions that necessitate the installation of pedestrian crossings where speeds are higher and special consideration is warranted. Engineering judgment should be applied and consideration given to providing an uncontrolled crosswalk. Engineering judgment should also be used in rural scenarios at shared use path crossings. Pedestrian warning signs/advanced pavement markings may be adequate in some situations.

Monitor Outcomes

Locations where pedestrian crossing treatments are constructed should be monitored after installation for:

- Effectiveness – collect crash and count data to demonstrate benefits and use
- Review pedestrian and vehicle interactions to help determine best practices for future installations at locations with similar roadway characteristics
- Review traffic operations (queues, congestion, etc.) and enforcement activities around treatment
- Review durability and life cycle maintenance needs for devices installed

Additional Considerations

During the process of crossing treatment selection, it is important to involve stakeholders that will be involved in the long term with costs and upkeep of the markings, signs, devices, etc.

- Consider parking restrictions as appropriate based on treatment selection
- Consider/coordinate with maintenance practices for treatments such as median/refuge islands, etc.
- Local participation in sidewalks, lighting, etc.
- Consider excessive signs/markings during crossing location review in order to allow emphasis treatments to stand out to drivers
- Consider a Road Safety Audit

Figure 6
Pedestrian Crossing Treatment Flow Chart for Controlled Crossing

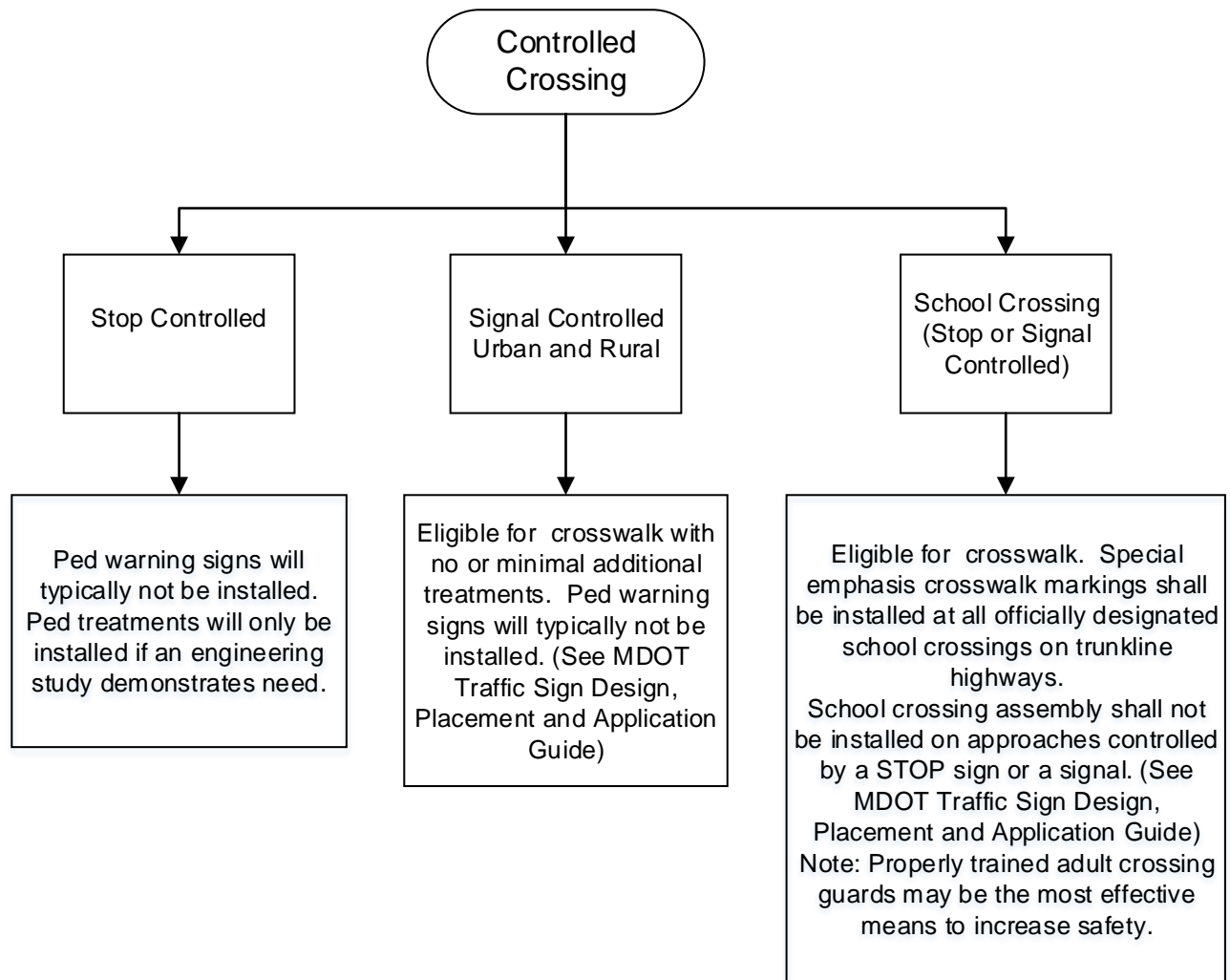
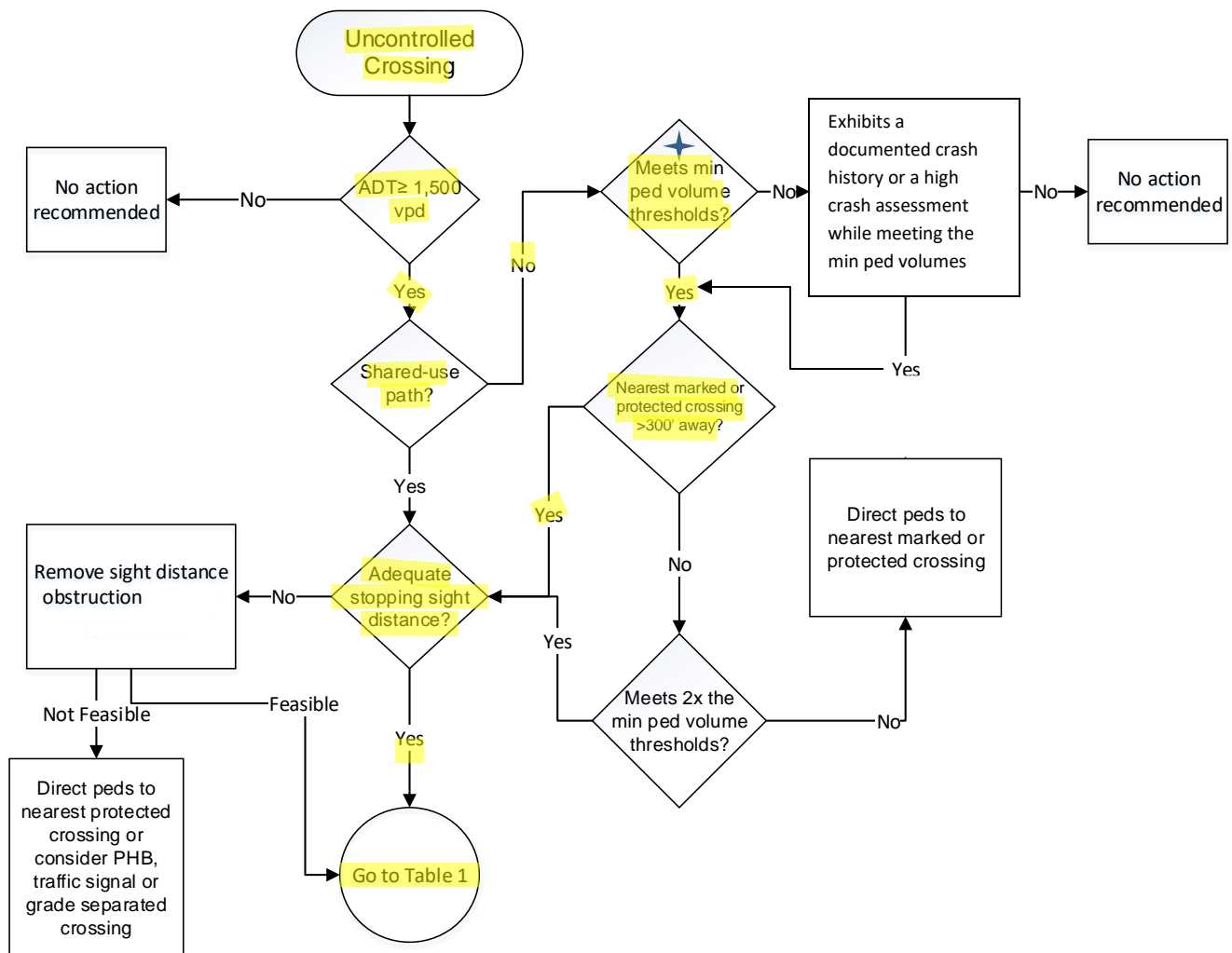


Figure 7
Pedestrian Crossing Treatment Flow Chart for Uncontrolled Crossing



- 20 pedestrians per hour* in any one hour, or
- 18 pedestrians per hour* in any two hours, or
- 15 pedestrians per hour* in any three hours, or
- 10 school age (grades K-12) pedestrians traveling to or from school in any one hour and the crossing is a designated school walking route

*Young, elderly, and pedestrians with disabilities count two times towards volume thresholds

(Using location counts or surrogate measures as applicable)

Table 1
Criteria for Crossing Treatments at Uncontrolled Locations

Roadway configuration	# of lanes crossed to reach a refuge	# of multiple threat lanes*	Roadway ADT and Posted Speed											
			1,500 - 9,000 vpd				9,000 - 12,000 vpd				12,000 - 15,000 vpd			
			≤30 mph	35 mph	40 mph	≥45 mph	≤30 mph	35 mph	40 mph	≥45 mph	≤30 mph	35 mph	40 mph	≥45 mph
2 Lanes (one way street)	2	1	A	A	A	B	A	A	A	B	A	A	B	B
2 Lanes (two way street with no median)	2	0	A	A	A	B	A	A	A	B	A	A	B	B
3 Lanes w/refuge island or 2 Lanes w/raised median	1	0	A	A	A	B	A	A	A	B	A	A	B	B
3 Lanes (center turn lane)	3	1	A	A	A	B	A	A	B	B	A	A	B	B
4 Lanes (two way street with no median)	4	2	A	B	B	C	A	B	C	C	A	B	B	C
5 Lanes w/ refuge island or 4 lanes w/raised median	2	2	A	A	B	B	A	B	B	C	A	B	C	C
5 Lanes (center turn lane)	5	2	A	B	C	C	B	B	C	C	C	C	C	C
6 Lanes (two way street with or without median)	3 to 6	4	A	B	D	D	B	B	D	D	D	D	D	D
* A multiple threat lane is defined as a through lane where it is possible for a pedestrian to step out in front of a moving vehicle in the adjacent travel lane (Either through or turn)														

Using Table 1, determine the treatment type recommended for the features of the roadway being considered for a pedestrian crossing location. Use the discussion and suggested installations for each crossing type.

Review any current best practices or alternatives that may be available for the location type determined by Table 1. Discuss these applications with Safety Programs.

asdfaasdfj;

Figure 8a
Installation of Pedestrian Hybrid Beacon (PHB) or Rectangular Rapid Flashing Beacon (RRFB) Signs on Low Speed Roadways (≤ 35 mph)

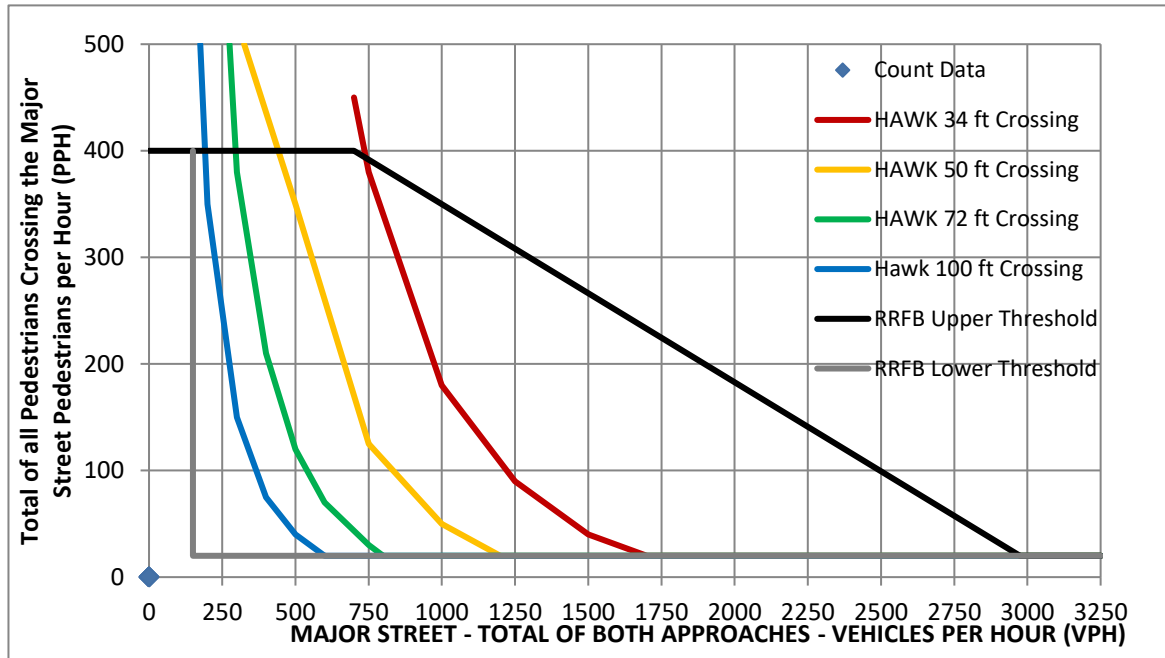
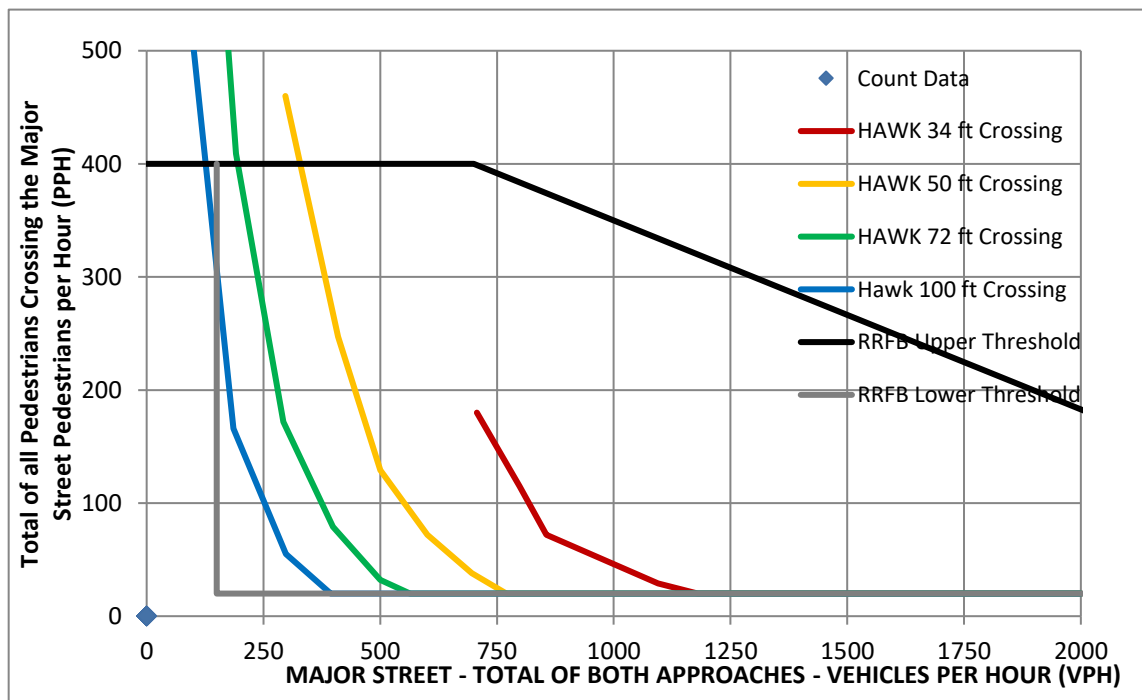


Figure 8b
Installation of Pedestrian Hybrid Beacon (PHB) or Rectangular Rapid Flashing Beacons (RRFB) Signs on High Speed Roadways (≥ 35 mph)



*See MMUTCD for pedestrian signal warrant graphs. Submit form 1597 to MDOT Signal Operations to request a feasibility study for any electronic pedestrian device.

Rectangular Rapid Flashing Beacons (RRFB)

Rectangular rapid flashing beacons (RRFB) used in conjunction with pedestrian crossing or school crossing signs can alert drivers that a pedestrian may be entering the crosswalk. The RRFB is intended to provide emphasis to the crossing signs where drivers may not be expecting pedestrians, or where special emphasis is required. The RRFB is a pedestrian actuated device which is an essential aspect of its effectiveness.

The decision to use an RRFB must be based on engineering analysis of the site conditions (see Section ‘Types of Crossing Treatments at Uncontrolled Locations’).

Application

An RRFB shall only be installed to function as a Warning Beacon (per Section 4 of the Michigan Manual on Uniform Traffic Control Devices (MMUTCD)).

An RRFB shall only be used to supplement a W11-2 (Pedestrian) or S1-1 (School) crossing warning sign with a diagonal downward arrow (W16-7p) plaque, located at or immediately adjacent to a marked crosswalk.



Figure 9: Example of RRFB with W11-2 sign and W16-7p plaque at unsignalized crosswalk.
[Photo courtesy of City of St. Petersburg, Florida]

The RRFB is to be used at mid-block pedestrian crossings or pedestrian crossings at intersection approaches that are not controlled by another traffic control device (e.g. YIELD signs, STOP signs, Pedestrian Hybrid Beacon or traffic control signals). The RRFB may be applicable to a crosswalk across the approach to and/or egress from a roundabout, if it is a new crossing.

Design

For design details please see MDOT’s online **RECTANGULAR RAPID FLASHING BEACON** special detail.

The outside edges of the RRFB indications, including any housings, shall not project beyond the outside edges of the W11-2 or S1-1 sign.

As a specific exception to MMUTCD guidance, the RRFB shall be located between the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque, rather than 12 inches above or below the sign assembly.

For any approach on which RRFBs are used, two W11-2 or S1-1 crossing warning signs (each

with RRFB and W16-7p plaque) shall be installed at the crosswalk, one on the right-hand side of the roadway and one on the left-hand side of the roadway. On a divided highway, the left-hand side assembly should be installed on the median, if practical, rather than on the far left side of the highway.

An RRFB shall not be installed independent of the crossing signs for the approach the RRFB faces. The RRFB shall be installed on the same support as the associated W11-2 (Pedestrian) or S1-1 (School) crossing warning sign and plaque.

Operation

The RRFB shall be normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.

All RRFBs associated with a given crosswalk shall, when activated, simultaneously commence operation of their alternating rapid flashing indications and shall cease operation simultaneously.

If pedestrian pushbuttons (rather than passive detection) are used to actuate the RRFBs, a pedestrian instruction sign with the legend PUSH BUTTON TO TURN ON WARNING LIGHTS should be mounted adjacent to or integral with each pedestrian pushbutton.

The duration of a predetermined period of operation of the RRFBs following each actuation should be based on the MMUTCD procedures for timing of pedestrian clearance times for pedestrian signals.

When activated, the two yellow indications in each RRFB shall flash in a rapidly alternating "wig-wag" flashing sequence (left light on, then right light on).

As a specific exception to MMUTCD requirements for the flash rate of beacons, RRFBs shall use a much faster flash rate. Each of the two yellow indications of an RRFB shall have 70 to 80 periods of flashing per minute and shall have alternating but approximately equal periods of rapid pulsing light emissions and dark operation. During each of its 70 to 80 flashing periods per minute, one of the yellow indications shall emit two rapid pulses of light and the other yellow indication shall emit three rapid pulses of light.

The flash rate of each individual yellow indication, as applied over the full on-off sequence of a flashing period of the indication, shall not be between 5 and 30 flashes per second, to avoid frequencies that might cause seizures.

The light intensity of the yellow indications shall meet the minimum specifications of Society of Automotive Engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

Pedestrian Hybrid Beacon (PHB)

A Pedestrian Hybrid Beacon (PHB), often referred to as a HAWK signal, is intended as an alternative when the warrants for a full pedestrian traffic signal are not met but additional traffic control beyond signing and pavement markings are desirable.

The PHB signal provides a protected walk movement but during the Flashing Don't Walk, the vehicle traffic is shown a flashing red to minimize delay.

When a requested, a screening is completed similar to requests for traffic signals. If deemed appropriate, a full study is conducted. An important distinction is these are minimum thresholds not "warrants".

PHBs should only be considered if the crosswalk is at least 100 feet away from an intersecting street or driveway.

Traffic Control Device Guidance

Crosswalk Pavement Marking Guidance

Crosswalk markings at an intersection shall be two 6 inch transverse markings as specified in the [Pavement Marking Standard for Intersection, Stop Bar and Crosswalk Markings](#).

Crosswalk markings for established school crossings and mid-block locations shall be Special Emphasis 12" longitudinal markings as specified in the [Pavement Marking Standard for Intersection, Stop Bar and Crosswalk Markings](#).

Pavement marking materials shall be placed as specified in the [Pavement Marking Materials Usage Guidelines](#).

Crosswalk Signing Guidance

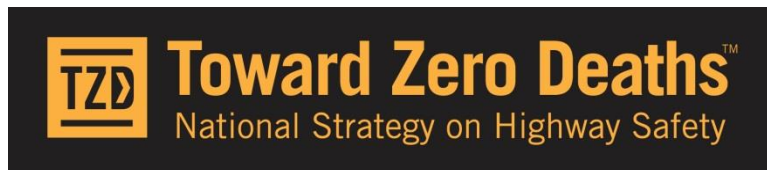
Guidance for signing can be found in the [MDOT Traffic Sign Design, Placement and Application Guidelines](#).

Traffic Signal Guidance

Guidance for the installation of traffic signals can be found in the [MDOT document Electronic Traffic Control Device Guidelines](#).

References

- 1) Michigan Manual on Uniform Traffic Control Devices, 2011.
- 2) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010
- 3) Safety Effects of Marked vs Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines, Zeeger, C.V. and others, U.S. Department of Transportation, Federal Highway Administration, September 2005.
- 4) City of Boulder Pedestrian Crossing Treatment Installation Guide, November 2001.
- 5) Improving Pedestrian Safety at Unsignalized Crossings, Kay Fitzpatrick and others, Transit Cooperative Research Program Report 112 and National Cooperative Highway Research Program Report 562, 2006.
- 6) The Effects of Advance Stop Lines and Sign Prompts on Pedestrian Safety in a Crosswalk on a Multilane Highway, Van Houten, R., Journal of Applied Behavior Analysis, Number 3, pages 245-251, Fall 1988.
- 7) Pedestrian Facilities Users Guide – Providing Safety and Mobility, Zeeger, C.V. and others, Federal Highway Administration publication number FHWA-RD-01-102, March 2002.
- 8) Safety Analysis of Marked Versus Unmarked Crosswalks in 30 Cities, Zeeger, C.V. and others, ITE Journal, January 2004.
- 9) Toward Zero Deaths <https://www.towardzerodeaths.org/>
- 10) Federal Highway Administration – Road Safety Audit <https://safety.fhwa.dot.gov/rsa/>
- 11) Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, USDOT, FHWA EDC, July 2018





MKSK

Planning
Urban Design
Landscape Architecture

March 17, 2022

VIA EMAIL ndupuis@bhamgov.org

Mr. Nicholas Dupuis
Planning Director
City of Birmingham
151 Martin Street, P.O. Box 3001
Birmingham, MI 48012

**RE: Brown Street Mixed Use Development
294 Brown Street, Birmingham, MI
Transportation Impact Study Review**

Dear Mr. Dupuis:

Fleis & VandenBrink (F&V) and MKSK have completed our review of the revised Traffic Impact Study prepared by Rowe PSC, dated March 9, 2022. The revised study addresses most of the items noted in our previous review, however there are a few outstanding items for consideration. Therefore, we offer the following comments and recommend that the study be revised accordingly. Key items are summarized below, and the guidelines and corresponding review comments are attached.

1. Improving pedestrian safety and access is top priority and the majority of trips generated by the proposed development will be to/from adjacent parking facilities. Those vehicle trips to the parking garage will then be pedestrian trips to/from the site. These trips should be included in the analysis and shown on the figures.
2. The study should provide recommendations for pedestrian mitigation measures to improve the safety of the existing pedestrian crossings, since they are anticipated to have increased pedestrian volumes generated by the proposed development. The study may include pedestrian mitigation measures including: signs, a raised crosswalk, RRFB, flashing beacons, median refuge, or additional measures.
3. The person trips generated by the proposed development should be shown on the exhibits. The pedestrian and bike trips can be distributed to the roadway network in a manner similar to site generated traffic volumes.

We hope that this report addresses the City's needs regarding this project. If you have any questions, please do not hesitate to contact us at your convenience.

Sincerely,

FLEIS & VANDENBRINK ENGINEERING, INC.

MKSK

Julie M. Kroll, PE, PTOE
Traffic Engineering Services Manager

Brad Strader, AICP, PTP
Principal, Transportation Planning Studio Leader

Attachment

Transportation Impact Study Guidelines-TIS Review

27725 Stansbury Boulevard, Suite 195
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www.fveng.com

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/15/22**

STUDY AREA: A description and map(s) of the study area including, but not limited to	Complete	Comments
1. Surrounding land uses	Yes	
2. Intersection geometries (Lane configuration, traffic control and signal timing, etc.)	Yes	
3. Roadway geometries (Functional classifications, cross-sections, jurisdictions, posted speed limits, on-street parking, grades, percentage of heavy trucks, etc.)	Yes	
4. Developments under construction, approved or anticipated in the area that may influence background conditions	Yes	
5. Planned and committed roadway improvements in the vicinity	Yes	
6. Existing traffic volume data (general ADT from recent counts, SEMCOG, etc.)	Yes	
7. Acknowledge review of the City's Master Plan, Subarea Plan, and Multi-Modal Transportation Plan, and describe or illustrate any specific recommendations in the Study Area from those Plans.	Yes	
8. Study area map(s) with site location, study intersections, and area evaluated for pedestrian, bicycle and transit)	Yes	
PROPOSED USE(S): A description of the current and proposed land use(s), including characteristics such as:	Complete	Comments
1. Type of development, with associated ITE land use categories	Yes	
2. Development size (Number of dwelling units, gross and usable floor area, etc.)	Yes	
3. Development characteristics that influence travel (Number of employees, expected hours of operation, shift change factors, work from home or other programs that may influence person travel trips)	Yes	
4. Proposed build-out year (Include any phasing or future expansion)	Yes	
EXISTING CONDITIONS: A description of existing transportation conditions, including:	Complete	Comments
1. Existing traffic, pedestrian and bicycle counts including existing peak-hour turning movement counts at the study intersections and site access point(s).	Yes	
2. Traffic count data shall not be over two years old, unless the City permits counts up to three years old to be increased by a factor supported by documentation.	Yes	
3. Traffic and non-motorized counts shall be taken on a Tuesday, Wednesday, or Thursday of non-holiday weeks, while school is in session. Additional counts (i.e. on a Saturday for a proposed commercial development) may also be required in some cases. The individual or firm, shall obtain counts during average or higher than average volume conditions (i.e. regarding weather or seasonal variations and in consideration of any construction or special events) for the area under study.	Yes	
4. Calculate the existing vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections at during the AM and PM peak hours of the streets, unless indicated otherwise. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the Highway Capacity Manual (HCM).	Yes	
5. Traffic crash data and analysis covering the most recent three (3) years for the study area or proximity to site access points is required for a TIS and MAY be required by the City for a TIA, particularly for sites along roadways identified by SEMCOG or the City as Critical or Congested Corridors or High Crash locations. (see safety section below)	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/15/22**

BACKGROUND TRAFFIC ASSUMPTIONS: A description of the background traffic growth (traffic	Complete	Comments
1. For any project with an opening date beyond one year from the date the transportation study was prepared, the analysis should include a scenario analyzing forecasted traffic at the expected date of completion (i.e. existing + forecasted change + project traffic).	Yes	
2. Existing traffic volumes should be forecasted for the future through use of historic count trends and/or use of the future traffic projected by SEMCOG + traffic associated with approved and/or proposed developments in the vicinity of the study area that have yet to be constructed, are currently under construction or are not yet fully occupied (data from traffic studies for those projects may be available from the City for this calculation).	Yes	
3. Include in the baseline background condition, any transportation improvement projects in the study area that will be completed or underway by the build-out year.	Yes	
4. Calculate the background (without the proposed development) vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections at during the AM and PM, unless indicated otherwise. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the HCM.	Yes	
5. If one or more movements experiences a LOS "E" or worse in the downtown, or "D" or worse outside of the downtown, a description shall be provided and potential mitigation measures need to be evaluated.	Yes	

PERSON TRIP GENERATION: A description of the person trip generation, including:	Complete	Comments
1. Forecast of the number of peak hour (AM and PM, if applicable) and daily person trips that would be generated by the proposed development based on data published by the most recent edition of the Institute of Transportation Engineers (ITE) in Trip Generation and/or local development data as approved for use in the study by the City.	Yes	
2. Provide a comprehensive analysis of site-generated trips, based on the available transportation modes (i.e. private vehicle, semi-truck, pedestrian, bicycle, bike share, e-bike, e-scooter, SMART transit, private shuttles, ride hailing, and any other ways people or goods may be transported to the site.)	Yes	
3. A table that describes the land use, ITE code number, development size/number of units, daily trips, and peak hour trips in and out.	Yes	
4. Any trip reduction for pass-by trips, internal capture rates, transit, ridesharing, other modes, etc. shall be based on ITE methodologies in the Trip Generation Handbook.	Yes	
5. For a rezoning, a comparison of the rates associated with the range of uses permitted in the current zoning district compared to the range of uses permitted in the requested district.	N/A	
6. For projects intended to be developed in phases, trip generation by phase shall be described and provided in a table format.	N/A	

TRIP DISTRIBUTION: A description of the trip distribution (expected trip routing), including:	Complete	Comments
1. Illustrations of where traffic generated is expected to be distributed onto the existing street network. The basis shall be explained (counts, observations, gravity model, market study)	No	No pedestrian volume data
2. Illustrations of project turning movements at site access point(s) and nearby intersections, where required.	No	No pedestrian volume data
3. For pedestrian, bicycle and transit trips, a map that illustrates expected volumes and the travel patterns related to nearby pedestrian crossings, bike share/parking, bus stops.	No	No pedestrian volume data

PROJECTED CONDITIONS - TRAFFIC: A description of the future transportation conditions, including:	Complete	Comments
1. Calculate the future (existing + background + development) vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections during the AM and PM, unless indicated otherwise.	Yes	
2. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the HCM.	Yes	
3. If one or more movements experiences a LOS "E" or worse in the downtown, or "D" or worse outside the downtown, potential mitigation measures shall be evaluated.(see mitigation section below)	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/15/22**

NON-MOTORIZED AND TRANSIT: A description of multi-modal transportation, including:	Complete	Comments
1. Describe the existing + projected volumes of pedestrian and bicyclists.	Yes	
2. Provide a map that illustrates anticipated pedestrian and bicycle travel to and from the site including sidewalks, crosswalks or expected crossing locations, bike lanes, bicycle parking, and the closest SMART bus stops.	Yes	
3. Illustrations on a site plan of the anticipated on-site routing of pedestrians and bicyclists, including those in any parking lot or structure.	Yes	
4. An evaluation of the anticipated routes used by pedestrians and bicyclists to/from and within the site. This should include an evaluation of the pedestrian signal timing.	Yes	
ACCESS MANAGEMENT. A description of the access design/access design and a demonstration that	Complete	Comments
a. Illustration of the site plan with the location and design of the proposed access point(s).	Yes	
b. Data to demonstrate the number of driveways proposed is the fewest necessary to provide reasonable access.	Yes	
c. Notation of any sight distance limitations and, if applicable, changes to meet standards (sight distance to/from vehicles, and for pedestrians and bicyclists).	Yes	
d. Dimensions from adjacent driveways and intersections on either side of the street in the vicinity of the proposed driveway(s), with analysis to demonstrate that there will not be conflicts such as left-turn lock-ups with opposing access points.	Yes	
e. Dimensions from signalized intersections and analysis that the access points will not interfere with the functional operating area (i.e. the area within which vehicles commonly queue).	Yes	
f. Evaluation of the need for any changes to streets or access to improve safety and travel for vehicles, pedestrians, and bicyclists (driveway radii, widths, turn lanes, tapers, etc).	Yes	
SAFETY: A safety analysis is required to evaluate the existing safety and the impact of additional site	Complete	Comments
1. A safety analysis shall be performed at the study intersections and site driveway locations.	Yes	
2. The safety analysis shall include an evaluation of all crashes that have occurred within the past five (5) years of available data. Those that involved a pedestrian or bicyclists should be highlighted.	Yes	
3. Crashes shall be evaluated in accordance with the most recent version of the SEMCOG Crash Analysis Process as outlined in the SEMCOG Traffic Safety Manual (or analysis using the procedures in the Highway Safety Manual for FHWA STEM guidelines if endorsed by the City Traffic Engineer as appropriate for the location).	Yes	
4. The intersection crash summary shall be compared for each intersection to determine the if the intersections are high-crash locations as compared to similar intersections by type and location and identify any significant crash patterns.	Yes	
5. Provide a summary of generally related causes and potential countermeasures for crash patterns, including specific countermeasures to address pedestrian and bicycle safety.	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/15/22**

PARKING AND CIRCULATION: A description of parking and on-site circulation including	Complete	Comments
1. Review of the parking requirements in the Zoning Ordinance, where applicable.	Yes	
2. Describe the anticipated parking demand of the proposed development.	Yes	
3. Describe the locations of bicycle and micromobility parking proposed to be installed as part of this project, and explain how the locations were selected.	Yes	
4. Proposed program to accommodate parking demand. This may include a description of on- site parking, shared parking (agreements required) or use of city parking structures/lots (for those within the parking assessment area).	Yes	Study indicates 48 spaces for residential and 11 parking spaces for office.
5. If public parking facilities are expected to be utilized for all or some of the parking demand, an acknowledgement by the Developer of the current availability should be provided.	Yes	Study indicates adequate capacity in the Pierce St. garage, per 2021 data. No pre-COVID data was provided.
6. Describe any parking features related to sustainability such as underground parking, parking lot canopy trees, Electric Vehicle Charging Stations, car-share, bicycle parking etc.	Yes	
7. Circulation for vehicles that will commonly operate on the site shall be illustrated with appropriate turning radii (delivery vehicles, semi-trucks, access to waste receptables, etc.)	Yes	
8. There must be sufficient on-site storage to accommodate at least three (3) queued vehicles waiting to park or exit without using a portion of the public right-of-way obstructing exiting vehicle sight distance, or otherwise interfering with street traffic.	Yes	
9. For uses with a drive-through, an analysis shall be provided that the on-site queuing area is sufficient to accommodate peak conditions without causing back-up onto public streets. The City may require a special study of similar uses and site sizes from other locations in Michigan.	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/15/22**

MITIGATION: A description of measures/alternatives to mitigate the development's transportation impact for the categories below. The timing or phasing of improvements, and how those improvements will be accomplished, shall be described.	Complete	Comments
Non-Motorized: Describe any design changes that could improve the Quality of Service (travel convenience and safety) for pedestrians and bicyclists (both in the study area and on-site). Examples include: additional or improve crosswalks, pedestrian signals/signs, bump-outs, streetscape enhancements. Describe the timing or phasing of vehicle and non-motorized improvements, and how those improvements will be accomplished	No	Provide mitigation measures to accomodate the projected increase in pedestrian traffic generated by this development.
Transit: For site along a SMART route, or within ¼ mile of a bus stop, describe any proposed transit enhancements, such as the installation of a bench or a bus shelter. Documentation of communications with SMART regarding bus stop relocations or any amenities to make transit more convenient shall be provided.	Yes	
Transportation Demand Management: Describe design features and programs that the developer or Owner has considered or will employ to reduce vehicular travel, such as: on-site amenities, employee health programs, convenient and covered bicycle parking, shared vehicle service with priority parking, micro-transit to remote parking areas, free or subsidized bike share programs, financial incentives (e.g. transit passes, separate charges for any on-site parking, etc.)	Yes	
Traffic: Outline of proposed mitigation measures necessary to accommodate the existing, background, and/or future conditions, for the study street network required (if needed) to accommodate the site-generated traffic volumes at a LOS E or better for all movements in the downtown and D or better outside of the downtown. If the street is under jurisdiction of MDOT or the Road Commission for Oakland County, the applicant shall document those agencies endorse the change. A list of example mitigation measures is provided below. The designers are encourage to explore other options as well. The City may require a description of alternatives considered and an explanation of those selected. 1. Street Improvements: Construct additional lanes, add turn lanes, improve sight distance 2. Median Changes: Modify, relocate or close median crossovers, alter traffic signals 3. Operational Improvements: Changes to signalization, improve pedestrian phases Note: For study intersections located along coordinated signal corridors, optimizing traffic signals will not be considered an acceptable recommendation to mitigate site-generated traffic Unless proposed signal timing changes reduce delays for the network not just traffic associated with the development Note: If a traffic signal is recommended at any of the study intersections or site access point(s), a signal warrant analysis shall be included in the study and follow the guidelines provided in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). The signal warrant analysis shall include an evaluation of Warrant 1: Eight-Hour Volumes, Warrant 2: Four-Hour Volumes, and Warrant 3: Peak-Hour Volumes. 4. Access Management: Close or consolidate access points, relocate access to reduce conflicts, change driveway design to improve crossings for pedestrians and bicyclists, provide access onto a lower volume street (when appropriate) 5. Site Plan/Land Use Techniques: Reduce project intensity, alter site design, on-site traffic calming, move drive-through or increase queuing area	Yes	



MKSK

Planning
Urban Design
Landscape Architecture

March 2, 2022

VIA EMAIL ndupuis@bhamgov.org

Mr. Nicholas Dupuis
Planning Director
City of Birmingham
151 Martin Street, P.O. Box 3001
Birmingham, MI 48012

**RE: Brown Street Mixed Use Development
294 Brown Street, Birmingham, MI
Transportation Impact Study Review**

Dear Mr. Dupuis:

Fleis & VandenBrink (F&V) and MKSK have completed our review of the Traffic Impact Study prepared by Rowe PSC, dated February 16, 2022. Based on our review of the TIS, we offer the following comments the study should be revised to reflect the comments noted on the attached Transportation Impact Study Guidelines. Key items are summarized below, and the guidelines and corresponding review comments are attached.

1. The majority of trips generated by the proposed development will be to/from adjacent parking facilities. Those vehicle trips will then be pedestrian trips to/from the site. These trips should be included in the analysis and shown on the figures. The increase in pedestrian trips should be considered in the evaluation of the safety and operations of the existing pedestrian facilities and recommendations for improvements should be provided in the TIS.
2. There were three (3) pedestrian crashes noted in the analysis. Mitigation measures should be identified to improve pedestrian safety and to accommodate the projected increase in pedestrian trips generated by the proposed development.
3. The study notes that the Multi-Modal Transportation Plan recommends enhancements and curb extensions at the existing mid-block crosswalk on E. Brown St. at the Pierce St. parking garage. These should be considered as a mitigation measure in this study to accommodate the projected pedestrian trips generated by this development.
4. The study indicates that there is adequate capacity in the Pierce Street Garage to accommodate for the proposed parking generated by the proposed development, based upon data provided in 2021. However, no pre-COVID data was provided to confirm that the Pierce Street Garage can accommodate the projected parking demand. If additional parking is necessary to accommodate this development, the vehicle distribution and pedestrian volumes should be distributed to the network accordingly.
5. The study recommends a traffic activated audible and visual warning system to alert pedestrians to vehicles at the parking garage entrance. Alternative mitigations should be considered, so that the driver has the obligation to yield the right-of-way to pedestrian on the sidewalk, rather than the pedestrian to the vehicle as suggested in the TIS.
6. Provide the dimensions from adjacent driveways, intersections on either side of the street in the vicinity of the proposed driveway(s), with analysis to demonstrate that there will not be conflicts such as left-turn lock-ups with opposing access points that the access driveway will not interfere with the functional operating area of the adjacent signalized intersection at Brown & Old Woodward.

27725 Stansbury Boulevard, Suite 195
Farmington Hills, MI 48334

P: 248.536.0080

F: 248.536.0079

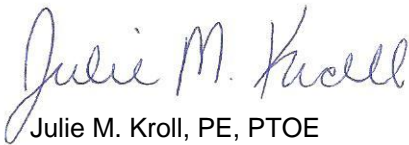
www.fveng.com

7. The results of the study should provide recommendations to accommodate the person trips generated by this development. This should be reevaluated with the comments included herein and attached comments noted on the *Transportation Impact Study Guidelines* considering all users.

We hope that this report addresses the City's needs regarding this project. If you have any questions, please do not hesitate to contact us at your convenience.

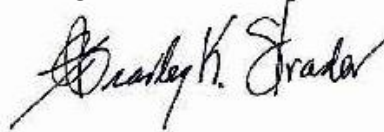
Sincerely,

FLEIS & VANDENBRINK ENGINEERING, INC.



Julie M. Kroll, PE, PTOE
Traffic Engineering Services Manager

MKSK



Brad Strader, AICP, PTP
Principal, Transportation Planning Studio Leader

Attachment

Transportation Impact Study Guidelines-TIS Review

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/2/22**

STUDY AREA: A description and map(s) of the study area including, but not limited to:	Complete	Comments
1. Surrounding land uses	Yes	
2. Intersection geometries (Lane configuration, traffic control and signal timing, etc.)	Yes	
3. Roadway geometries (Functional classifications, cross-sections, jurisdictions, posted speed limits, on-street parking, grades, percentage of heavy trucks, etc.)	Yes	
4. Developments under construction, approved or anticipated in the area that may influence background conditions	Yes	
5. Planned and committed roadway improvements in the vicinity	Yes	
6. Existing traffic volume data (general ADT from recent counts, SEMCOG, etc.)	Yes	
7. Acknowledge review of the City's Master Plan, Subarea Plan, and Multi-Modal Transportation Plan, and describe or illustrate any specific recommendations in the Study Area from those Plans.	Yes	
8. Study area map(s) with site location, study intersections, and area evaluated for pedestrian, bicycle and transit)	Yes	
PROPOSED USE(S): A description of the current and proposed land use(s), including characteristics such as:	Complete	Comments
1. Type of development, with associated ITE land use categories	Yes	
2. Development size (Number of dwelling units, gross and usable floor area, etc.)	Yes	
3. Development characteristics that influence travel (Number of employees, expected hours of operation, shift change factors, work from home or other programs that may influence person travel trips)	Yes	
4. Proposed build-out year (Include any phasing or future expansion)	Yes	
EXISTING CONDITIONS: A description of existing transportation conditions, including:	Complete	Comments
1. Existing traffic, pedestrian and bicycle counts including existing peak-hour turning movement counts at the study intersections and site access point(s).	No	The Figures show AM, MD and PM traffic counts, however the study evaluated AM, PM and SAT, please clarify what traffic volumes are shown on the exhibits. No Ped/Bike Counts shown on exhibits.
2. Traffic count data shall not be over two years old, unless the City permits counts up to three years old to be increased by a factor supported by documentation.	Yes	
3. Traffic and non-motorized counts shall be taken on a Tuesday, Wednesday, or Thursday of non-holiday weeks, while school is in session. Additional counts (i.e. on a Saturday for a proposed commercial development) may also be required in some cases. The individual or firm, shall obtain counts during average or higher than average volume conditions (i.e. regarding weather or seasonal variations and in consideration of any construction or special events) for the area under study.	Yes	
4. Calculate the existing vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections at during the AM and PM peak hours of the streets, unless indicated otherwise. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the Highway Capacity Manual (HCM).	Yes	
5. Traffic crash data and analysis covering the most recent three (3) years for the study area or proximity to site access points is required for a TIS and MAY be required by the City for a TIA, particularly for sites along roadways identified by SEMCOG or the City as Critical or Congested Corridors or High Crash locations. (see safety section below)	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/2/22**

BACKGROUND TRAFFIC ASSUMPTIONS: A description of the background traffic growth (traffic	Complete	Comments
1. For any project with an opening date beyond one year from the date the transportation study was prepared, the analysis should include a scenario analyzing forecasted traffic at the expected date of completion (i.e. existing + forecasted change + project traffic).	Yes	
2. Existing traffic volumes should be forecasted for the future through use of historic count trends and/or use of the future traffic projected by SEMCOG + traffic associated with approved and/or proposed developments in the vicinity of the study area that have yet to be constructed, are currently under construction or are not yet fully occupied (data from traffic studies for those projects may be available from the City for this calculation).	Yes	
3. Include in the baseline background condition, any transportation improvement projects in the study area that will be completed or underway by the build-out year.	Yes	
4. Calculate the background (without the proposed development) vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections at during the AM and PM, unless indicated otherwise. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the HCM.	Yes	
5. If one or more movements experiences a LOS "E" or worse in the downtown, or "D" or worse outside of the downtown, a description shall be provided and potential mitigation measures need to be evaluated.	Yes	

PERSON TRIP GENERATION: A description of the person trip generation, including:	Complete	Comments
1. Forecast of the number of peak hour (AM and PM, if applicable) and daily person trips that would be generated by the proposed development based on data published by the most recent edition of the Institute of Transportation Engineers (ITE) in Trip Generation and/or local development data as approved for use in the study by the City.	Yes	
2. Provide a comprehensive analysis of site-generated trips, based on the available transportation modes (i.e. private vehicle, semi-truck, pedestrian, bicycle, bike share, e-bike, e-scooter, SMART transit, private shuttles, ride hailing, and any other ways people or goods may be transported to the site.)	Yes	
3. A table that describes the land use, ITE code number, development size/number of units, daily trips, and peak hour trips in and out.	Yes	
4. Any trip reduction for pass-by trips, internal capture rates, transit, ridesharing, other modes, etc. shall be based on ITE methodologies in the Trip Generation Handbook.	Yes	
5. For a rezoning, a comparison of the rates associated with the range of uses permitted in the current zoning district compared to the range of uses permitted in the requested district.	N/A	
6. For projects intended to be developed in phases, trip generation by phase shall be described and provided in a table format.	N/A	

TRIP DISTRIBUTION: A description of the trip distribution (expected trip routing), including:	Complete	Comments
1. Illustrations of where traffic generated is expected to be distributed onto the existing street network. The basis shall be explained (counts, observations, gravity model, market study)	No	The Figures show AM, MD and PM traffic counts, however the study evaluated AM, PM and SAT, please clarify what traffic volumes are shown on the exhibits. No Ped/Bike Counts shown on exhibits.
2. Illustrations of project turning movements at site access point(s) and nearby intersections, where required.	No	The Figures show AM, MD and PM traffic counts, however the study evaluated AM, PM and SAT, please clarify what traffic volumes are shown on the exhibits. No Ped/Bike Counts shown on exhibits.
3. For pedestrian, bicycle and transit trips, a map that illustrates expected volumes and the travel patterns related to nearby pedestrian crossings, bike share/parking, bus stops.	No	No discussion, map or volume data was provided. The majority of trips generated by this development will be to/from adjacent parking facilities. Those trips are then pedestrian trips to/from the site. This should be included in the analysis and shown on the figures.

PROJECTED CONDITIONS - TRAFFIC: A description of the future transportation conditions, including:	Complete	Comments
1. Calculate the future (existing + background + development) vehicle delays, LOS, and vehicle queues for all movements at signalized intersections and for all critical movements at unsignalized intersections during the AM and PM, unless indicated otherwise.	Yes	
2. Intersection analysis shall include LOS determination for all approaches and movements, based on the procedures outlined in the most recent edition of the HCM.	Yes	
3. If one or more movements experiences a LOS "E" or worse in the downtown, or "D" or worse outside the downtown, potential mitigation measures shall be evaluated.(see mitigation section below)	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/2/22**

NON-MOTORIZED AND TRANSIT: A description of multi-modal transportation, including:	Complete	Comments
1. Describe the existing + projected volumes of pedestrian and bicyclists.	Yes	
2. Provide a map that illustrates anticipated pedestrian and bicycle travel to and from the site including sidewalks, crosswalks or expected crossing locations, bike lanes, bicycle parking, and the closest SMART bus stops.	No	Figure 6 is missing existing and proposed sidewalk
3. Illustrations on a site plan of the anticipated on-site routing of pedestrians and bicyclists, including those in any parking lot or structure.	Yes	
4. An evaluation of the anticipated routes used by pedestrians and bicyclists to/from and within the site. This should include an evaluation of the pedestrian signal timing.	No	The study indicates that pedestrians will utilize the existing pedestrian facilities and crosswalks, however there is no discussion regarding pedestrian desire lines and pedestrians crossing mid-block.
ACCESS MANAGEMENT. A description of the access design/access design and a demonstration that	Complete	Comments
a. Illustration of the site plan with the location and design of the proposed access point(s).	Yes	
b. Data to demonstrate the number of driveways proposed is the fewest necessary to provide reasonable access.	Yes	
c. Notation of any sight distance limitations and, if applicable, changes to meet standards (sight distance to/from vehicles, and for pedestrians and bicyclists).	Yes	
d. Dimensions from adjacent driveways and intersections on either side of the street in the vicinity of the proposed driveway(s), with analysis to demonstrate that there will not be conflicts such as left-turn lock-ups with opposing access points.	No	Not provided
e. Dimensions from signalized intersections and analysis that the access points will not interfere with the functional operating area (i.e. the area within which vehicles commonly queue).	No	Not provided
f. Evaluation of the need for any changes to streets or access to improve safety and travel for vehicles, pedestrians, and bicyclists (driveway radii, widths, turn lanes, tapers, etc).	Yes	
SAFETY: A safety analysis is required to evaluate the existing safety and the impact of additional site	Complete	Comments
1. A safety analysis shall be performed at the study intersections and site driveway locations.	Yes	
2. The safety analysis shall include an evaluation of all crashes that have occurred within the past five (5) years of available data. Those that involved a pedestrian or bicyclists should be highlighted.	Yes	
3. Crashes shall be evaluated in accordance with the most recent version of the SEMCOG Crash Analysis Process as outlined in the SEMCOG Traffic Safety Manual (or analysis using the procedures in the Highway Safety Manual for FHWA STEM guidelines if endorsed by the City Traffic Engineer as appropriate for the location).	Yes	
4. The intersection crash summary shall be compared for each intersection to determine the if the intersections are high-crash locations as compared to similar intersections by type and location and identify any significant crash patterns.	Yes	
5. Provide a summary of generally related causes and potential countermeasures for crash patterns, including specific countermeasures to address pedestrian and bicycle safety.	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/2/22**

PARKING AND CIRCULATION: A description of parking and on-site circulation including:	Complete	Comments
1. Review of the parking requirements in the Zoning Ordinance, where applicable.	Yes	
2. Describe the anticipated parking demand of the proposed development.	Yes	
3. Describe the locations of bicycle and micromobility parking proposed to be installed as part of this project, and explain how the locations were selected.	Yes	
4. Proposed program to accommodate parking demand. This may include a description of on- site parking, shared parking (agreements required) or use of city parking structures/lots (for those within the parking assessment area).	Yes	Study indicates 48 spaces for residential and 11 parking spaces for office.
5. If public parking facilities are expected to be utilized for all or some of the parking demand, an acknowledgement by the Developer of the current availability should be provided.	Yes	Study indicates adequate capacity in the Pierce St. garage, per 2021 data. No pre-COVID data was provided.
6. Describe any parking features related to sustainability such as underground parking, parking lot canopy trees, Electric Vehicle Charging Stations, car-share, bicycle parking etc.	Yes	
7. Circulation for vehicles that will commonly operate on the site shall be illustrated with appropriate turning radii (delivery vehicles, semi-trucks, access to waste receptables, etc.)	No	Not provided
8. There must be sufficient on-site storage to accommodate at least three (3) queued vehicles waiting to park or exit without using a portion of the public right-of-way obstructing exiting vehicle sight distance, or otherwise interfering with street traffic.	No	Additional information required.
9. For uses with a drive-through, an analysis shall be provided that the on-site queuing area is sufficient to accommodate peak conditions without causing back-up onto public streets. The City may require a special study of similar uses and site sizes from other locations in Michigan.	Yes	

Transportation Impact Study**Engineer: Rowe PSC****Study Date: 2/17/2022****Reviewed by: Fleis & VandenBrink and MKSK****Date: 3/2/22**

MITIGATION: A description of measures/alternatives to mitigate the development's transportation impact for the categories below. The timing or phasing of improvements, and how those improvements will be accomplished, shall be described.	Complete	Comments
Non-Motorized: Describe any design changes that could improve the Quality of Service (travel convenience and safety) for pedestrians and bicyclists (both in the study area and on-site). Examples include: additional or improve crosswalks, pedestrian signals/signs, bump-outs, streetscape enhancements. Describe the timing or phasing of vehicle and non-motorized improvements, and how those improvements will be accomplished	No	The study notes that the Multi-Modal Transportation Plan recommends enhancements and curb extensions at the existing mid-block crosswalk on E. Brown St. at the Pierce St. parking garage. These should be considered as a mitigation measure in this study to accommodate the projected pedestrian trips generated by this development.
Transit: For site along a SMART route, or within ¼ mile of a bus stop, describe any proposed transit enhancements, such as the installation of a bench or a bus shelter. Documentation of communications with SMART regarding bus stop relocations or any amenities to make transit more convenient shall be provided.	Yes	
Transportation Demand Management: Describe design features and programs that the developer or Owner has considered or will employ to reduce vehicular travel, such as: on-site amenities, employee health programs, convenient and covered bicycle parking, shared vehicle service with priority parking, micro-transit to remote parking areas, free or subsidized bike share programs, financial incentives (e.g. transit passes, separate charges for any on-site parking, etc.)	Yes	
Traffic: Outline of proposed mitigation measures necessary to accommodate the existing, background, and/or future conditions, for the study street network required (if needed) to accommodate the site-generated traffic volumes at a LOS E or better for all movements in the downtown and D or better outside of the downtown. If the street is under jurisdiction of MDOT or the Road Commission for Oakland County, the applicant shall document those agencies endorse the change. A list of example mitigation measures is provided below. The designers are encourage to explore other options as well. The City may require a description of alternatives considered and an explanation of those selected. 1. Street Improvements: Construct additional lanes, add turn lanes, improve sight distance 2. Median Changes: Modify, relocate or close median crossovers, alter traffic signals 3. Operational Improvements: Changes to signalization, improve pedestrian phases Note: For study intersections located along coordinated signal corridors, optimizing traffic signals will not be considered an acceptable recommendation to mitigate site-generated traffic Unless proposed signal timing changes reduce delays for the network not just traffic associated with the development Note: If a traffic signal is recommended at any of the study intersections or site access point(s), a signal warrant analysis shall be included in the study and follow the guidelines provided in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). The signal warrant analysis shall include an evaluation of Warrant 1: Eight-Hour Volumes, Warrant 2: Four-Hour Volumes, and Warrant 3: Peak-Hour Volumes. 4. Access Management: Close or consolidate access points, relocate access to reduce conflicts, change driveway design to improve crossings for pedestrians and bicyclists, provide access onto a lower volume street (when appropriate) 5. Site Plan/Land Use Techniques: Reduce project intensity, alter site design, on-site traffic calming, move drive-through or increase queuing area	No	No mitigation measures were recommended to accommodate this development. This should be reevaluated with the comments included herein.



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
WARREN DISTRICT OFFICE



LIESL EICHLER CLARK
DIRECTOR

December 22, 2021

**ACKNOWLEDGEMENT OF RECEIPT OF A BASELINE ENVIRONMENTAL
ASSESSMENT**

BEA ID: 63501436-BEA-1

Legal Entity:

Woodward Development, LLC
Attention: Kevin Stafford
15 Koch Road
Corte Madera, California 94925

Property Address:

300-394 South Old Woodward Avenue and 294 Brown Street
Birmingham, Michigan 48009

On November 16, 2021, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) received a Baseline Environmental Assessment (BEA) dated September 14, 2021, for the above legal entity and property. This letter is your acknowledgement that EGLE has received and recorded the BEA. EGLE maintains an administrative record of each BEA as received.

This BEA was submitted pursuant to Section 20126(1)(c) of Part 201, Environmental Remediation and/or Section 21323a(1)(b) of Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). A BEA is submitted for the purpose of establishing an exemption to liability for a new owner or operator of property that has been demonstrated to be a facility or property as defined by Section 20101(1)(s) of Part 201, Environmental Remediation and/or property as defined by Section 21303(d) of Part 213, Leaking Underground Storage Tanks, of the NREPA. Pursuant to Sections 20126(1)(c) and 21323a(1)(b), the conditions of this exemption require the legal entity to disclose the BEA to a subsequent purchaser or transferee of the property.

The BEA is only for the legal entity and property, or properties identified on the BEA Submittal Form and in the BEA that have been demonstrated to be a facility. Each new legal entity that becomes the owner or operator of this facility must submit their own BEA.

EGLE is not making any findings about whether the submitter is liable or is eligible to submit. The submitted BEA does not alter liability with regard to a subsequent release, threat of release, or exacerbation of existing conditions that is the responsibility of the legal entity submitting the BEA.

EGLE does not review BEAs to determine the adequacy of the submittal. The 2020 Volatilization to Indoor Air Pathway (VIAP) Screening Levels (SLs) may be proposed as site-specific criteria when used to determine that a property is or contains a facility or site. ELGE's approval of these numeric site-specific criteria is required. Since the BEA has not been reviewed, if the BEA relied upon the 2020 VIAP SLs then their use within the BEA is approved only for the purpose of confirming the status of the property as a facility under Part 201 or a site under Part 213.

The legal entity, as the owner and/or operator of a facility or property, may have Due Care responsibilities under Section 20107a of Part 201, Environmental Remediation and/or Section 21304c of Part 213, Leaking Underground Storage Tanks, of the NREPA.

The legal entity may also have responsibility under applicable state and federal laws, including, but not limited to, Part 201, Environmental Remediation; Part 111, Hazardous Waste Management; Part 211, Underground Storage Tank Regulations; Part 213, Leaking Underground Storage Tanks; Part 615, Supervisor of Wells, of the NREPA; and the Michigan Fire Prevention Code, 1941 PA 207, as amended. Please review the enclosed brochure on "due care." An owner or operator of contaminated property has an obligation to assure the property is safe for the intended use and is protective of the public health and safety.

Pursuant to Section 20112a(6) of Part 201, Environmental Remediation, the property(s) identified in the BEA will be placed on the inventory of facilities, which is updated daily and posted on EGLE's website: <https://secure1.state.mi.us/FacilitiesInventoryQueries>

Authorized signature:

A handwritten signature in blue ink, appearing to read "Paul Owens", is written over a horizontal line. To the right of the signature, there are two additional handwritten initials, possibly "JS", in blue ink.

Paul Owens, District Supervisor
Warren District Office
Remediation and Redevelopment Division
27700 Donald Court
Warren, Michigan 48092-2793
586-235-6990
OwensP@Michigan.gov

Enclosures
cc: Aaron Snow, PM Environmental

Community Impact Study

Community Impact Study

BROWN STREET MIXED-USE

294 E BROWN STREET

Birmingham, MI

Prepared By

Saroki Architecture

430 N. Old Woodward Ave.

Birmingham, MI 48009

Property Owner

Trott Properties 294, LLC

266 Elm Street, Suite 100

Birmingham, MI 48009

BROWN STREET MIXED-USE

294 E BROWN STREET

Birmingham, MI

Development Team

Application/Developer

Boji Group
255 S. Old Woodward Ave, Suite 310
Birmingham, MI 48009
(248) 646-3151

Architect

Saroki Architecture
430 N. Old Woodward Ave
Birmingham MI, 48009
(248) 258-5707

Surveyor & Civil Engineer

Nowak & Fraus Engineers
46777 Woodward Ave.
Pontiac, MI 48342
(248) 332-7931

Landscape Architect

Michael J Dul & Associates, Inc.
212 Danes Street
Birmingham, MI 48009
(248) 644-3410

Environmental Engineer

PM Environmental, INC.
4080 West Eleven Mile Road
Berkley, MI 48072
(248) 414-1425

MEP Engineer

Mechanical Electrical Engineering Consultants
14496 N. Sheldon Rd. Ste. 260
Plymouth, MI 48170
(248) 935-4671

Geotechnical Engineer

(Geotechnical Investigation & Engineering)
McDowell & Associates
21355 Hatcher Avenue
Ferndale, MI 48220
(248) 399-2066

Acoustical Engineer

Kolano and Saha Engineers, Inc.
3559 Sashabaw Road
Waterford, MI 48329
(248) 674-4100

Traffic Engineer

ROWE Professional Services Company
27280 Haggerty Road, Ste. C-2
Farmington Hills, MI 48331
(248) 675-1096

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Section 1

CIS Checklist & Zoning Requirements Analysis



COMMUNITY IMPACT STUDY CHECKLIST PLANNING DIVISION

Applicant: _____ Case #: _____ Date: _____

Address: _____ Project: _____

All Community Impact Studies prepared for approval must contain the following information:

General Information

- _____ 1. Name and address of applicant and proof of ownership;
- _____ 2. Name of Development (if applicable);
- _____ 3. Address of site and legal description of the real estate;
- _____ 4. Name and address of the land surveyor;
- _____ 5. Legend and notes, including a graphic scale, north point, and date;
- _____ 6. A separate location map;
- _____ 7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land;
- _____ 8. Details of all proposed site plan changes;

Planning & Zoning Issues

- _____ 9. Recommended land use of the subject property as designated on the Future Land Use Map of the City's Master Plan;
- _____ 10. Goals and objectives of the city's Master Plans that demonstrate the City's support of the proposed development;
- _____ 11. Whether or not the project site is located within an area of the City for which an Urban Design Plan has been adopted by the Planning Board in which special design criteria or other supplemental development requirements apply;
- _____ 12. The current zoning classification of the subject property;
- _____ 13. The zoning classification required for the proposed development;
- _____ 14. The existing land uses adjacent to the proposed project;
- _____ 15. Complete the attached "Zoning Requirements Analysis" chart;

Land Development Issues

- _____ 16. A Survey and Site Drainage Plan;
- _____ 17. Identify any sensitive soils on site that will require stabilization or alteration in order to support the proposed development;
- _____ 18. Whether or not the proposed development will occur on a steep slope, and if so, the measures that will be taken to overcome potential erosion, slope stability and runoff;

- _____ 19. The volume of excavated soils to be removed from the site and /or delivered to the site, and a map of the proposed haul routes;
- _____ 20. Identify the potential hazards and nuisances that may be created by the proposed development and the suggested methods of mitigating such hazards;

Private Utilities

- _____ 21. Indicate the source of all required private utilities to be provided;
- _____ 22. Provide verification that all required utility easements have been secured for necessary private utilities;

Noise Levels

- _____ 23. Provide a reading of existing ambient noise and estimated future noise levels on the site;
- _____ 24. Indicate whether the project will be exposed to or cause noise levels which exceed those levels prescribed in Chapter 50, Division 4, Section 50-71 through 50-77 of the Birmingham City Code, as amended;
- _____ 25. Indicate whether the site is appropriate for the proposed activities and facilities given the existing ambient noise and the estimated future noise levels of the site;

Air Quality

- _____ 26. Indicate whether the project is located in the vicinity of a monitoring station where air quality violations have been registered and, if so, provide information as to whether the project will increase air quality problems in the area;
- _____ 27. Indicate if the nature of the project or its potential users would be particularly sensitive to existing air pollution levels and, if so, indicate how the project has been designed to mitigate possible adverse effects;
- _____ 28. Indicate whether the proposal will establish a trend which, if continued, may lead to violation of air quality standards in the future;
- _____ 29. Indicate whether the proposed project will have parking facilities for more than 75 cars and indicate percentage of required parking that is proposed;

Environmental Design and Historic Values

- _____ 30. Indicate whether there will be demonstrable destruction or physical alteration of the natural or human-made environment on site or in the right-of-way (i.e. clearance of trees, substantial regrading etc.);
- _____ 31. Indicate whether there will be an intrusion of elements out of character or scale with the existing physical environment (i.e. significant changes in size, scale of building, floor levels, entrance patterns, height, materials, color or style from that of surrounding developments);
- _____ 32. Indicate all elements of the project that are eligible for LEED points if the building were to be LEED certified (i.e. extensive use of natural daylight, use of low VOC paint, use of renewable/recycled resources, energy efficient mechanical systems, use of wind and solar power, geothermal heating etc.);
- _____ 33. Indicate whether the proposed structure will block or degrade views, change the skyline or create a new focal point;
- _____ 34. Indicate whether there will be objectionable visual pollution introduced directly or indirectly due to loading docks, trash receptacles or parking, and indicate mitigation measures for same;
- _____ 35. Indicate whether there will be an interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment (i.e. vibration, dust, odor, heat, glare etc.);
- _____ 36. Indicate whether the project area and environs contain any properties listed on the National Register of Historic Places or the City's inventory of historic structures;
- _____ 37. Provide any information on the project area that the State Historic Preservation Office (SHPO) may have;

- _____ 38. Indicate whether there will be other properties within the boundaries or in the vicinity of the project that appear to be historic and thus require consultation with the SHPO as to eligibility for the National Register;
- _____ 39. Indicate whether the Department of the Interior has been requested to make a determination of eligibility on properties the SHPO or HDC deems eligible and affected by the project;
- _____ 40. Provide proof that the HDC has been given an opportunity to comment on properties that are listed on or have been found eligible for the National Register and which would be affected by the project;

Refuse

- _____ 41. Indicate whether the existing or planned solid waste disposal system will adequately service the proposed development including space for separation of recyclable materials;
- _____ 42. Indicate whether the design capacity of the existing or planned solid waste disposal system will be exceeded as a result of the project;

Sanitary Sewer

- _____ 43. Indicate whether existing or planned waste water systems will be able to adequately service the proposed development;
- _____ 44. Indicate whether the design capacity of these facilities will be exceeded as a result of the project;
- _____ 45. Indicate the elements of the project that have been incorporated to reduce the amount of water entering the sewer system (such as low flush toilets, EnergyStar appliances, restricted flow faucets, greywater recycling etc.);

Storm Sewer

- _____ 46. Indicate whether existing or planned storm water disposal and treatment systems will adequately serve the proposed development;
- _____ 47. Indicate whether the design capacity of these facilities will be exceeded as a result of the project;
- _____ 48. Indicate the elements of the project that have been incorporated to reduce the amount of storm water entering the sewer system (such as the use of pervious concrete, rain gardens, greywater recycling, green pavers etc.);

Water Service

- _____ 49. Indicate whether either the municipal water utility or on-site water supply system is adequate to serve the proposed project;
- _____ 50. Indicate whether the water quality is safe from both a chemical and bacteriological standpoint;
- _____ 51. Indicate whether the intended location of the service will be compatible with the location and elevation of the main;

Public Safety

- _____ 52. Whether or not the project location provides adequate access to police, fire and emergency medical services;
- _____ 53. Whether or not the proposed project design provides easy access for emergency vehicles and individuals (ie. are there obstacles to access, such as one-way roads, narrow bridges etc.);
- _____ 54. Whether or not there are plans for a security system which can be expanded, and whether approval for same has been granted by the police department;
- _____ 55. Detailed description of all fire access to the building, site, fire hydrants and water connections;
- _____ 56. Whether or not there are plans for adherence to all city and N.F.P.A. fire codes;

- _____ 57. Proof that one elevator has been designed to accommodate a medical cart;
- _____ 58. Detailed specifications on all fire lanes/parking lot surfaces/alleys/streets to demonstrate the ability to accommodate the weight of emergency / fire vehicles;
- _____ 59. Detailed description of all fire suppression systems;

Transportation issues

- _____ 60. Provide completed FORM A – Transportation Study Questionnaire (Abbreviated);
- _____ 61. Provide completed FORM B – Transportation Study Questionnaire if required by the city’s transportation consultant;
- _____ 62. Indicate whether transportation facilities and services will be adequate to meet the needs of all users (i.e. access to public transportation, bicycle accommodations, pedestrian connections, disabled, elderly etc.);
- _____ 63. Indicate how the project will improve the mobility of all groups by providing transportation choices;
- _____ 64. Indicate how the users of the building will be encouraged to use public transit and non-motorized forms of transportation;
- _____ 65. Indicate the elements that have been incorporated into the site and surrounding right-of-way to encourage mode shift away from private vehicle trips;
- _____ 66. Indicate the elements of the project that have been provided to improve the comfort and safety of cyclists (such as secured or covered bicycle parking, lockers, bike lanes/paths, bicycle share program etc.);
- _____ 67. Indicate the elements of the project that have been provided to improve the comfort and safety of pedestrians (such as wheelchair ramps, crosswalk markings, pedestrian activated signal lights, bulb outs, benches, landscaping, lighting etc.);
- _____ 68. Indicate the elements of the project that have been provided to encourage the use of sustainable transportation modes (such as receptacles for electric vehicle charging, parking for scooters/Smart cars etc.);

Natural Features

- _____ 69. Indicate whether there are any visual indicators of pond and / or stream water quality problems on or near the site;
- _____ 70. Indicate whether the project will involve any increase in impervious surface area and, if so, indicate the runoff control measures that will be undertaken;
- _____ 71. Indicate whether the project will affect surface water flows on water levels of ponds or other water bodies;
- _____ 72. Indicate whether the project may affect or be affected by a wetland, flood plain, or floodway;
- _____ 73. Indicate whether the project location or construction will adversely impact unique natural features on or near the site;
- _____ 74. Indicate whether the project will either destroy or isolate a unique natural feature from public access;
- _____ 75. Indicate whether any unique natural feature will pose safety hazards for the proposed development;
- _____ 76. Indicate whether the project will damage or destroy existing wildlife habitats; and

Other Information

- _____ 77. Any other information as may reasonably be required by the City to assure an adequate analysis of all existing and proposed site features and conditions.

Professional Qualifications

The preparer(s) of the CIS must indicate their professional qualifications, which must include registration in the state of Michigan in their profession where licensing is a state requirement for the practice of the profession (i.e. engineer, surveyor, architect etc.). Where the state does not require licensing (ie. planner, urban designer, economist etc.), the

preparer must demonstrate acceptable credentials including, but not limited to, membership in professional societies, university degrees, documentation illustrating professional experience in preparing CIS related materials for similar projects.



ZONING REQUIREMENTS ANALYSIS

Development Standard	Required	Proposed	Variance Required
Zoning Classification			
Front Setback			
Rear Setback			
Side Setback			
FAR - Percentage			
FAR – Square Footage			
Open Space – Percentage			
Open Space – Square Footage			
Number of Residential Units			
Minimum Floor Area			
Maximum Height			
Parking			
Loading			
Screening			

Section 2

CIS Checklist Supplemental Information

Section 2

CIS Checklist Supplemental Information

BROWN STREET MIXED-USE

Birmingham, MI 48009

Combined CIS & Site Plan Review Application

Planning Division

GENERAL INFORMATION:

1. Name and address of applicant and proof of ownership

**Boji Group
255 S. Old Woodward Ave, Suite 310
Birmingham, MI 48009
(248) 646-3151**

**The land parcel in the proposed development is owned by Trott Properties 294, LLC.
Refer to Appendix 3.1 for Consent of Property Owner form and Proof of Ownership.**

2. Name of Development

Brown Street Mixed-Use

3. Address of site and legal description of the real estate

**294 E Brown Street
Birmingham, MI 48009**

(Refer to Survey for Legal Description)

4. Name and address of the surveyor

**Nowak & Fraus Engineers
46777 Woodward Ave.
Pontiac, MI 48342
(248) 332-7931**

5. Legend and notes, including a graphic scale, north point, and date

See Site Plan

6. A separate location map

See location map in Appendix 3.2.

7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land

Refer to zoning map provided in Appendix 3.2.

8. Details of all proposed site plan changes

Refer to Preliminary Site Plan Review drawings.

PLANNING AND ZONING ISSUES:

9. Recommended land use of the subject property as designated on the future land use map of the city's master plan

Zoned D-3

10. Goals and objectives of the city's master plan that demonstrate the city's support of the proposed development

The Downtown Birmingham 2016 Plan (1996): Recommended land use for this parcel is D-3 Flexible Use (appendix F-2, page 94). Brown and Old Woodward is identified as a general redevelopment area in the 2016 Plan as Redevelopment Site II (Page 105, Appendix G-1). The Master Plan encourages more concentrated retail, restaurant, and other service development along Brown and Daines in order to provide both a southern anchor to the CBD and a better pedestrian linkage to the South Woodward Area (Page 39). The proposed development meets the goals and objectives of the current master plan. In addition, The Birmingham Plan Draft #2 (11/05/2021) identifies this site in the Future Land Use Map as a High Intensity use in the Mixed-Use District Fabric.

11. Whether or not the project site is located within an area of the city for which an Urban Design Plan has been adopted by the Planning Board in which special design criteria or other supplemental development requirements apply

The proposed project is within the Downtown Overlay Zoning.

12. The current zoning classification of the subject property

The current zoning classification for the subject property is D-3 in the Downtown Overlay Zoning.

13. The zoning classification required for the proposed development

The zoning classification required for the proposed development is D-3 in the Downtown Overlay Zoning.

14. The existing land uses adjacent to the proposed project

North: 5-story hotel building & 3-story Mixed-Use Building, zoned D-4 overlay zoning

South: 3-story office building, zoned D-3 overlay zoning

East: 1-story retail & office buildings, zoned D-4 overlay zoning

West: 4-story office building, zoned D-4 overlay zoning

15. Complete the attached "Zoning Requirements Analysis" chart

Refer to Section 1 for Zoning Requirements Analysis.

LAND DEVELOPMENT ISSUES

16. A survey and site drainage plan

(See Civil Engineering drawings) Refer to the enclosed survey of the site.

17. Identify any sensitive soils on the site that will require stabilization or alteration in order to support the proposed development

Refer to the Environmental Soil Profiles and Geotechnical Investigation in Appendix 3.6.

18. Whether or not the proposed development will occur on a steep slope, and if so, the measures that will be taken to overcome potential erosion, slope stability and runoff

The proposed development does not occur on a steep slope. There is very little grade change on the parcels. However, during construction of the development, care will be taken to prevent any sediment laden soils from leaving the site and to stabilize any steep slopes by employing soil erosion best management techniques.

19. The volume of excavated soils to be removed from the site and/or delivered to the site, and a map of the proposed haul routes.

The volume of excavated soils is estimated to be 15,000 cubic yards. Refer to Appendix 3.9 for proposed haul route.

20. Identify the potential hazards and nuisances that may be created by the proposed development and the suggested methods of mitigating such hazards

Pedestrian and traffic control which will be clearly marked and identified with either jersey barriers, fencing, signage, street and sidewalk closures clearly identified, etc. Signage at the gates clearly noting areas as “do not enter”, etc. Misc. noise nuisances that may occur are demo of the existing structures, starting of large equipment, safety back-up alarms, and heavy machinery. Dust mitigation and track out clean-up will be accomplished with water spray guns and sweepers.

PRIVATE UTILITIES

21. Indicate the source of all required private utilities to be provided

Refer to Civil Engineering Drawings.

22. Provide verification that all required utility easements have been secured for necessary private utilities

It is unlikely that easements for private utility services will be required as all existing services and leads will be within the public right-of-way.

NOISE LEVELS

23. Provide a reading of existing ambient noise and estimated future noise levels on the site.

Refer to the Noise Impact Study completed by Kolano and Saha Engineers, Inc. in Appendix 3.3.

24. Indicate whether the project will be exposed to or cause noise levels which exceed those levels prescribed in Chapter 50, Division 4, Section 50-71 through 50-77 of the Birmingham City Code, as amended

Refer to the Noise Impact Study completed by Kolano and Saha Engineers, Inc. in Appendix 3.3.

25. Indicate whether the site is appropriate for the proposed activities and facilities given the existing ambient noise and the estimated future noise levels of the site

Refer to the Noise Impact Study completed by Kolano and Saha Engineers, Inc. in Appendix 3.3.

AIR QUALITY

26. Indicate whether the project is located in the vicinity of a monitoring station where air quality violations have been registered and, if so. Provide information as to whether the project will increase air quality problems in the area

This development is located within the Southeast Air Quality District and the closest monitoring stations are located in Oak Park and Pontiac. Current ambient air quality standards are below the minimum standards from the EPA (Refer to air quality information in Appendix 3.7).

27. Indicate if the nature of the project or its potential users would be particularly sensitive to existing air pollution levels and, if so, indicate how the project has been designed to mitigate possible adverse effects

This development is consistent with similar downtown Birmingham building types and uses. Newer buildings are built with cleaner, more sustainable materials and equipment, which should mitigate some of these effects.

28. Indicate whether the proposal will establish a trend which, if continued, may lead to violation of air quality standards in the future

This development will not establish any trends pertaining to air quality standards, though there will be some additional pollution from the additional density of the built environment, which would be the case of any development.

29. Indicate whether the proposed project will have parking facilities for more than 75 cars and indicate percentage of required parking that is proposed

The proposed development will have one level of below grade parking that will hold holds 59 cars. There is no percentage of required parking for the commercial uses because the proposed project is within the parking assessment district. For the residential apartments there are 1.25 spaces required per unit. The total required parking is 48 spaces (38 units x 1.25 spaces).

ENVIRONMENTAL DESIGN AND HISTORIC VALUES

30. Indicate whether there will be demonstrable destruction or physical alteration of the natural or human-made environment on site or in the right-of-way (i.e. Clearance of trees, substantial regrading etc.)

The existing structure will be demolished, along with the surface lot to make way for the proposed building. There are very few trees currently on these sites. The proposed development will greatly enhance the built environment with new trees, landscaping, and walks.

31. Indicate whether there will be an intrusion of elements out of character or scale with the existing physical environment (i.e. Significant changes in size, scale of building, floor levels, entrance patterns, height materials, color or style from that of surrounding developments)

The proposed buildings are similar in size, scale, and materiality to the existing neighboring buildings. The overall development brings density and activity to an underutilized site.

32. Indicate all elements of the project that are eligible for LEED points if the building were to be LEED certified (i.e. Extensive use of natural daylight, use of low VOC paint, use of renewable/recycled resources, energy efficient mechanical systems, use of wind and solar power, geothermal heating etc.)

Not Applicable

33. Indicate whether the proposed structure will block or degrade views, change the skyline or create a new focal point

The proposed building will not block or degrade views, as there has been thoughtful consideration to the adjacent properties, to enhance the overall area. The proposed development would lead to an increase in activity and would create a new area of focus on an underutilized site.

34. Indicate whether there will be objectionable visual pollution introduced indirectly due to loading docks, trash receptacles or parking, and indicate mitigation measures for same;

There will not be objectionable visual pollution, as we are improving views to and from the site. Access to loading will be located off Daines Street and the parking ramp will be off Brown Street. Trash receptacles will be inside the building and hidden from view. Since there is no surface parking, parking aesthetics will be greatly improved by the proposed development.

35. Indicate whether there will be an interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment (i.e. Vibration, dust, odor, heat, glare, etc.)

There will be no interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment.

36. Indicate whether the project area and environs contain any properties listed on the National Register of Historic Places or the city's inventory of historic structures

The project area is not listed on the National Register of Historic Places or the City's inventory of historic structures.

37. Provide any information on the project area that the State Historic Preservation Office (SHPO) may have.

This office is not aware of the subject property appearing on the state registered historic properties.

38. Indicate whether there will be other properties within the boundaries or in the vicinity of the project that appear to be historic and thus require consultation with the SHPO as to eligibility for the National Register

No historic properties are directly adjacent to the site. The closest historic properties are 325 S. Old Woodward Ave (across S. Old Woodward Ave), 211 S. Old Woodward Ave, and 220 E. Merrill Street.

39. Indicate whether the Department of the Interior has been requested to make a determination of eligibility on properties the SHPO or HDC deems eligible and affected by the project

There is no indication that the Department of the Interior has been requested to make a determination of the historic value of the surrounding properties.

40. Provide proof that the HDC has been given an opportunity to comment on properties that are listed on or have been found eligible for the National Register and which would be affected by the project.

N/A

REFUSE

41. Indicate whether the existing or planned solid waste disposal system will adequately service the proposed development including space for separation of recyclable materials.

There will be an air-conditioned refuse area on the first floor off the loading dock that will have adequate space for separation of recyclable materials. In addition, the chute system will either have a separate chute dedicated to recycling materials or a diverter that diverts the waste materials or recycling materials to the correct bin below based upon the selection that was made at the floor level. Either solution provides an easy method for sorting recyclables out of the waste stream. The refuse will be removed for daily scheduled pick-up.

42. Indicate whether the design capacity of the existing or planned solid waste disposal system will be exceeded as a result of the project

Solid waste generated from this development will be normal and can be handled via standard practices by local waste management.

SANITARY SEWER

43. Indicate whether existing or planned wastewater systems will be able to adequately service the proposed development

Public gravity sanitary sewer exists within the Brown Street right-of-way along the frontage of the proposed development. It is anticipated that the existing sanitary sewer will have the capacity to adequately service the proposed development. Per preliminary meetings and correspondence with the City, the existing sewer along the frontage of the property has the capacity to handle the flows from the proposed development. The planned sewer service flow basis of design and capacity of the existing sewer will be reviewed and confirmed by the City Engineer prior to final site plan approvals.

44. Indicate whether the design capacity of the facilities will be exceeded as a result of the project

It is not anticipated that the design capacity of the existing sanitary sewer will be exceeded by the development. Per preliminary meetings and correspondence with the City, the existing sewer along the property has the capacity to handle the flows from the proposed development. The planned sewer service flow basis of design and capacity of the existing sewer will be reviewed and confirmed by the City Engineer prior to final site plan approvals.

45. Indicate the elements of the project that have been incorporated to reduce the amount of water entering the sewer system (such as low flush toilets, Energy Star appliances, restricted flow faucets, greywater recycling etc.)

Low-flush toilets, restricted flow faucets, and greywater recycling may be incorporated to reduce the amount of water entering the sewer system.

STORM SEWER

46. Indicate whether existing or planned storm water disposal and treatment systems will adequately serve the proposed development

In existing conditions, .758 acres of the site (which is currently fully developed) drains via a storm sewer conveyance pipe network. No stormwater treatment measures are incorporated into the existing drainage system. The planned storm water management design will be reviewed and confirmed by the City Engineer prior to final site plan approvals.

47. Indicate whether the design capacity of the facilities will be exceeded as a result of the project

It is not anticipated that the design capacity of the existing municipal storm sewer systems in the area will be exceeded or adversely affected by the runoff from the proposed development. In proposed conditions, no additional runoff will be directed to drain to the municipal storm sewer system along Brown Steet. Therefore, drainage from the site will not adversely affect the municipal system. The proposed pipe conveyance system will be designed to handle a 10-year design frequency storm in accordance with City standards.

48. Indicate the elements of the project that have been incorporated to reduce the amount of storm water entering the sewer system (such as the use of pervious concrete, rain gardens, greywater recycling, green pavers etc.)

In proposed conditions, the amount of impervious area will be reduced due to landscaping and roof terraces/gardens, thus reducing the overall amount of storm water entering the municipal storm systems.

WATER SERVICE

49. Indicate whether either the municipal water utility or on-site water supply system is adequate to serve the proposed project

A Public 12-inch water main exists within the E. Brown Street right-of-way along the frontage of the proposed development and a Public 8-inch water main exists within the Daines Street right-of-way. Per preliminary meetings and correspondence with the City, the existing water mains should have the capacity to service the proposed building types. The planned water usage design and capacity of the existing water main will be reviewed and confirmed by the City Engineer prior to final site plan approvals.

50. Indicate whether the water quality is safe from both a chemical and bacteriologist standpoint

It is not anticipated that the water quality of the existing water main supply system is unsafe. The proposed water main will need to be field tested from both a chemical and bacteriological standpoint, in accordance with State and City standards, prior to making the connections to the existing water network and placing the proposed water main in service.

51. Indicate whether intended location of the service will be compatible with the location and elevation of the main

The proposed water supply design is compatible with the existing system and will not require rerouting, significant alterations, or modifications.

PUBLIC SAFETY

52. Whether or not the project location provides adequate access to police, fire and emergency medical services

The proposed development offers direct access for emergency personnel from multiple access points (E. Brown Street and Daines Street).

53. Whether or not the proposed project design provides easy access for emergency vehicles and individuals (ie. Are there obstacles to access, such as one-way roads, narrow bridges etc.)

E. Brown Street and Daines Street provide easy access for emergency vehicles and individuals.

54. Whether or not there are any plans for a security system which can be expanded, and whether approval for same has been granted by the police department.

Future tenants will likely have a security system per the tenant's requirements. It is the responsibility of the tenant to submit plans to the police department for approval.

55. Detailed description of all fire access to the building, site, fire hydrants and water connections

Refer to Civil Engineering Drawings.

56. Whether or not there are plans for adherence to all city and N.F.P.A. fire codes

All code requirements will be met.

57. Proof that one elevator has been designed to accommodate a medical cart

The proposed building will have one elevator that will accommodate a medical cart.

58. Detailed specifications on all fire lanes/parking lot surfaces/alleys/streets to demonstrate the ability to accommodate the weight of emergency/ fire vehicles

Refer to Civil Engineering Drawings.

59. Detailed description of all fire suppression systems

Full fire suppression system and/or standpipe, Siamese FDC, and knox box will be provided where required. Fire suppression drawings will be based on a performance specification. Drawings will be issued for the building with requirements for a design-build fire suppression contractor to submit full working plans and specifications for review which will then be submitted for approval prior to construction.

TRANSPORTATION ISSUES

60. Provide completed FORM A-Transportation Study Questionnaire (Abbreviated)

Refer to the Traffic Impact Study by ROWE Professional Services Company in Appendix 3.4.

61. Provide completed FORM B- Transportation Study Questionnaire if required by the city's transportation consultant

Refer to the Traffic Impact Study by ROWE Professional Services Company in Appendix 3.4.

62. Indicate whether transportation facilities and services will be adequate to meet the needs of all users (i.e. access to public transportation bicycle accommodations, pedestrian connections, disabled, elderly etc.)

There are two SMART bus stops (#1652 & 705) located on S. Old Woodward Avenue between Brown Street and E. Frank Street within close proximity to the proposed building. Pedestrian connectivity will be improved with new streetscape elements.

63. Indicate how the project will improve the mobility of all groups by providing transportation choices

The proposed development can be easily accessed on two street fronts by vehicle, bicycle, or pedestrian traffic.

64. Indicate how the users of the building will be encouraged to use the public transit and non-motorized forms of transportation

There are two SMART bus stops within 400 feet of the site. The new sidewalks and streetscape elements are designed for pedestrian connectivity. New bike racks will be added to the existing streetscape around the project development.

65. Indicate the elements that have been incorporated into the site and surrounding right of way to encourage mode shift away from private vehicle trips

There is a SMART bus stop within 400 feet of the site. New bike racks will be added to the existing streetscape around the project development.

66. Indicate the elements of the project that have been provided to improve the comfort and safety cyclists (such as secured or covered bicycle parking, lockers, bike lanes/paths, bicycle share program etc.)

New bike racks will be added at the existing streetscape around the project development., in addition to illumination along walks and entries for safety and security.

67. Indicate the elements of the project that have been provided to improve the comfort and safety of pedestrians (such as wheelchair ramps, crosswalk markings, pedestrian activated signal lights, bulb out, benches, landscaping, lighting etc.)

There are markings on crosswalks. In addition, there are streetlights, benches, and landscape located along the sidewalks throughout the development. Building entrances would be at grade.

68. Indicate the elements of the project that have been provided to encourage the use of sustainable transportation modes (such as receptacles for electric vehicle charging, parking for scooters/smart cars etc.)

There will be electric vehicle charging in the below grade parking structure, along with parking for compact cars. New bike racks will be added around the development. In addition, it is walkable from the surrounding areas.

NATURAL FEATURES

69. Indicate whether there any visual indicators of pond and/or stream water quality problems on or near the site

No water quality issues are known to exist.

70. Indicate whether the project will invoke any increase in impervious surface area and, if so, indicate the runoff control measures that will be undertaken.

The project proposes to decrease the impervious area of the existing site, thus runoff peak discharge rate and discharge volumes are expected to be reduced in proposed conditions.

71. Indicate whether the project will affect surface water flows or water levels of ponds or other water bodies

Effects to the surface water levels of water bodies in the area are not anticipated.

72. Indicate whether the project may affect or be affected by a wetland, flood plain, or floodway

The property does not lie within a special flood hazard area as defined by the Federal Emergency Management Agency; The property lies within Zone X of the Flood Insurance Rate Map identified as Map No. 26125C0537F bearing an effective 9/29/2006.

73. Indicate whether the project location or construction will adversely impact unique natural features on or near the site

It is not anticipated that the project location or construction will adversely impact unique natural features on or near the site. It is the intent to enhance the site through the proposed development.

74. Indicate whether the project will either destroy or isolate a unique natural feature from public access

It is not anticipated the development will destroy or isolate any unique natural feature from public access.

75. Indicate whether any unique natural feature will pose safety hazards for the proposed development

It is not anticipated that any existing natural feature will pose safety hazards for the proposed development.

76. Indicate whether the project will damage or destroy existing wildlife habitats

The existing site is urban land and it is not anticipated that the proposed project will destroy any existing wildlife or habitats.

OTHER INFORMATION

77. Any other information as may reasonably be required by the city to assure an adequate analysis of all existing and proposed site features and conditions

Our team will provide any additional information that the city requests during the site plan review process.

PROFESSIONAL QUALIFICATIONS

The preparer(s) of the CIS must indicate their professional qualifications, which must include registration in the state of Michigan in their profession where licensing is a state requirement for the practice of the profession (i.e. engineer, surveyor, architect etc.). Where the state does not require licensing (i.e. planner, urban designer, economist etc.), the preparer must demonstrate acceptable credentials including, but not limited to, membership in professional societies, university degrees, documentation illustrating professional experience in preparing CIS related materials for similar projects.

Preparer: Victor Saroki, FAIA. State of Michigan Architectural Registration no. 1301030354.

Section 3

Appendix

Section 3	Appendix
3.1	Proof of Ownership
	Consent of Property Owner
	Warranty Deed
3.2	Maps
	Zoning Map
	Location Map
3.3	Noise Impact Study
3.4	Traffic Impact Study
3.5	Phase I Environmental Site Assessment
3.6	Geotechnical Investigation
3.7	Air Quality Information
3.8	Site Photographs
3.9	Site Logistics
	Preliminary Haul Routes Map
4.0	Mechanical Equipment Specifications

Section 3.1

Proof of Ownership




CONSENT OF PROPERTY OWNER

I, TROTT PROPERTIES 294, LLC, OF THE STATE OF MICHIGAN AND
(Name of Property Owner)
COUNTY OF OAKLAND STATE THE FOLLOWING:

1. That I am the owner of real estate located at 294 E BROWN STREET;
(Address of Affected Property)
2. That I have read and examined the Application for Combined CIS & Site Plan Review made to the City of
Birmingham by: Boji Group;
(Name of Applicant)
3. That I have no objections to, and consent to the request(s) described in the Application made to the City of
Birmingham.

Name of Owner (Printed): TROTT PROPERTIES 294, LLC

Signature of Owner:  Date: 12/29/2021

OAKLAND COUNTY TREASURERS CERTIFICATE
THEREBY CERTIFY that there are no TAX LIENS or TITLES
held by the state or any individual against the within description
and all TAXES on same are paid for five years previous to the
date of this instrument as appears by the records in the office
except as stated.

JAN 12 2010

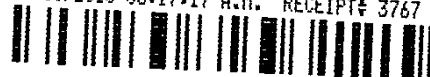
ANDREW E. MEISNER, County Treasurer
Sec. 135, Act 206, 1893 as amended

1.00

000525

LIBER 41771 PG 326

7760
LIBER 41771 PAGE 326
\$19.00 DEED - COMBINED
\$4.00 REMONUMENTATION
01/15/2010 08:17:17 A.M. RECEIPT# 3767

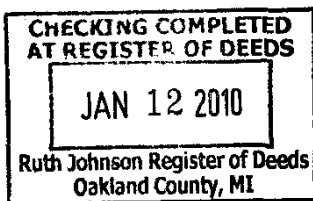
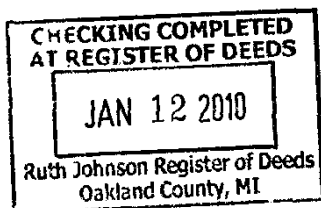


PAID RECORDED - OAKLAND COUNTY
RUTH JOHNSON, CLERK/REGISTER OF DEEDS

WARRANTY DEED

The Grantor, **DDJ - BIRMINGHAM, LLC**, a Delaware limited liability company
("Grantor"),
whose address is 1148 Alpine Road, Walnut Creek, CA 94596,
Conveys and Warrants to **TROTT PROPERTIES 294, LLC**, a Michigan limited liability company
("Grantee"),
whose address is 31440 Northwestern Highway, Farmington Hills, MI 48334,
the premises situated in the City of Birmingham, County of Oakland, State of Michigan, described in
Exhibit A attached hereto and incorporated herein by reference, together with all and singular tenements,
hereditaments, improvements, appurtenances and easements benefiting the said premises, for the sum of
Ten Dollars (\$10.00) and other good and valuable consideration (see Real Estate Transfer Tax Valuation
Affidavit), the receipt and sufficiency of which are hereby acknowledged, subject only to those matters
described in Exhibit B attached hereto and incorporated herein by reference.
Grantor grants Grantee the right to make all permitted divisions under Section 108 of the Land Divisions
Act, Act No. 288 of the Public Acts of 1967.

Dated as of December 30, 2009.



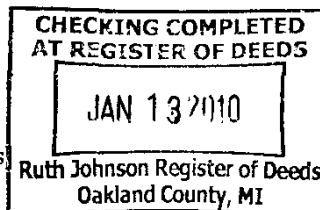
GRANTOR:

DDJ - BIRMINGHAM, LLC,
a Delaware limited liability company

By: 

Robert Dailey, Managing Member

[Notary Page Follows]



RECEIVED
OAKLAND COUNTY
REGISTER OF DEEDS
2010 JAN 12 PM 12:34

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ST

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O.K. - A.N.

1840717

REVERSE TO BE AFFIXED AFTER RECORDING

JAN - 7 2010

4/23

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Contra Costa }On 12/29/09 before me, Christine M. Johnson Notary Public
Date Here Insert Name and Title of the Officer
personally appeared Robert Dailey
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal Above

Signature

Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached DocumentTitle or Type of Document: Warranty DeedDocument Date: - Number of Pages: -Signer(s) Other Than Named Above: -**Capacity(ies) Claimed by Signer(s)**Signer's Name: Robert Dailey

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator

☒ Other: managing member

Signer Is Representing: _____

RIGHT THUMBPRINT
OF SIGNER

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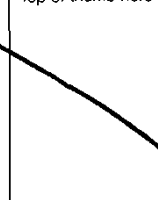
Signer's Name: _____

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

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OF SIGNER

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LIBER 41771 PG 328

EXHIBIT A
Legal Description

The land referred to in this document is described as follows:

Land in the City of Birmingham, County of Oakland, State of Michigan, to-wit:

City of Birmingham

Tax Rolls Description:

The Northeasterly 1/2 of Lot 11 and the Southwesterly 1/2 of Lot 12, Brown's Addition, as recorded in Liber 3, Page 8 of Plats, Oakland County Records, also Lot 15 and the Northeasterly 1/2 of Lot 16 of Brown's Addition No. 1, as recorded in Liber 3, Page 8, Oakland County Records, also all of vacated Ann Street adjacent to the same.

Record Description:

Parcel 1:

The East 1/2 of Lot 11, Brown's Addition to the City of Birmingham and the East 1/2 of Lot 16 of Brown's Addition No. 1, in the City of Birmingham, Oakland County, Michigan, as recorded in Liber 3 of Plats, Page 8, Oakland County Records, including the vacated West 20 feet of Ann Street adjoining Lot 11 and the vacated West 19 feet of Ann Street adjoining Lot 16.

Parcel II:

The West 1/2 of Lot 12 of Brown's Addition to the Village (now City) of Birmingham, of part of the West 1/2 of the Northeast 1/4 of Section 36, Town 2 North, Range 10 East, Township of Bloomfield (now City of Birmingham), Oakland County, Michigan, as recorded in Liber 3, Page 8 of Plats, Oakland County Records; also Lot 15, Addition to William Brown's Addition No. 1, being a part of the West 1/2 of the Northeast 1/4 of Section 36, Town 2 North, Range 10 East, according to the plat thereof as recorded in Liber 3, Page 8 of Plats, Oakland County Records, including vacated 20 feet of Ann Street, adjoining the Westerly side of Lot 12 and vacated 21 feet of Ann Street adjoining the Westerly side of Lot 15.

More commonly known as: 294 East Brown Street, Birmingham, MI

Tax Item No. 19-36-204-021

LIBER 41771 PG 29

EXHIBIT B

Permitted Exceptions

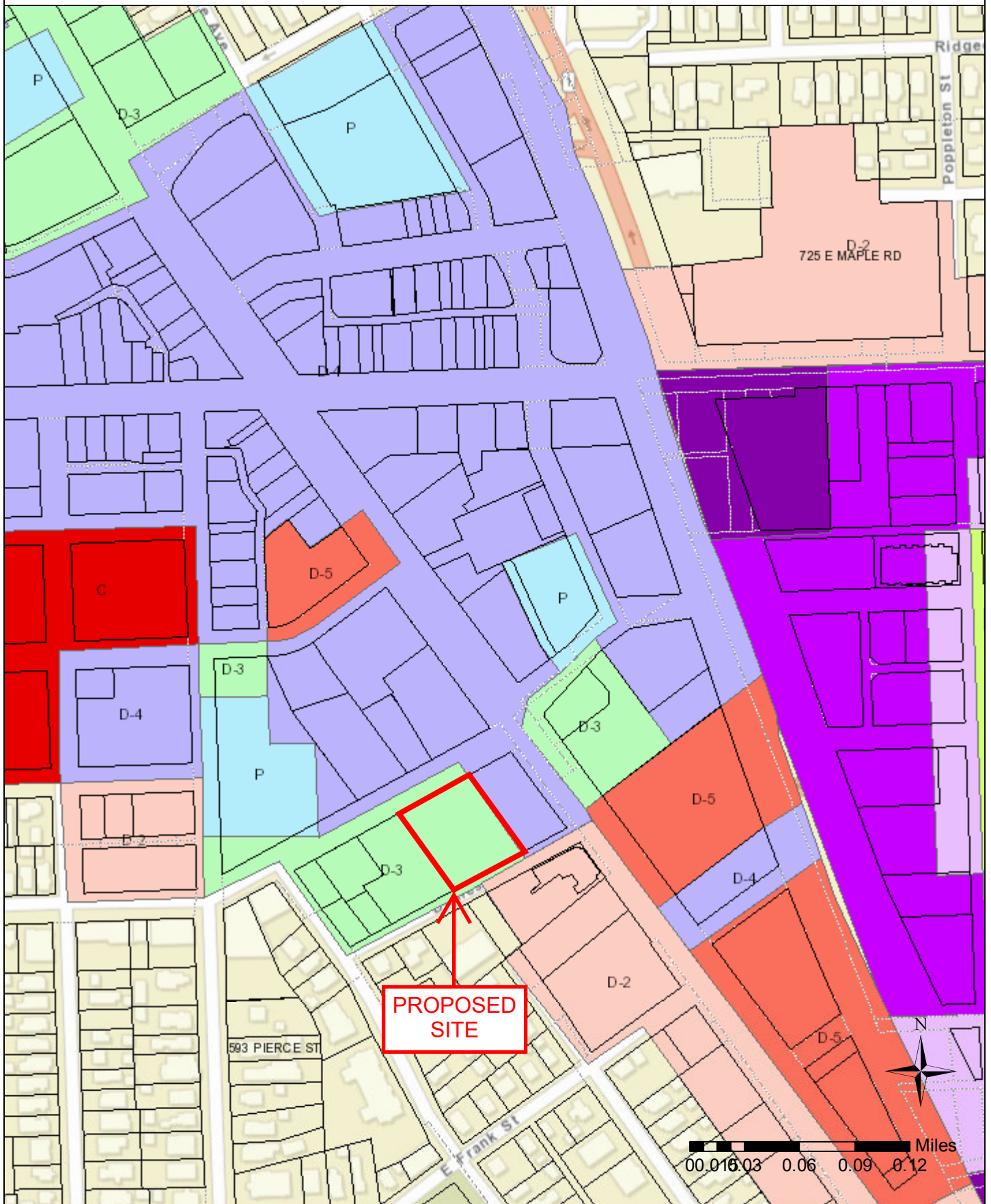
1. Liens for real estate taxes which are not yet due and payable.
2. Terms of the Resolution of the Birmingham City Commission recorded in Liber 21398, Page 287, Oakland County Records, vacating the remaining 10 foot portion of Ann Street and the 40 foot wide easement between Brown and Daines Streets.

Return to:
Trott Properties 294, LLC.
31440 Northwestern Highway
Farmington Hills, MI 48334

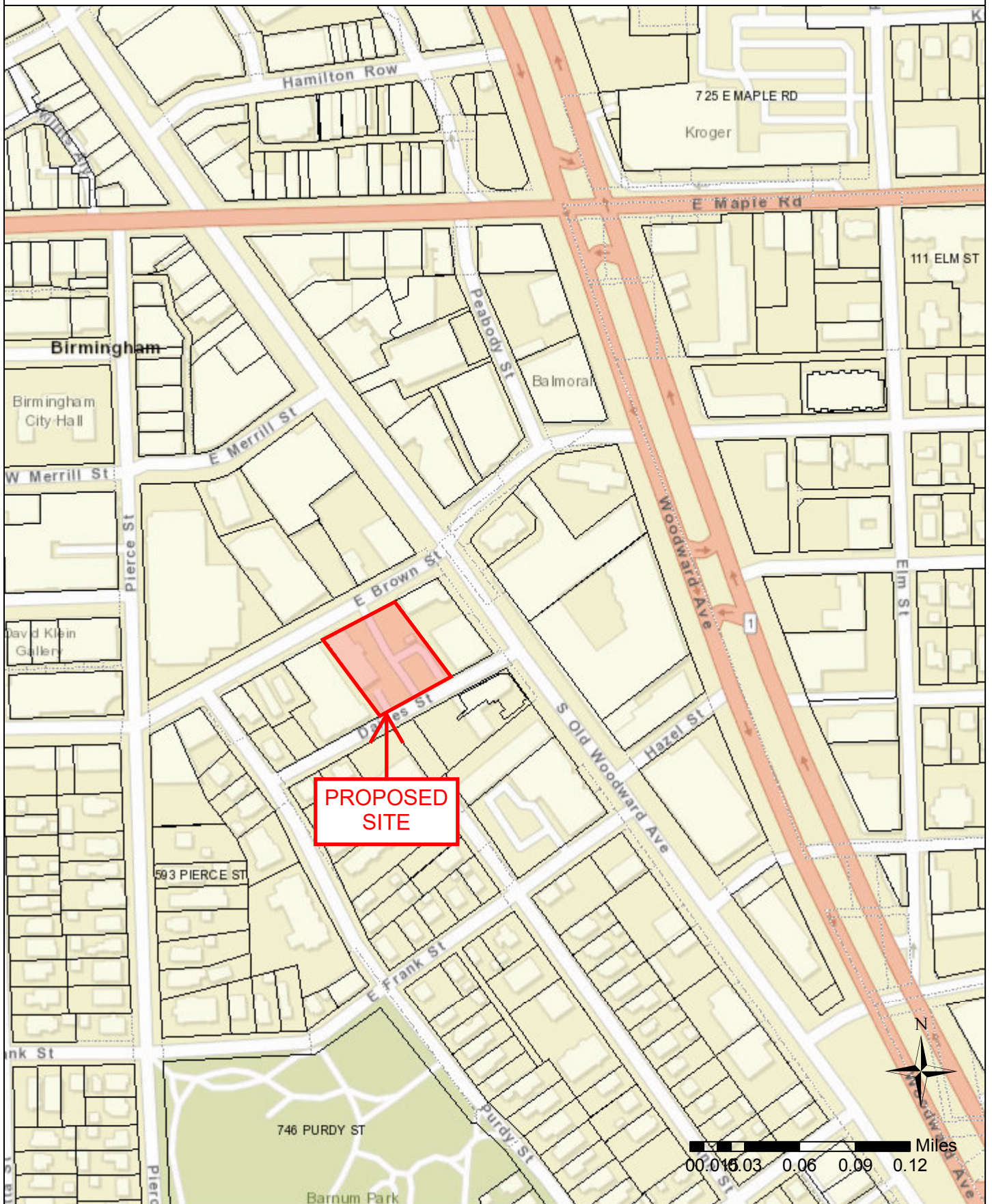
Section 3.2

Maps

Zoning Map



Location Map



Section 3.3

Noise Impact Study



2021-147
September 22, 2021

Mr. Alexander Saroki, AIA, NCARB
Saroki Architecture
430 N. Old Woodward Ave.
Birmingham, MI 48009

Subject: **Birmingham CIS - Sound Level Measurements and Noise Impact Assessment**
re: Brown Street Mixed-Use Development
Birmingham, MI

Mr. Saroki:

At your request and authorization, Kolano and Saha Engineers, Inc. (K&SE) conducted an investigation to evaluate the environmental noise associated with the proposed Brown Street Mixed-Use development. This investigation includes a review of the measurements at the development site to understand the current ambient noise condition with an evaluation of the proposed development to help assess if noise associated with this development will be compatible at this location.

On-Site Sound Level Measurements

We conducted measurements using a Brüel & Kjær 2270 environmental noise analyzer with a precision outdoor microphone assembly. This instrumentation was calibrated before and after measurements using an acoustic calibrator traceable to the National Institute for Standards and Technology.

Measurements were conducted near the proposed site for a 24-hour period to capture the existing ambient sound levels. Measurements were conducted on the proposed Brown Street Mixed-Use development site, at a location 70-feet south of E. Brown Street and 170-feet west of Old Woodward Avenue. Details of this measurement position are provided in **Exhibit 1**.

The measurement equipment captured sound levels for a continuous 24-hour period on Sept. 15, 2021. The measurement results are provided in **Exhibit 2**. The results of the measurements are presented in a graph of sound level versus time. These graphs contain three plot lines; the 5-minute L_{eq} (energy average level), the hourly L_{eq} and the daytime and nighttime averaged sound levels.

From this data we calculated the DNL or day-night sound level average. The DNL is an average of both the daytime and nighttime sound levels where the nighttime sound levels have been raised by 10 dB to account for people's greater sensitivity to noise in the nighttime hours. Measurement results, in terms of the day-night sound level average (DNL), were determined and compared to U.S. Government guidelines promulgated by the U.S. Environmental Protection Agency (EPA) and the department of Housing and Urban Development (HUD). EPA guidelines define DNL 55dB (or less) as a desirable goal for residential land use; HUD guidelines consider outdoor noise levels up to DNL 65dB as "normally acceptable" for residential land use. HUD

guidelines consider outdoor noise levels between 65dB and 75dB as “normally unacceptable” for residential land use. For the Brown Street Mixed-Use development, we measured a site sound level of **61dB(A) DNL**.

The ambient noise at this location, which is essentially near the center of the site, falls within the “normally acceptable” range. Generally, traffic noise in this area is relatively low when compared to other locations in Birmingham.

City of Birmingham Noise Ordinance

The City of Birmingham addresses noise in their ordinance under *Part II – City Code, Chapter 50 – Environment, Article II. Nuisances, Division 4 – Noise*. This ordinance provides information of definitions, general prohibitions, specific prohibitions, decibel level prohibitions, general exemptions and test procedures.

The objective limits cited in this ordinance (as Table 1) are:

Use of Property Producing the Sound	Use of Property Receiving the Sound	Sunday to Saturday 7:00 a.m. to 7:00 p.m.	Sunday to Saturday 7:00 p.m. to 7:00 a.m.
Residential	Residential	75	60
Commercial	Residential	80	60
Residential	Commercial	80	60
Commercial	Commercial	90	75

Exemptions to these limits include power equipment operations between 7AM and 7PM that do not exceed 100 dB(A) at or beyond the property line, construction noise between 7AM and 7PM Monday-Saturday excluding holidays (with additional provisions), and snow removal which does not exceed 90 dB(A) at or beyond the property line.

The properties adjacent to this development are other mixed-use type buildings containing retail, office, and residential uses. The noise associated with the development is expected to be similar to other buildings in the area.

Proposed Development Noise Impact

The proposed mixed-use building is generally similar to other buildings in Birmingham. The proposed 4-story building (+ roof level recreation space) is expected to have retail, office, fitness, lobby, and receiving on the ground level floor. The second floor is planned to be office space. The third and fourth floors are planned to be residential. At this preliminary stage of development, the details for mechanical systems, which are the primary sources of noise

expected for this development, are not yet established. The sources of noise expected from the building include the following:

Building Wide & Individual Unit Heating and Cooling Mechanical Systems

Like other large buildings in Birmingham, centralized roof mounted heating and cooling equipment are expected to control the climate of building areas separate from individual residential units. If located sufficiently away from the property lines and shielded with screen walls, these elements are not expected to exceed the ordinance limits.

Emergency Power Generator

Currently, the location for an emergency power generator is unknown. With other buildings and properties nearby, careful consideration of location and noise control elements (enclosure and engine exhaust silencing) will be critical to ensure noise from this equipment does not adversely impact adjacent properties. Deliberate noise control designs will be needed for successful compliance of ordinance requirements.

Sub-Terranean Parking

A lower-level parking garage is currently planned for the Brown Street Mixed-Use development. This lower-level parking will require significant ventilation to remove vehicle exhaust gasses. Careful selection of ventilation fans, possibly a centrifugal or mixed flow, with appropriate noise control elements is recommended to help keep pedestrians on these parking levels safe (to be able to hear approaching vehicles) as well to comply with the noise ordinance for above-grade air intakes and discharges. The adjacent buildings are relatively close and will act like a canyon to reflect sources of sound within this space to other areas nearby. Silencing the intake and/or the exhaust vent shafts/ducts of the parking deck may be necessary.

Building Services

Deliveries to the Brown Street Mixed-Use development building are expected to be similar to other multi-use buildings in the city and therefore the noise from this activity is not expected to be imposing. Additionally, garbage collection can be an annoying source of noise. Design considerations for both deliveries and garbage collection activities should take into account the potential noise impact to neighboring buildings, particularly those with residential spaces.

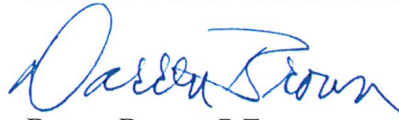
Conclusion

Based on the information we have been provided, we anticipate that the proposed development can be designed to meet the City of Birmingham ordinance noise limits. Additionally, the existing measured site sound levels do not exceed 65 DNL and are in the range of the “normally acceptable” noise level guidelines promulgated for residential land use by the U.S. Department of HUD.

Should there be any questions or need for additional assistance on this development, don't hesitate to contact us.

Sincerely,

KOLANO AND SAHA ENGINEERS, INC.



Darren Brown, P.E.
INCE Board Certified
Senior Consultant

EXHIBIT 1

SITE PLAN SHOWING THE LOCATION OF
AMBIENT SOUND LEVEL MEASUREMENTS FOR
A COMMUNITY IMPACT STUDY OF
THE BROWN STREET MIXED-USE DEVELOPMENT

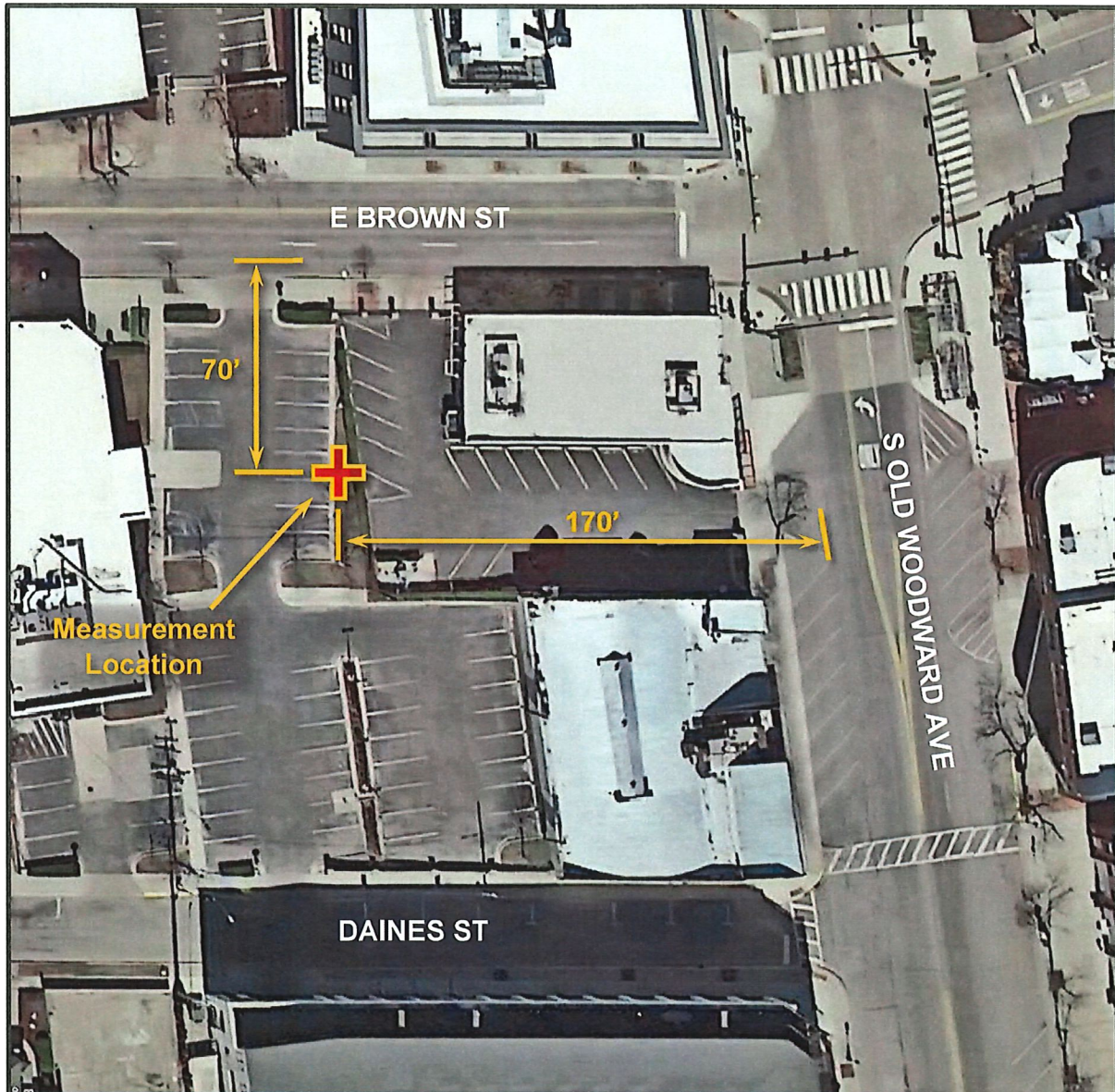
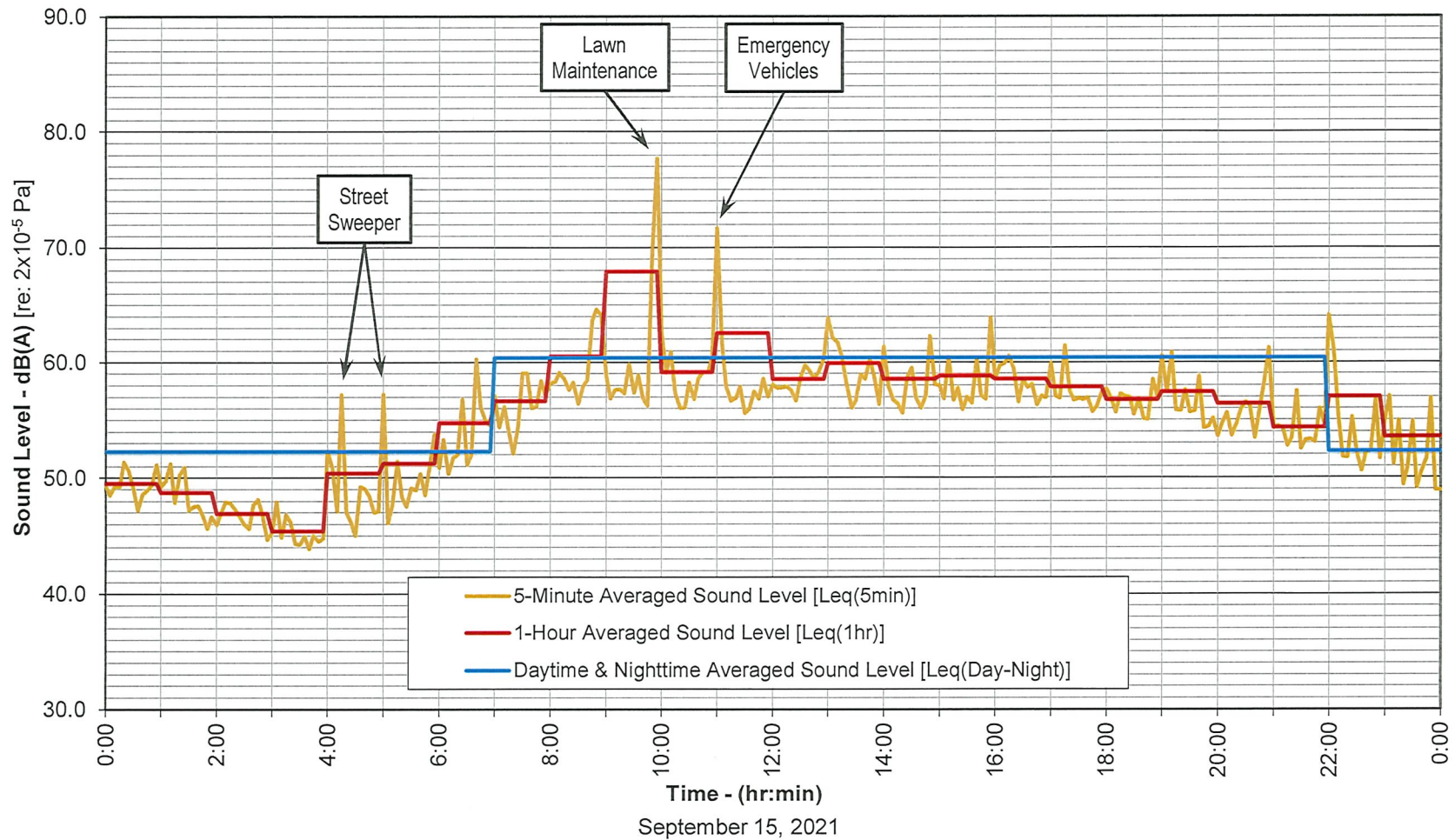


EXHIBIT 2

Ambient Sound Levels at the Proposed Brown Street Mixed-Use Development Site

Measured at a Position 70-ft South of Brown Street, and 170-ft West of Old Woodward Street

Study Conducted For: Saroki Architecture



Section 3.4

Traffic Impact Study

Memorandum

To: Mr. Alexander Saroki, AIA, NCARB
From: Paul T. O'Meara, PE and Alyssa M. Wambold, PE
Date: March 9, 2022
RE: Traffic Impact Study for E Brown Street Mixed Use Building

ROWE Professional Services Company has completed a Traffic Impact Study (TIS) related to the proposed mixed-use development located in the southwest quadrant of Old Woodward Avenue and Brown Street in the City of Birmingham, MI. The current site plan (included in the materials attached to this report) proposes mixed use on Level 1 including a furniture store [3,200 square feet (SF)], a bistro restaurant (3,606 SF), and general office (8,164 SF). Level 2 will be used as general office (26,404 SF). Finally, levels 3 and 4 will be two (2) floors of residential with a total of 38 units. An anticipated opening date is planned for 2024, and the building will be constructed in a single phase. This TIS was prepared to determine if any improvements would be necessary to mitigate traffic impacts to the adjacent road network. This report has been completed in accordance with the requirements specified by the City of Birmingham and their consultants.

TRAFFIC IMPACT STUDY

Study Area

The subject property is currently occupied by a 6,775 SF two-story office building and associated parking lots. The property is currently zoned B-2 (General Business). The parcels immediately east and west are currently zoned B-2, the properties to the south are currently zoned B-2B (General Business), and the properties to the north are currently zoned B-4 (Business Residential). The property also is in an overlay zoning district in accordance with The Birmingham 2016 Plan and is zoned D-3 (Mixed Use). The property to the west is also zoned D-3. Properties to the north and east are zoned D-4. Most of the properties to the south are not within the overlay district, however a few of the buildings fronting S Old Woodward Avenue are zoned D-2.

Existing and proposed uses in the immediate area include a public parking structure, general office, hotel, retail, and mid-rise mixed-use residential. An RH furniture gallery and restaurant is proposed to be constructed to the immediate east of the parcel.

Existing Conditions

Table 1 summarizes the roadway characteristics for all roadways within the study area.

Table 1 : Roadway Characteristics

Roadway	Jurisdiction	Speed Limit (MPH)	Roadway Classification	AADT (vpd) ¹
S Old Woodward Avenue	City Of Birmingham	25	Major Collector	10,136 – 11,551
E Brown Street		25	Major Collector	8,566
Daines Street		25	Local	Not Available
Pierce Street		25	Minor Collector	Not Available

¹SEMCOG TCDS

The subject property has frontage on two public streets. E Brown Street is a three-lane Major Collector with two eastbound lanes and one westbound lane adjacent to the site. Traffic flow along E Brown Street is controlled by signals at S Old Woodward Avenue and Pierce Street. Daines Street is a two-lane local street with on-street parking on the north side. S Old Woodward Avenue is located 100' east of the subject property and is a two-lane Major Collector with angled parking on both sides. This corridor is planned for reconstruction in 2022. The new street will be three lanes with angled parking on both sides, improving the safety of left turn movements. Pierce Street is located 500' west of the subject property and is a two-lane collector street with on street parking on both sides of the roadway. The studied intersection of S Old Woodward Avenue & Daines Street operates with stop control on Daines Street only. All streets in the vicinity of the proposed project operate at 25 mph and are under the jurisdiction of the City of Birmingham. Grades are mild in the immediate area and do not introduce any traffic concerns.

Master Plan Review

The subject property is contained within Downtown Birmingham. The Master Plan for this area is titled "The Downtown Birmingham 2016 Plan" and was prepared in 1996. The proposal has been designed in accordance with the goals of this plan.

A review of the City's Multi-Modal Transportation Plan was also conducted. The plan calls for the installation of Shared Use pavement markings on the adjacent sections of E Brown Street and S Old Woodward Avenue to encourage the use of these streets by bicyclists. With the reconstruction of the S Old Woodward Avenue corridor and inclusion of leading pedestrian intervals at traffic signals, the city is improving pedestrian accessibility in the immediate area. Curb extensions and shortened crosswalks have been constructed at the Brown Street intersection, and an additional improved crosswalk is planned for the Daines Street intersection in 2022. The existing bus stop on both sides of S Old Woodward Avenue at Daines Street have shelters for those waiting for either northbound or southbound busses. Finally, enhancements and curb extensions are proposed at the existing mid-block crosswalk on E Brown Street between S Old Woodward Avenue & Piece Street. No elements of the proposed development conflict with the goals of the Multi-Modal Transportation Plan.

Other than the shared use lane markings noted above, all suggested local improvements of the Multi-Modal Transportation plan have or will soon be implemented, with the exception of a curb extension at the existing mid-block pedestrian crossing on Brown St. (just west of this site). While a curb extension would be an improvement for pedestrians at this location (reducing the crossing from 3 lanes of traffic to two), it would be a severe detriment for traffic flow on eastbound Brown St. Specifically, the south side lane acts as a passing lane for eastbound drivers attempting to make a left turn into the Pierce St. Parking Structure. Installing a curb extension in this area is not recommended as it would remove the ability to pass left turn vehicles, resulting in serious queue issues, particularly during the AM Peak Hour. As a result, no suggested improvements from the Multi-Modal Transportation Plan are recommended as a part of this development.

Fortunately, the majority of such improvements have been or will soon be implemented in the near future.

Additional Multi-Modal information related to the proposed development can be found in the Trip Generation section below.

Proposed Development

The proposed mixed-use building will contain 38 DU, a 3,200 SF Furniture Store, a 3,606 SF Bistro, 34,568 SF of office space, and an underground on-site parking structure with capacity for 59 vehicles and 16 bicycles. The underground parking structure will be designed to provide a minimum of 10 electric vehicle charging stations, with outlets and infrastructure planned to expand this number if the demand requires additional spaces. The building has also dedicated significant space on the first floor for outdoor amenities including seating areas, fire pits, a fountain, and garden areas that will be accessible from the public sidewalk along Daines Street and E Brown Street. Additionally, the roof of the building will contain several amenities for residents included seating/lounging areas, fire pits, grills, cabanas, shaded seating areas, trees with up-lighting, and an infinity edge swimming pool that will overlook the first-floor outdoor area described above. The building has been designed to reflect the current trend of work from home. Final building completion is planned for 2024 and the development will be constructed in a single phase.

Traffic Counts

Turning movement counts (TMCs) were collected during the weekday AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak periods on October 14, 2021, and the Saturday (11:00 a.m. to 1:00 p.m.) peak periods on October 16, 2021, at the intersections of:

- S Old Woodward Avenue & E Brown Street
- S Old Woodward Avenue & Daines Street
- E Brown Street & Pierce Street

Due to the impact of COVID-19, current traffic volume data is not representative of typical operations. The City of Birmingham and their consultants provided TMCs at the intersections of S Old Woodward Avenue & E Brown Street, and S Old Woodward Avenue & Daines Street. These counts were completed in June 2021 and were adjusted by the city and their consultants to account for the effects of COVID-19 on traffic volumes. These adjusted counts were used as a comparison in this study. Additionally, the city and their consultants requested that an adjustment factor be generated per approach for the intersection of E Brown Street & Pierce Street for each peak hour. ROWE reached out to the Birmingham Police Department to check for historical data at or near this intersection, however no usable data was available. Due to a lack of historical data at this intersection, an adjustment factor per approach was determined at the intersection of S Old Woodward Avenue & E Brown Street by comparing the adjusted counts completed in June 2021 to the counts completed in October 2021. These traffic volumes are shown in Table 2 below. The percentage adjustments by approach are shown in Table 3 below. These percentages were applied to the counts collected in October 2021 at the intersection of E Brown Street & Pierce Street.

Table 2 : Traffic Counts – S Old Woodward Avenue & E Brown Street

	AM Peak Hour		PM Peak Hour	
	Adj. June 2021	October 2021	Adj. June 2021	October 2021
NB	421	246	416	320
SB	211	174	322	241
EB	306	299	500	437
WB	177	156	243	223

Table 3 : Traffic Count Adjustments - S Old Woodward Avenue & E Brown Street

	AM Peak Hour	PM Peak Hour
NB	71%	30%
SB	21%	34%
EB	2%	14%
WB	13%	9%

Along E Brown Street, EB volumes exiting the intersection at Pierce Street was compared to EB volumes entering the intersection at S Old Woodward Avenue. The WB volumes exiting the intersection at S Old Woodward Avenue were compared to the WB volumes entering the intersection at Pierce Street. When comparing the counts collected at these two intersections on the same day (October 14, 2021), significant volume imbalances were calculated between these two intersections. This is likely due to the large parking structure located on the north side of Pierce Street between the two intersections. ROWE added a “dummy intersection” into the synchro network to represent the effects of the parking structure.

No historical data was available for the Saturday peak hour. A study-wide traffic adjustment factor was calculated between the TMCs collected in June 2021 and October 2021 at the intersections of S Old Woodward Avenue & E Brown Street and S Old Woodward Avenue & Daines Street. The traffic volume comparison indicated the following for all study periods:

- All Study Periods (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.)
 - Total Entering Volume (June 2021): **4,141**
 - Total Entering Volume (October 2021): **3,300**

Therefore, in order to normalize the traffic volume data collected in 2021, all Saturday peak period TMCs were increased by 25 percent at all study intersections.

All studied intersections are shown in Figure 1 attached to this memorandum. All traffic counts used in this study at attached to this memorandum. The existing adjusted peak hour traffic volumes are shown in Figure 2 attached to this memorandum.

Background Traffic Scenario

Historical traffic data were referenced to determine the applicable growth rate for the existing traffic volumes for the project build-out year in 2024. Based on this review, a background growth rate of 0.5 percent was utilized after review and approval from the city.

The city is currently in the design phase for proposed improvements along S Old Woodward Avenue. Geometric changes proposed in this project include the construction of a northbound left turn lane at the intersection of S Old Woodward Avenue & Daines Street. This turn lane is included in the background traffic scenarios.

In addition, one (1) background development was identified and included in the background traffic condition. An RH furniture gallery and restaurant is planned to be constructed on the property immediately to the east of this site and has been included in the background development calculations. Using the information and methodologies specified in the latest version of Trip Generation (Trip Generation Manual, 11th Edition, 2021), ROWE forecast the weekday AM and PM peak hour trips. The results of the trip generation forecasts for the background developments are provided below in Table 4.

Table 4: Trip Generation for Background Developments

Development	Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
				In	Out	Total	In	Out	Total	In	Out	Total		
Restoration	Furniture Store	890	42,120 SF	-	-	-	10	12	22	27	23	50	264	307
Hardware	Quality Restaurant	931	140 Seats	-	-	-	26	13	39	27	19	46	364	360
Total		-	-	-	-	-	36	25	61	54	42	96	628	667
Internal Capture Reductions: 24% PM (20% In, 30% Out); 31% Sat (28% In, 36% Out)				-	-	-	9	9	18	18	16	34	-	-
Total External Trips				-	-	-	27	16	43	36	26	62	628	667

These trips were distributed using the trip distribution developed from existing adjusted traffic volumes. The background traffic volumes are shown in Figure 3 attached to this memorandum.

Trip Generation

Using the information and methodologies specified in the latest version of Trip Generation (Trip Generation Manual, 11th Edition, 2021), ROWE forecast the weekday AM and PM peak hour trips and Saturday peak hour trips associated with the proposed development. Land Use Code (LUC) 230 was reviewed, however this land use does not have sufficient data plots and the type of tenants in the retail spaces do not match those typically found in this LUC. LUC 220, LUC 890, and LUC 931 was determined to be a better fit for this development. The results of the trip generation forecasts are provided below in Table 5.

Table 5: Trip Generation for Proposed Development

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	221	38 DU	1	4	5	9	6	15	8	7	15	173	192
General Office Building	710	34,568 SF	59	8	67	12	57	69	10	8	18	461	76
Furniture Store	890	3,220 SF	1	1	2	1	1	2	2	2	4	63	40
Fine Dining Restaurant (Bistro)	931	3,606 SF	2	1	3	19	9	28	23	16	39	303	325
Total	-	-	63	14	77	41	73	114	43	33	76	1,000	633
Internal Capture Reductions: 0% AM (0% In, 0% Out) 4% PM (5% In, 3% Out) 11% Sat. (9% In, 12% Out)			0	0	0	2	2	4	4	4	8	-	-
Total External Trips			63	14	77	39	71	110	39	29	68	1,000	633

In multi-use developments, not all the trips generated are from sources outside the boundaries of the development but are rather trips that are “internally captured” within the site. The methodology presented in *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* was followed to determine an appropriate internal capture rate for the proposed development. For the Saturday peak hour, the PM spreadsheet was utilized. The results of this analysis indicate no internal capture during the AM peak hour, a 4% (5% in, 3% out) PM peak hour internal capture rate, and an 11% (9% in, 12% out) for the combination of land uses. With the inclusion of the internal capture reductions, the proposed development will generate 77 external trips during the AM peak hour (63 inbound and 14 outbound), 110 external trips during

the PM peak hour (39 inbound and 71 outbound), and 68 external trips during the Saturday peak hour (39 inbound and 29 outbound).

The vehicle trips in Table 5 were converted to person-trips by using the baseline vehicle mode split and baseline vehicle occupancy rates published by ITE in Appendix B of the *ITE Trip Generation Handbook, 3rd Edition*. The vehicle mode splits and vehicle occupancy rates for the studies contained within the *Trip Generation Handbook* are provided in Table 6 below.

Table 6 : Vehicle Occupancy and Mode Share – Peak Hours

Land Use	Land Use Code	Mode Share					Vehicle Occupancy		
		Vehicle	Walking	Cycling	Transit	WFH ¹	AM Peak Hour	PM/Sat Peak Hour	Weekday/Saturday
Multifamily Housing (Low-Rise)	220	0.873	0.017	0.002	0.002	.106	1.13	1.15	1.14
General Office Building	710	0.96	0.02	0.01	0.01	0.00	1.06	1.11	1.15
Furniture Store	890	0.96	0.02	0.01	0.01	0.00	1.17	1.21	1.42
Fine Dining Restaurant (Bistro)	931	0.96	0.02	0.01	0.01	0.00	1.17	1.62	1.78

¹Work From Home

Appendix B of the *Trip Generation Handbook, 3rd Edition* specifies weekday average vehicle occupancy rates of 1.13 (AM peak hour) and 1.15 (PM peak hour) for LUC 220 vehicle-based trips, weekday average vehicle occupancy rates of 1.06 (AM peak hour) and 1.11 (PM peak hour) for LUC 710 vehicle-based trips, weekday average vehicle occupancy rates of 1.17 (AM peak hour) and 1.21 (PM peak hour) for LUC 890 vehicle-based trips, and weekday average vehicle occupancy rates of 1.17 (AM peak hour) and 1.62 (PM peak hour) for LUC 931 vehicle-based trips. Data is not currently available for weekend average vehicle occupancy rates. For the purpose of this study, the PM weekday rates were used for the Saturday peak analysis. Appendix B also specifies a *minimum* vehicle mode share of 96% for these person-trips. Therefore, it was assumed that the remaining 4% of person-trips were made via walking (2%), cycling (1%), and transit (1%). Data provided by the City of Birmingham and their consultants based on the SEMCOG Community Profile for the city shows a vehicle mode share of 87.3%, walking mode share of 1.7%, and cycling/transit mode shares of 0.2% each associated with residential land uses (LUC 220). The vehicular trip generation associated with the new development was converted to a person-trip generation by applying the vehicle occupancy rate to the vehicular trip generation (prior to implementation of the Internal Capture reductions). These calculations are shown in Table 7, Table 8, Table 9, and Table 10 for LUC 220, LUC 710, LUC 890, and LUC 931, respectively. Next, the Internal Capture reductions were applied to the person-trip generation by applying the aforementioned factors. These calculations are shown in Table 11, Table 12, Table 13, and Table 14 for the LUC 220, LUC 710, LUC 890, and LUC 931 development components, respectively. Finally, the vehicle mode share percentages were applied to the total number of person-trips to project the number of person-trips utilizing vehicle travel, walking, cycling, and transit travel to the site. These calculations are shown in Table 15, Table 16, Table 17, and Table 18 for the LUC 220, LUC 710, LUC 890, and LUC 931 development components, respectively.

Table 7: Person-Trip Generation - LUC 221 (Prior to Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	221	38 DU	10	30	40	27	16	43	27	16	43	364	364

Table 8: Person-Trip Generation - LUC 710 (Prior to Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
General Office Building	710	34,992 SF	63	9	72	13	64	77	11	10	21	530	87

Table 9: Person-Trip Generation - LUC 890 (Prior to Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Furniture Store	890	3,220 SF	1	1	2	1	1	2	3	2	5	89	57

Table 10: Person-Trip Generation - LUC 931 (Prior to Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Fine Dining Restaurant (Bistro)	931	3,606 SF	2	2	4	30	15	45	37	26	63	539	579

Table 11: Person-Trip Generation - LUC 221 (After Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Multifamily Housing (Mid-Rise)	221	38 DU	10	28	38	22	13	35	22	13	35	364	364

Table 12: Person-Trip Generation - LUC 710 (After Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
General Office Building	710	34,568 SF	61	9	70	12	62	74	9	10	19	530	87

Table 13: Person-Trip Generation - LUC 890 (After Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Furniture Store	890	3,220 SF	2	2	4	1	1	2	2	1	3	89	57

Table 14: Person-Trip Generation - LUC 931 (After Internal Capture Reductions)

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Week Day	Sat
			In	Out	Total	In	Out	Total	In	Out	Total		
Fine Dining Restaurant (Bistro)	931	3,606 SF	2	2	4	25	12	37	30	20	50	539	579

Table 15: Person-Trip Generation by Travel Mode- LUC 221

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Weekday	Saturday
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	221	8	25	33	19	12	31	19	12	31	318	318
Walking	221	1	0	1	0	0	0	0	0	0	6	6
Cycling	221	0	0	0	0	0	0	0	0	0	1	1
Transit	221	0	0	0	0	0	0	0	0	0	1	1
Work From Home	221	1	3	4	3	1	4	3	1	4	38	38
Total New Person-Trips		10	28	38	22	13	35	22	13	35	364	364

Table 16: Person-Trip Generation by Travel Mode- LUC 710

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Weekday	Saturday
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	710	58	9	67	11	60	71	9	9	18	509	83
Walking	710	1	0	1	1	0	1	0	1	1	11	2
Cycling	710	1	0	1	0	1	1	0	0	0	5	1
Transit	710	1	0	1	0	1	1	0	0	0	5	1
Total New Person-Trips		61	9	70	12	62	74	9	10	19	530	87

Table 17: Person-Trip Generation by Travel Mode- LUC 890

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Weekday	Saturday
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	890	2	2	4	1	1	2	2	1	3	85	54
Walking	890	0	0	0	0	0	0	0	0	0	2	1
Cycling	890	0	0	0	0	0	0	0	0	0	1	1
Transit	890	0	0	0	0	0	0	0	0	0	1	1
Total New Person-Trips		2	2	4	1	1	2	2	1	3	89	57

Table 18: Person-Trip Generation by Travel Mode- LUC 931

Travel Mode	Land Use Code	AM Peak Hour			PM Peak Hour			Sat Peak Hour			Weekday	Saturday
		In	Out	Total	In	Out	Total	In	Out	Total		
Vehicle	931	2	2	4	24	12	36	27	20	47	518	555
Walking	931	0	0	0	1	0	1	1	0	1	11	12
Cycling	931	0	0	0	0	0	0	1	0	1	5	6
Transit	931	0	0	0	0	0	0	1	0	1	5	6
Total New Person-Trips		2	2	4	25	12	37	30	20	50	539	579

Trip Distribution

The existing traffic volumes were used to develop a trip distribution model for the AM and PM peak hours for the new traffic that will be generated by the proposed development. Table 19 provides the probable distribution based on the existing traffic patterns.

Table 19: Trip Distribution

Direction	Via	AM Peak Hour		PM Peak Hour		Sat Peak Hour	
		To	From	To	From	To	From
North	S Old Woodward Ave	16%	15%	19%	19%	26%	22%
	Pierce St	8%	6%	8%	9%	12%	9%
South	S Old Woodward Ave	20%	33%	21%	27%	20%	29%
	Pierce St	6%	9%	7%	8%	5%	7%
East	E Brown St	29%	13%	22%	15%	21%	13%
West	E Brown St	17%	24%	20%	21%	13%	19%
	Daines St	4%	0%	3%	1%	3%	1%
Total		100%	100%	100%	100%	100%	100%

All trips associated with the residential uses were assigned to the proposed driveway to the underground parking structure. In the AM peak hour, 11 of the inbound office trips were assigned to the underground parking structure. In the PM peak hour, 11 of the outbound office trips were assigned to the underground parking structure. During the Saturday peak hour, none of the office trips were assigned to the underground parking structure. The remainder of the office trips were

assigned to the parking structure on the north side of E Brown Street. All trips associated with the retail use that originate or destinate on S Old Woodward Avenue were assigned to find on-street parking along S Old Woodward Avenue or Daines Street. All other trips associated with the retail use were assigned to the parking structure located on the north side of E Brown Street.

The trip distribution for the site is shown in Figure 4 attached to this memorandum. The background traffic volumes were combined with the site generated traffic volumes to obtain the total future traffic volumes, which are shown in Figure 5 attached to this memorandum.

Level of Service Analysis

Level of service (LOS) analyses for existing, background, and total future (build) conditions for the AM and PM peak hours were performed for the intersections of:

- S Old Woodward Avenue & E Brown Street
 - Signalized Intersection
- S Old Woodward Avenue & Daines Street
 - Unsignalized Intersection
- E Brown Street & Pierce Street
 - Signalized Intersection
- Daines Street & RH Driveway
 - Proposed driveway approximately 125' west of S Old Woodward Avenue
- E Brown Street & Site Driveway
 - Proposed driveway approximately 200' west of S Old Woodward Avenue

According to the most recent (6th) edition of the Highway Capacity Manual (HCM), LOS is a qualitative measure describing operational conditions of a traffic stream or intersection. LOS ranges from A to F, with LOS A being the best and LOS D generally being considered acceptable. Table 20 presents the criteria for defining the various LOS for signalized and unsignalized intersections. LOS D is considered acceptable in urban/suburban areas.

Table 20: LOS Criteria

LOS	Average Stopped Delay/Vehicle (seconds)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

The results of the LOS analyses for the intersection listed above are summarized in Table 21 through Table 23. Full LOS output reports are attached to this memorandum.

Existing Conditions

The results of the LOS analysis for existing conditions reveals at ALL approaches and movements of the studied intersections operate at LOS C or better during the AM, PM, and Saturday peak hours.

95th percentile queue lengths were reviewed at the studied intersections. No significant queue lengths were observed in the simulations and all queue lengths dissipated within one cycle length at the signalized intersections. The queue lengths did not block any study intersection.

The operational results for existing conditions are presented in Table 21.

Table 21: LOS Analysis for Existing Conditions

Table 24-200 Analysis for Existing Conditions						
Intersection	Control Type	Approach	Movement	AM Peak	PM Peak	Sat Peak
S Old Woodward Avenue & E Brown Street	Signalized	Eastbound	LT	C 22.2	C 22.1	C 22.1
			TR	C 22.7	C 22.9	C 22.0
			Overall	C 22.5	C 22.5	C 22.1
		Westbound	L	C 25.2	C 26.1	C 24.6
			TR	C 22.2	C 20.4	C 21.0
			Overall	C 22.8	C 21.0	C 21.5
		Northbound	L	C 22.3	C 27.9	C 27.2
			TR	B 17.6	C 21.7	C 22.8
			Overall	B 19.8	C 23.5	C 24.0
		Southbound	L	C 21.0	C 27.2	C 22.8
			TR	B 15.3	C 20.3	C 20.2
			Overall	B 16.6	C 21.6	C 22.5
Overall Intersection			C 20.4	C 22.3	C 22.7	
S Old Woodward Avenue & Daines Street	Stop	Eastbound	LR	B 11.6	B 14.3	B 14.5
	Free	Northbound	LT	A 0.6	A 0.7	A 0.4
		Southbound	TR	A 0.0	A 0.0	A 0.0
	Two-Way Stop Control	Overall Intersection			A 0.5	A 0.8
E Brown Street & Pierce Street	Signalized	Eastbound	LTR	B 12.7	B 13.5	B 13.6
		Westbound	LTR	B 10.6	B 11.8	B 12.6
		Northbound	LTR	C 28.8	C 30.7	C 25.2
		Southbound	LTR	C 25.9	C 29.4	C 26.5
		Overall Intersection			B 16.2	B 18.0

XX.X Average seconds of delay per vehicle

Background Conditions

The results of the LOS analysis for background conditions reveals that all approaches and movements of the studied intersections would continue to operate at LOS C or better during the AM, PM, and Saturday peak hours.

95th percentile queue lengths were reviewed at the studied intersections. No significant queue lengths were observed in the simulations and all queue lengths dissipated within one cycle length at the signalized intersections. The queue lengths did not block any study intersection.

The operational results for background conditions are presented in Table 22.

Table 22: LOS Analysis for Background Conditions

Intersection	Control Type	Approach	Movement	AM Peak	PM Peak	Sat Peak
S Old Woodward Avenue & E Brown Street	Signalized	Eastbound	LT	C 22.3	C 22.5	C 22.4
			TR	C 22.8	C 23.4	C 22.5
			Overall	C 22.5	C 22.9	C 22.4
		Westbound	L	C 25.3	C 26.9	C 25.4
			TR	C 22.3	C 20.6	C 21.2
			Overall	C 22.8	C 21.2	C 21.7
		Northbound	L	C 22.5	C 28.4	C 27.9
			TR	B 17.7	C 22.0	C 23.3
			Overall	B 19.9	C 23.9	C 24.5
		Southbound	L	C 21.1	C 27.6	C 30.9
			TR	B 15.4	C 20.5	C 20.6
			Overall	B 16.7	C 21.8	C 22.9
Overall Intersection			C 20.5	C 22.7	C 23.1	
S Old Woodward Avenue & Daines Street	Stop	Eastbound	LR	B 11.7	B 14.6	B 14.9
	Free	Northbound	L	A 8.0	A 8.6	A 8.5
			T	A 0.0	A 0.0	A 0.0
			Overall	A 0.6	A 0.7	A 0.4
		Southbound	TR	A 0.0	A 0.0	A 0.0
	Two-Way Stop Control	Overall Intersection		A 0.5	A 0.8	A 0.6
E Brown Street & Pierce Street	Signalized	Eastbound	LTR	B 12.8	B 13.9	B 14.0
		Westbound	LTR	B 10.6	B 11.9	B 12.7
		Northbound	LTR	C 29.1	C 30.9	C 25.3
		Southbound	LTR	C 26.0	C 29.5	C 26.6
		Overall Intersection		B 16.3	B 18.2	B 16.9
	Daines Street & RH Driveway	Free	Eastbound	LT	A 0.0	A 0.0
Westbound			TR	A 0.0	A 0.0	A 0.0
Stop		Southbound	LR	A 0.0	A 8.6	A 8.6
Two-Way Stop Control		Overall Intersection		A 0.0	A 0.4	A 1.0

XX.X Average seconds of delay per vehicle

Future Conditions

The results of the LOS analysis for future conditions reveals that all approaches and movements of the studied intersections would continue to operate at LOS C or better during the AM, PM, and Saturday peak hours.

95th percentile queue lengths were reviewed at the studied intersections. No significant queue lengths were observed in the simulations and all queue lengths dissipated within one cycle length at the signalized intersections.

The operational results for future conditions are presented in Table 23.

Table 23: LOS Analysis for Future Conditions

Intersection	Control Type	Approach	Movement	AM Peak	PM Peak	Sat Peak
S Old Woodward Avenue & E Brown Street	Signalized	Eastbound	LT	C 22.4	C 24.6	C 23.0
			TR	C 22.9	C 24.4	C 22.7
			Overall	C 22.6	C 24.5	C 22.9
		Westbound	L	C 25.6	C 28.2	C 25.8
			TR	C 22.4	C 20.7	C 21.3
			Overall	C 23.0	C 21.4	C 21.9
		Northbound	L	C 24.0	C 29.3	C 29.0
			TR	B 17.7	C 22.2	C 23.7
			Overall	C 20.8	C 24.3	C 25.1
		Southbound	L	C 21.2	C 28.0	C 31.6
			TR	B 15.6	C 20.8	C 20.9
			Overall	B 16.8	C 22.1	C 23.3
Overall Intersection			C 20.9	C 23.4	C 23.5	
S Old Woodward Avenue & Daines Street	Stop	Eastbound	LR	B 11.8	B 15.0	B 15.3
	Free	Northbound	L	A 8.0	A 8.7	A 8.5
			T	A 0.0	A 0.0	A 0.0
			Overall	A 0.5	A 0.7	A 0.3
		Southbound	TR	A 0.0	A 0.0	A 0.0
	Two-Way Stop Control	Overall Intersection		A 0.4	A 0.8	A 0.6
E Brown Street & Pierce Street	Signalized	Eastbound	LTR	B 13.1	B 14.2	B 14.1
		Westbound	LTR	B 10.7	B 12.3	B 12.8
		Northbound	LTR	C 29.4	C 31.2	C 25.4
		Southbound	LTR	C 26.3	C 29.7	C 26.8
		Overall Intersection		B 16.6	B 18.4	B 17.1
	Daines Street & RH Driveway	Free	Eastbound	LT	A 0.0	A 0.0
Westbound			TR	A 0.0	A 0.0	A 0.0
Stop		Southbound	LR	A 0.0	A 8.6	A 8.6
Two-Way Stop Control		Overall Intersection		A 0.0	A 0.4	A 1.0
E Brown Street & Site Driveway		Free	Eastbound	T	A 0.0	A 0.0
	TR			A 0.0	A 0.0	A 0.0
	Overall			A 0.0	A 0.0	A 0.0
	Stop	Westbound	LT	A 0.1	A 0.1	A 0.1
		Northbound	LR	B 10.9	B 13.5	B 11.2
	Two-Way Stop Control	Overall Intersection		A 0.1	A 0.3	A 0.2

XX.X Average seconds of delay per vehicle

Site Access

There is one proposed driveway off E Brown Street for this development, which is located approximately 200' west of S Old Woodward Avenue. This driveway will lead to the underground parking structure for the residential and office uses. All retail traffic will utilize existing on-street parking or the adjacent parking structures. There are existing street trees along E Brown Street, which should be regularly trimmed to prevent sight distance issues. Three safety features are recommended at the point where vehicles entering or exiting the parking garage to improve conditions at the sidewalk:

- a. A visible and audible alarm system should be installed in this area to alert pedestrians when a vehicle is exiting the parking structure.
- b. Convex mirrors should be installed outside of the garage door to allow exiting drivers to

see the public sidewalk in both directions, to confirm if pedestrians are in the immediate area.

- c. An opening in the west wall of the building should be constructed just south of the north face of the building, to allow exiting drivers the opportunity to look westerly toward the public sidewalk to better gauge if pedestrians are present.

No other changes to the roadway are needed to improve access for all roadway users (vehicles, pedestrians, and bicyclists).

95th percentile queues lengths were assessed at the proposed driveway on E Brown Street. These queue lengths did not exceed 20' (1 vehicle) in the AM peak hour, 37' (1 vehicle) in the PM peak hour, and 36' (1 vehicle) in the Saturday peak hour. On eastbound E Brown Street, no queue length was observed in the AM peak hour, queue lengths did not exceed 20' (1 vehicle) in the PM peak hour, and queue lengths did not exceed 4' (1 vehicle) in the PM peak hour. On westbound E Brown Street, queue lengths did not exceed 16' (1 vehicle) in the AM peak hour, 24' (1 vehicle) in the PM peak hour, and 16' (1 vehicle) in the Saturday peak hour.

Given the driveway's proximity to the intersection of S Old Woodward Avenue & E Brown Street, 95th percentile queue lengths for eastbound traffic were reviewed. These queues will not exceed 114' (5 vehicles) in the AM peak hour, 179' (7 vehicles) in the PM peak hour, and 141' (6 vehicles) in the Saturday peak hour. Review of the simulations showed that the driveway will occasionally be blocked by queues from the signal at the intersection of S Old Woodward Avenue & E Brown Street. However, these queue lengths are short in duration, and clear within one cycle length.

The Synchro model was also reviewed with respect to existing driveways on the north side of E. Brown St. with respect to left turn lockup, or the phenomenon wherein left turning vehicles in both directions cannot move due to queues extending in both directions of the street. As shown on Figure 14, two driveways exist on the north side of the street within the projected PM Peak Hour queue for this driveway. The driveway for the office building at 255 E. Brown St., at 80 ft. to the east, is the access for a private 60 parking space parking lot. The spaces are reserved for specific office tenants, meaning that the majority of left turns would be generated at the beginning of the work day. Left turn demand to the proposed driveway would tend to be small during the AM Peak Hour, meaning that left turn conflicts, while possible, will be infrequent. The second driveway, at 120 ft. to the east, serves as the entrance and exit to the Daxton Hotel. Inbound traffic into the parking garage is primarily handled by valet drivers, who access the garage only from westbound Brown St., meaning that left turns into the driveway are almost nonexistent. Finally, it is noted that the current site (Coldwell Banker Realty) also has a Brown St. driveway that is located 95 ft. closer to Old Woodward Ave. than the proposed driveway, more likely to push queues into the Old Woodward Ave. intersection than what is proposed. In summary, while it is acknowledged that there is some potential for left turn conflicts from the proposed and existing driveways, the frequency of these occurrences will be few, and should be anticipated in this dense, urban environment.

Site Circulation and Parking

This development includes an underground parking structure with 59 proposed spaces. 48 of these spaces will be reserved for residential parking, with the remaining 11 spaces being reserved for office parking. All other trips to/from the office space and any visitors to the residential areas will utilize the public parking available around the development. It is anticipated that the office trips will utilize the parking structure located at the northeast corner of E Brown Street & Pierce Street. All of the trips associated with the retail portion of the development are anticipated to utilize the street parking on S Old Woodward Avenue and E Brown Street or the parking structure mentioned above.

Review of the zoning ordinance indicated that 48 parking spaces are required for the residential uses, 115 parking spaces are required for the office uses, 11 spaces are required for the retail use, and 43 parking spaces are required for the bistro use. The zoning ordinance allows for the use of existing public parking for the non-residential uses. Turning diagrams were provided for passenger vehicles turning in and out of the garage entrance, as well as for circulation within the building (figures 12 to 14). Note that drivers will be assigned specific parking spaces, and the parking level will not be open to the general public, therefore, drivers will learn how to negotiate the parking structure and the allotted driving areas after a small number of visits to the garage.

In order to avoid the need to move the parking garage door far into the building, the developer plans to provide bumper mounted transponders on each vehicle authorized to enter the parking structure. The transponder will signal to open the door before the driver has even begun making the turn into the driveway, allowing it to open so that there is little if any waiting time when arriving to the site. In order to reduce the chance of a vehicle-pedestrian conflict on the sidewalk, the garage door has been moved south to a full 20 ft. from the sidewalk, allowing space for one vehicle to wait while the garage door is in the process of opening.

Discussions were held with the City of Birmingham's parking director. Starting in November 2021, the city has been collecting occupancy rates twice a day (10 a.m. and 2 p.m.) at all their parking structures. The parking structure located at 333 Pierce Street has 720 parking spaces and had an average occupancy of 62% at 10 a.m. and 65% at 2 p.m. When looking at all parking structures owned by the city, the total occupancy is below 50% during the weekday. This parking structure has sufficient capacity to handle the addition of traffic generated by the proposed development.

It is acknowledged that current occupancy rates should continue to rise as the impact of the Covid related pandemic continues to wane. However, the cultural shift that has occurred over the last two years has made a likely permanent impact wherein remote work options are much more feasible, desired, and even expected from the work force than they were previously. While the Pierce St. Structure was almost always accommodating the daily parking demands from the area in 2019, current parking patterns lead us to believe that the Pierce St. Structure will be the first choice for long-term visitors to this building. If for some reason the Pierce St. Structure has periods where it cannot accommodate the parking demand for the immediate businesses as a whole, the Peabody St. Parking Structure will remain as a viable alternative for overflow demand. When walking to the Pierce St. Parking Structure, pedestrians will find the marked mid-block crossing for E Brown St. at the parking structure a convenient option. (No modifications to the mid-block crossing are recommended for the reasons noted above.) Pedestrians wishing to access the Peabody St. Structure will be able to use the improved Old Woodward Ave. and Brown St. intersection, which contains not only shortened crosswalks, but also leading pedestrian interval signal timing to make crossings safer at that intersection.

For loading and trash handling functions, a two-bay loading garage will be provided with access to Daines Street. The tenants will be required to arrange loading times that are in accordance with the ordinance and be limited to vehicles that can fit entirely on site, to avoid any obstructions of the Daines Street sidewalk. A trash room is provided on each floor adjacent to the loading area, so that all trash handling from the building can be accommodated indoors, and out of sight of the public. Truck turning diagrams demonstrating that turning movements in and out of this area will be sufficient have been provided on Figures 10 and 11.

Multi-Modal Considerations

Cyclists

Although shared lane markings have been proposed on several streets surrounding the studied site, no pavement markings have been installed to date. The RH site next to this proposed site will install a bike rack on E Brown Street that can accommodate parking for two bicycles. One additional bike rack that can accommodate four bicycles will be installed in the entertainment area located adjacent to the first floor of the building. Finally, bike racks that can accommodate 19 bicycles will be installed in the parking structure for resident use. No further enhancements are required to support the subject development.

Pedestrians

Adjacent to the site, sidewalks are located on both sides of S Old Woodward Avenue, E Brown Street, Daines Street, and Pierce Street. ADA-compliant pedestrian crossings are located on every approach at the signalized intersections of S Old Woodward Avenue & E Brown Street and E Brown Street & Pierce Street. 3-seconds leading pedestrian intervals have been implemented at both of these signalized intersections. One midblock pedestrian crossing is located across S Old Woodward Avenue on the north side of Daines Street. This crossing is proposed to be improved as a part of the reconstruction of S. Old Woodward Ave. later this year. Another midblock pedestrian crossing is located across E Brown Street on the east side of the parking structure driveway. The proposed development will enhance the existing sidewalk configuration with updated streetscapes on both street frontages, plus interconnecting private sidewalks on both sides of the building and through the interior portion of the first floor. No further enhancements to pedestrian access are required to support the development.

Transit Users

Route 450/460 – Woodward Local have scheduled stop locations at S Old Woodward Avenue & Daines Street. These routes, administer by SMART, run for approximately 18 hours on weekdays and Saturday's, and approximately 16 hours on Sunday's. Headways are approximately 60 minutes for each of the two independent numbered routes. These bus stops are easily accessible via existing sidewalks along S Old Woodward Avenue and the existing mid-block crossing on S Old Woodward Avenue just north of Daines Street. Shelters for waiting passengers currently exist for the public for both directions of travel. No additional bus stops, or routes are required to support the subject development.

Non-motorized Routing

Anticipated routes for all non-motorized traffic associated with the development were determined. These routes are shown in Figure 6 attached to this memorandum. These routes will utilize the existing pedestrian crosswalks. Review of the pedestrian signal timings was completed at both of the signalized intersections. This review revealed that no changes to the pedestrian timings are required. The recent addition of 3-second leading pedestrian intervals by the city will help to improve safety for pedestrians crossing these roadways.

Crash/Safety Analysis

A crash analysis was conducted for all intersections included in this study. Traffic crash data was reviewed for the most recent completed five years (October 1, 2016 – October 1, 2021) of available data. The results of this analysis revealed there was a total of 70 crashes on the studied segments.

Of these 70 crashes, there were no fatal or serious injury (A) crashes, 2 minor injury (B) crashes, 10 potential injury (C) crashes, and 58 property damage only (PDO) crashes. Four crashes involved alcohol (1 C-Level, 3 PDO), 3 crashes involved a pedestrian (3 C-Level), and 1 crash involved a bicyclist (PDO).

A breakdown of all crashes by crash type and severity is shown in Table 24 and a breakdown of all crashes by contributing circumstance and severity is shown in Table 25.

Table 24 : Overall Crash Summary - Crash Type

Crash Type	Number of Crashes by Severity						Percentage
	Fatal	A-Level	B-Level	C-Level	PDO	Total	
Angle	-	-	1	3	13	17	24%
Backing	-	-	-	1	5	6	9%
Head On	-	-	1	1	-	2	3%
Head On Left Turn	-	-	-	1	4	5	7%
Other	-	-	-	2	5	7	10%
Rear End	-	-	-	1	14	15	21%
Sideswipe Opposite Direction	-	-	-	-	1	1	1%
Sideswipe Same Direction	-	-	-	-	12	12	17%
Single Motor Vehicle	-	-	-	1	4	5	7%
Total	-	-	2	10	58	70	100%

Table 25: Overall Crash Summary - Contributing Circumstances

Contributing Circumstance	Number of Crashes by Severity						Percentage
	Fatal	A-Level	B-Level	C-Level	PDO	Total	
Alcohol	-	-	-	1	3	4	6%
Bike	-	-	-	-	1	1	1%
Run Red Light	-	-	1	-	3	4	6%
Pedestrian	-	-	-	3	-	3	4%
Other	-	-	-	1	1	2	3%
Parking/Parked Cars	-	-	-	2	17	19	27%
Traffic Congestion	-	-	-	3	27	30	43%
Wrong Lane Turn	-	-	1	-	6	7	10%
Total	-	-	2	10	58	70	100%

The most frequent crash type in the studied area was angle crashes (24%), followed by rear end crashes (21%), and sideswipe same direction crashes (17%). There was a significant number of crashes due to traffic congestion (30 crashes, 43%), which is common in downtown districts. There was also a significant number of crashes due to parking maneuvers/parked vehicles (19 crashes, 27%) that included a vehicle attempting a parking maneuver or striking a parked vehicle. Several of the parking related crashes involved vehicles attempting a U-turn into an available parking space. U-turn signage is currently present on the roadways and should be reviewed by the city often to ensure visibility. The city will complete a reconstruction project on S Old

Woodward Avenue in 2022 that will narrow the roadway, making it more difficult to attempt a U-turn maneuver.

Crash data was also separated by intersection and roadway segment. A breakdown of crashes by location, crash type, and severity is shown in Table 26 and a breakdown of crashes by location, contributing circumstance, and severity is shown in Table 27

Table 26 : Location Crash Summary – Crash Type

	Total Crashes	Crash Type	Number of Crashes by Severity					
			Fatal	A-Level	B-Level	C-Level	PDO	Total
S Old Woodward Avenue & E Brown Street	20	Angle	-	-	1	1	6	8
		Head On	-	-	1	1	-	2
		Head On Left Turn	-	-	-	1	1	2
		Other	-	-	-	1	-	1
		Rear End	-	-	-	-	3	3
		Sideswipe Same Direction	-	-	-	-	1	1
		Single Motor Vehicle	-	-	-	1	2	3
S Old Woodward Avenue & Daines Street	1	Rear End	-	-	-	-	1	1
E Brown Street & Pierce Street	12	Angle	-	-	-	-	1	1
		Backing	-	-	-	-	1	1
		Head On Left Turn	-	-	-	-	3	3
		Rear End	-	-	-	-	4	4
		Sideswipe Same Direction	-	-	-	-	3	3
			-	-	2	5	26	33
Daines Street	1	Sideswipe Same Direction	-	-	-	-	1	1
E Brown Street	28	Angle	-	-	-	2	7	9
		Head On	-	-	-	1	-	1
		Head On Left Turn	-	-	-	-	4	4
		Other	-	-	-	1	1	2
		Rear End	-	-	-	-	6	6
		Sideswipe Same Direction	-	-	-	-	4	4
		Single Motor Vehicle	-	-	-	1	1	2
Pierce Street	8	Angle	-	-	-	-	1	1
		Backing	-	-	-	-	1	1
		Other	-	-	-	-	1	1
		Rear End	-	-	-	-	1	1
		Sideswipe Same Direction	-	-	-	-	4	4
S Old Woodward Avenue	33	Angle	-	-	1	1	5	7
		Backing	-	-	-	1	4	5
		Head On	-	-	1	-	-	1
		Head On Left Turn	-	-	-	1	-	1
		Other	-	-	-	1	3	4
		Rear End	-	-	-	1	7	8
		Sideswipe Opposite Direction	-	-	-	-	1	1
		Sideswipe Same Direction	-	-	-	-	3	3
		Single Motor Vehicle	-	-	-	-	3	3
Total			-	-	2	10	58	70

Table 27 : Location Crash Summary – Contributing Circumstances

	Total Crashes	Contributing Circumstance	Number of Crashes by Severity					
			Fatal	A-Level	B-Level	C-Level	PDO	Total
S Old Woodward Avenue & E Brown Street	20	Alcohol	-	-	-	-	3	3
		Run Red Light	-	-	1	-	2	3
		Pedestrian	-	-	-	2	-	2
		Other	-	-	-	1	-	1
		Traffic Congestion	-	-	-	2	5	7
		Wrong Lane Turn	-	-	1	-	3	4
S Old Woodward Avenue & Daines Street	1	Traffic Congestion	-	-	-	-	1	1
E Brown Street & Pierce Street	12	Parking/Parked Cars	-	-	-	-	2	2
		Traffic Congestion	-	-	-	-	8	8
		Wrong Lane Turn	-	-	-	-	2	2
			-	-	2	5	26	33
Daines Street	1	Parking/Parked Cars	-	-			1	1
E Brown Street	28	Alcohol	-	-	-	-	1	1
		Run Red Light	-	-	-	-	2	2
		Pedestrian	-	-	-	2	-	2
		Other	-	-	-	1	-	1
		Parking/Parked Cars	-	-	-	1	-	1
		Traffic Congestion	-	-	-	1	16	17
		Wrong Lane Turn	-	-	-	-	4	4
Pierce Street	8	Parking/Parked Cars	-	-	-	-	2	2
		Traffic Congestion	-	-	-	-	4	4
		Wrong Lane Turn	-	-	-	-	2	2
S Old Woodward Avenue	33	Alcohol	-	-	-	1	2	3
		Bike	-	-	-	-	1	1
		Run Red Light	-	-	1	-	1	2
		Pedestrian	-	-	-	1	-	1
		Other	-	-	-	-	1	1
		Parking/Parked Cars	-	-	-	1	14	15
		Traffic Congestion	-	-	-	2	7	9
		Wrong Lane Turn	-	-	1	-	-	1
Total			-	-	2	10	58	70

Based on the methodologies described in the SEMCOG Traffic Safety Manual (Southeast Michigan Council of Governments (SEMCOG), 2016), crash frequencies and crash rates were determined for each studied intersection and roadway segments. The calculated values were then compared to average values and critical values for roadways of similar characteristics. The results of these analyses are shown in Table 28 and Table 29 below.

Table 28: Number of Crashes by Location

	Studied Area			Average Values - SEMCOG Region ¹		
	Total Crashes	Crash Frequency ²	Crash Rate ³	Crash Frequency ²	Critical Crash Frequency	Crash Rate ³
S Old Woodward Avenue & E Brown Street	20	4	0.35	4.69	8.48	0.87
S Old Woodward Avenue & Daines Street	1	0.2	0.02	4.69	8.48	0.87
E Brown Street & Pierce Street	12	2.4	0.28	2.57	5.2	1.55
Daines Street	1	0.2	0.10	2.7	6.04	15.14
E Brown Street	28	5.6	0.65	4.88	9.32	7.82
Pierce Street	8	1.6	0.80	7.88	14.07	4.41
S Old Woodward Avenue	33	6.6	0.57	9.77	18.09	5.73

¹SEMCOG Traffic Safety Manual 2016 Chapter 3

²Average number of crashes per year

³Crashes per million entering vehicles

Table 29: Number of Injury Crashes by Location

	Studied Area				Average Values - SEMCOG Region ¹	
	B-Level	C-Level	PDO	Casualty Ratio	Casualty Ratio ¹	Critical Casualty Ratio ¹
S Old Woodward Avenue & E Brown Street	2	5	13	0.35	0.23	0.41
S Old Woodward Avenue & Daines Street	-	-	1	0.00	0.23	0.41
E Brown Street & Pierce Street	-	-	12	0.00	0.23	0.49
Daines Street	-	-	1	0.00	0.21	0.46
E Brown Street	-	5	23	0.18	0.29	0.49
Pierce Street	-	-	8	0.00	0.24	0.37
S Old Woodward Avenue	2	5	26	0.21	0.23	0.39

¹SEMCOG Traffic Safety Manual 2016 Chapter 3

²Casualty ratio is the number of injury and fatal crashes divided by the total number of crashes

The crash frequency along E Brown Street is greater than the average rate for road segments of similar characteristics. However, the crash frequency is below the critical crash frequency. The casualty ratio at the intersection of S Old Woodward Avenue & E Brown Street is greater than the average rate for intersections of similar characteristics. However, the causality ratio is below the critical casualty ratio for intersections of similar characteristics.

As noted above, a majority of the crashes on these streets are related to existing congestion and/or on-street parking. The reconstruction of S Old Woodward Avenue will narrow the roadway, making a U-turn movement to access a parking space more difficult. It is expected that the prevalence of U-turn crashes will be reduced significantly after the City's reconstruction project is complete.

The three pedestrian crashes noted above occurred when the pedestrian was in a marked crosswalk. All three occurred in the Old Woodward Ave. and Brown St. intersection. Details of these incidents are noted below:

1. Pedestrian crossing northbound (east crosswalk), was struck by a southbound left turning vehicle (2017).

2. Pedestrian crossing southbound (east crosswalk) was struck by an eastbound right turning vehicle (2017).
3. Pedestrian crossing southbound (west crosswalk) was struck by a southbound right turning vehicle (2019).

All three incidents occurred under conditions that no longer exist. Relative to the incidents in 2017, they occurred prior to the reconstruction of the intersection, which reduced the crossing length. In addition, a 3-second leading pedestrian interval (which allows pedestrians time to enter the crosswalk before vehicles start turning) has been implemented since that time. Relative to the incident in 2019, it occurred when the Daxton Hotel was under construction. A sidewalk shed was erected at that time to protect pedestrians from the hazards of a multi-story building being constructed directly next to the intersection, which severely compromised sight distance at the corner. Given that conditions at this intersection have improved markedly since these incidents occurred, no further mitigation efforts are recommended.

The one bicycle crash occurred in the roadway, where a vehicle exiting a parking spot struck a bicycle. Additional public outreach to remind drivers to watch for pedestrians and bicyclists, or signage adjacent to on-street parking areas can help reduce these types of crashes. It is noted that no on-street parking spaces are being created as a result of this proposal.

A summary of the crash data is attached to this memorandum.

Conclusions and Recommendations for the Traffic Impact Study

The proposed mixed-use development is located in the southwest quadrant of Old Woodward Avenue and Brown Street in the City of Birmingham, MI. The current site plan proposes mixed use on Level 1 including a furniture store (3,200 square feet SF), a bistro restaurant (3,606 SF), and general office (8,164 SF). Level 2 will be used as general office (26,404 SF). Finally, levels 3 and 4 will be two (2) floors of residential with a total of 38 units. An anticipated opening date is planned for 2024, and the building will be constructed in a single phase. The proposed development will have a 59-space underground parking area with access to E Brown Street via one proposed driveway. The underground parking area will be primarily for the residential development, with 11 spaces reserved for the office spaces.

The proposed development is forecast to generate 77 new trips during the AM peak hour (63 inbound and 14 outbound from the site), 110 new trips during the PM peak hour (39 inbound and 71 outbound from the site) and 68 new trips during the Saturday peak hour (39 inbound and 29 outbound from the site).

An operational analysis was performed for existing, background, and total future (build) conditions for the intersections of:

- S Old Woodward Avenue & E Brown Street
- S Old Woodward Avenue & Daines Street
- E Brown Street & Pierce Street
- Daines Street & RH Driveway
- E Brown Street & Site Driveway

The operational analysis indicated that all approaches of the study intersections would operate at acceptable levels during the AM, PM, and Saturday peak hours.

Mr. Alexander Saroki, AIA, NCARB
March 9, 2022
Page 21

Overall, the proposed project does not have a significant impact at the study intersections or on the surrounding road network. No transportation infrastructure improvements will be required to support the development on opening day.

Attachments

R:\Projects\21F0088\Docs\Design\TIA\21F0088 E Brown Street TIS.docx

SITE PLAN



SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
BIRMINGHAM, MI 48009
P. 248.258.5707
F. 248.258.5515
SarokiArchitecture.com

Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009
Date: Issued For:
01-17-2022 SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION
02-15-2022 DESIGN REVISION

Sheet No.:
A110
First Floor Plan

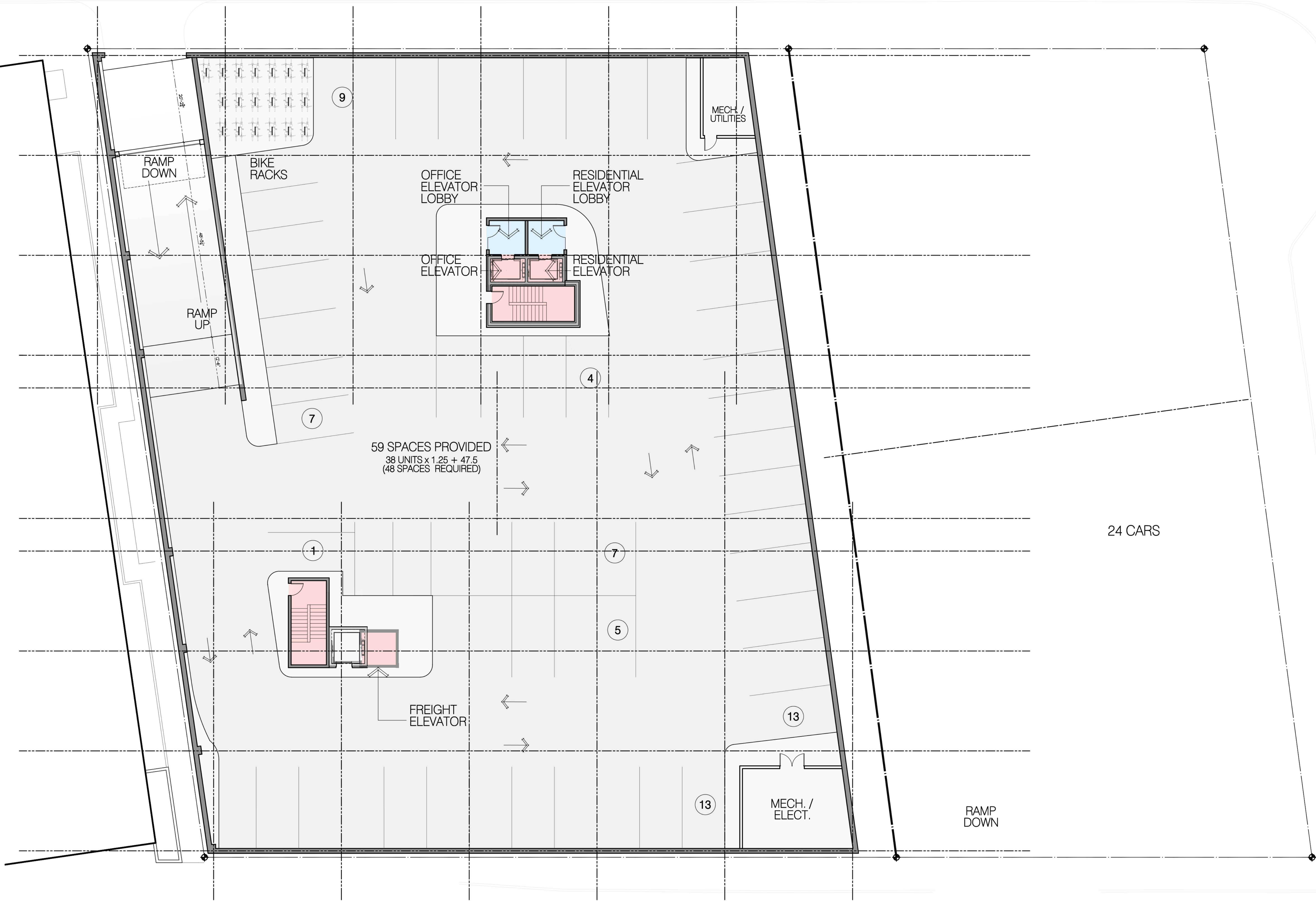
A
B
C
D
E
F
G
H

BROWN STREET

OLD WOODWARD AVENUE

24 CARS

DAINES STREET





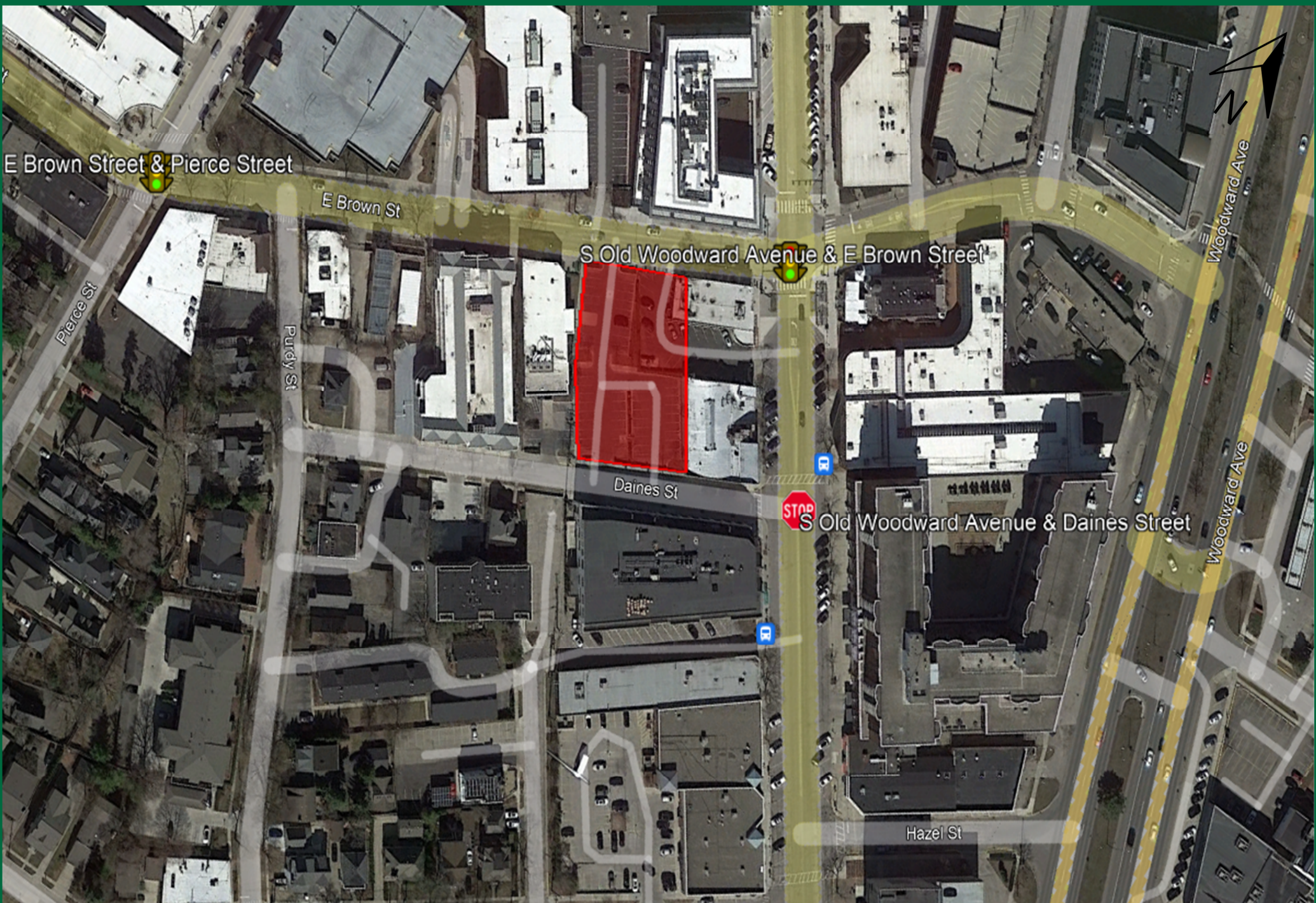
SAROKI
ARCHITECTURE
430 N. OLD WOODWARD
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Project:
Brown Street Mixed Use
Brown Street
Birmingham, MI 48009

Date: **Issued For:**
01-17-2022 SITE PLAN APPROVAL
01-25-2022 DESIGN REVISION
02-15-2022 DESIGN REVISION

Sheet No.:
A100
SOUTH / MAPLE DEMO ELEVATION

  **Lower Level Floor Plan**
SCALE: 3/32" = 1'-0"



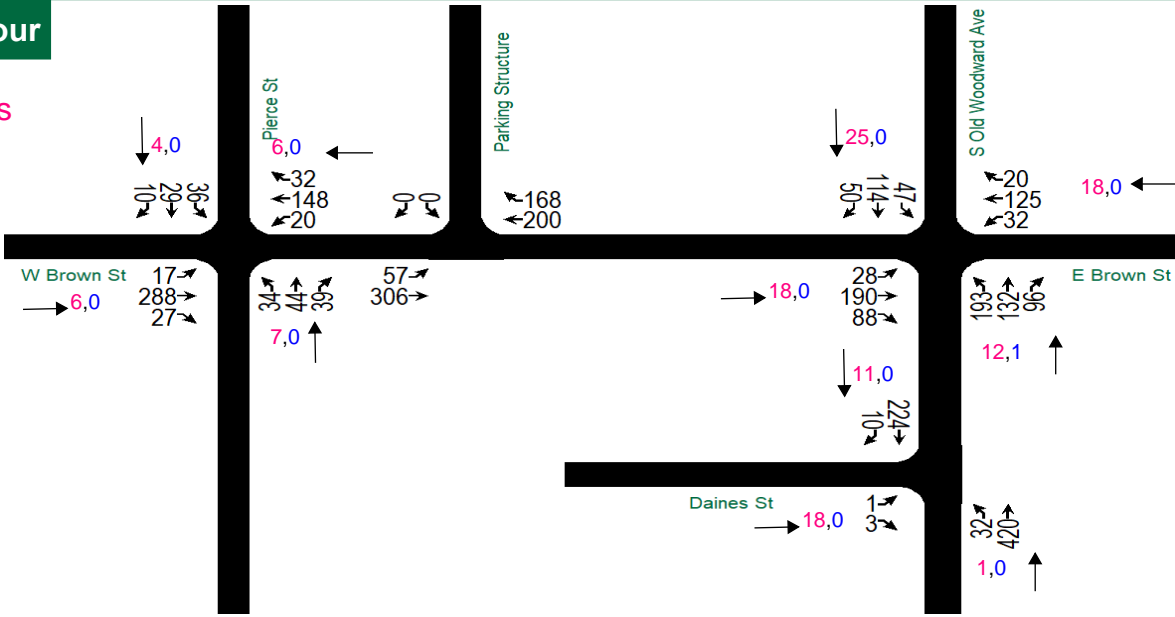
E Brown Street & Pierce Street

S Old Woodward Avenue & E Brown Street

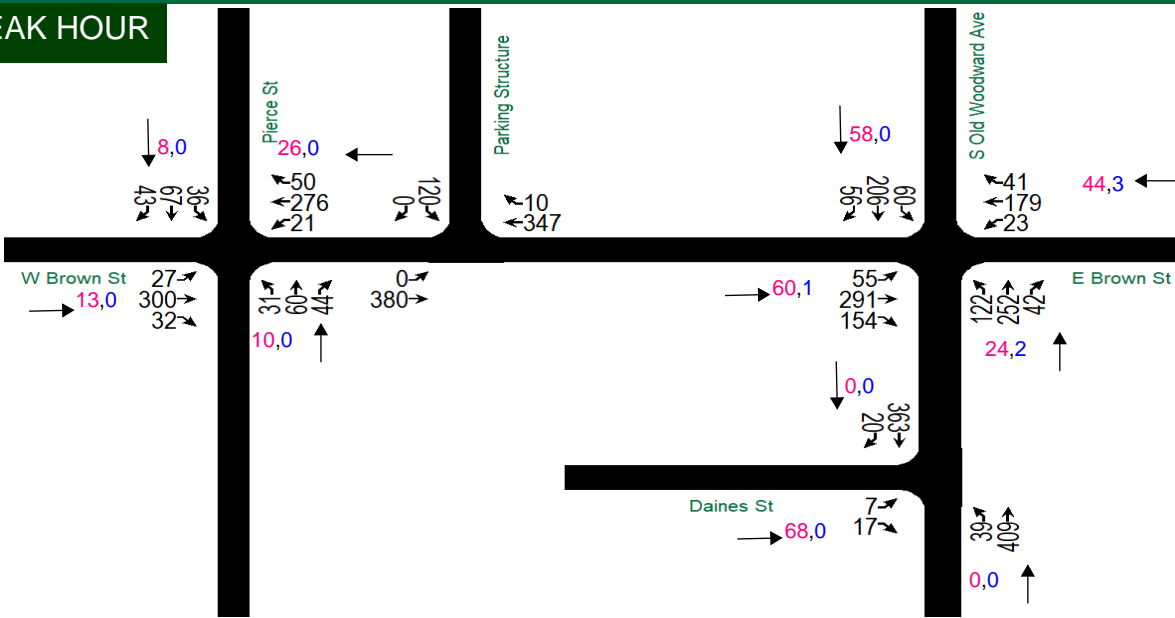
S Old Woodward Avenue & Daines Street

AM Peak Hour

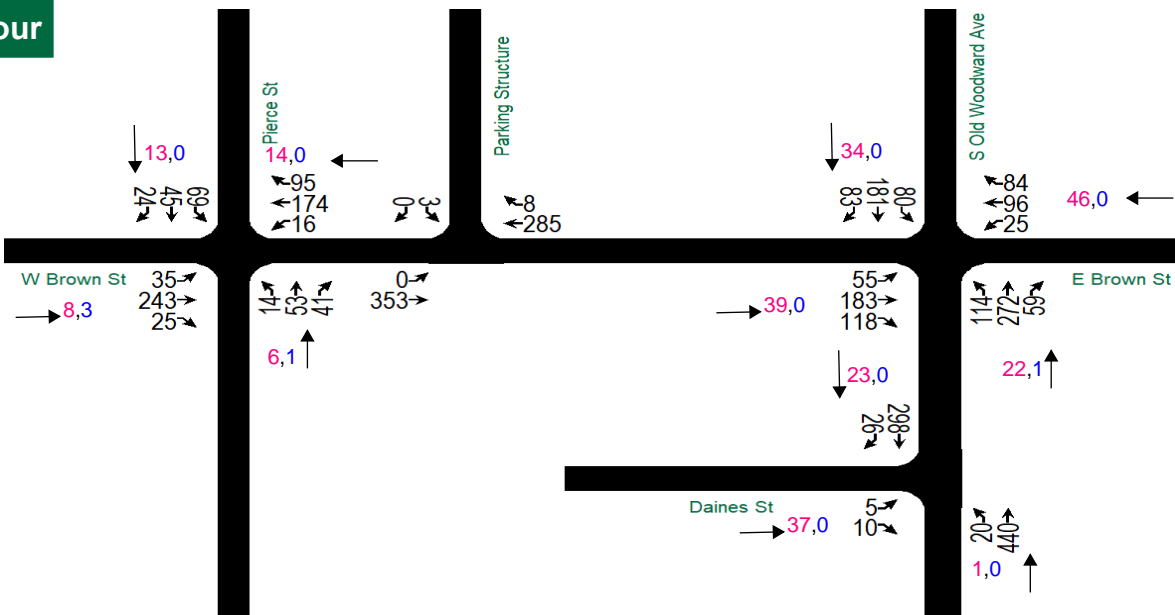
Pedestrians
Bikes



SAT MD PEAK HOUR



PM Peak Hour



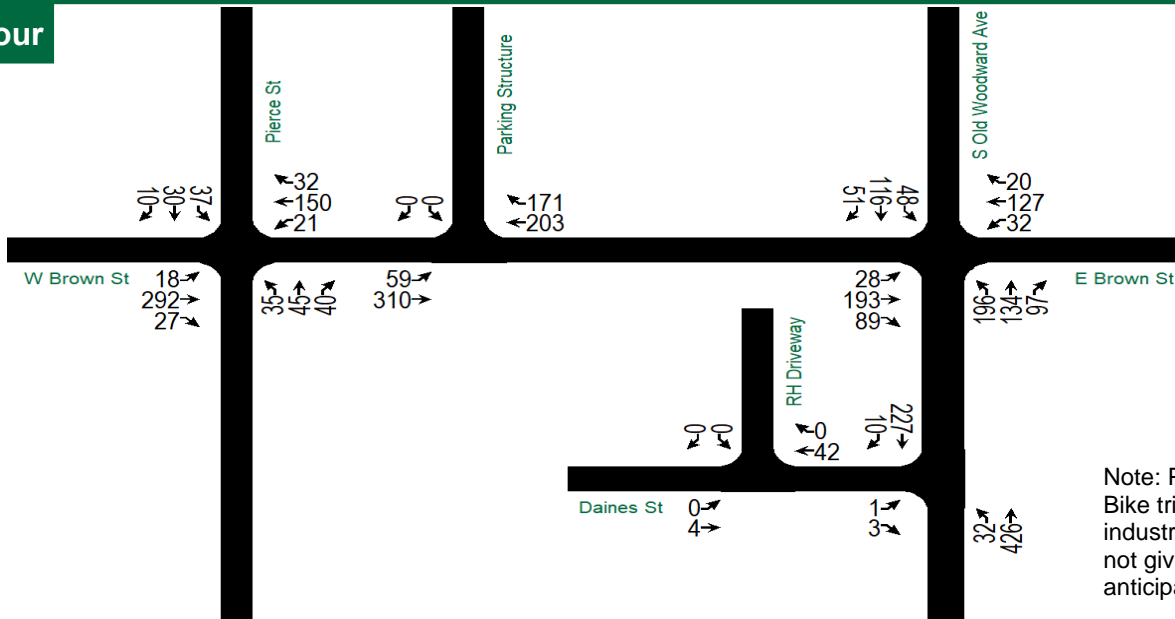
ROWE PROFESSIONAL
SERVICES COMPANY

Large Firm Resources. Personal Attention.

2021 Existing Conditions Volumes
E Brown Street TIS
Figure 2

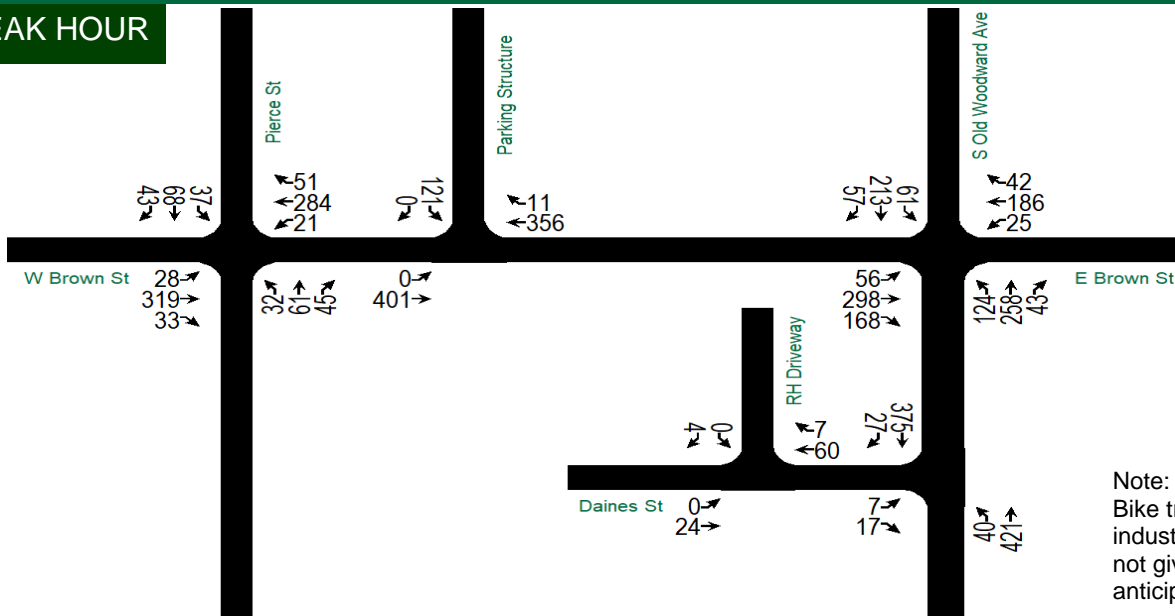
Not to scale – for illustrative purposes only

AM Peak Hour



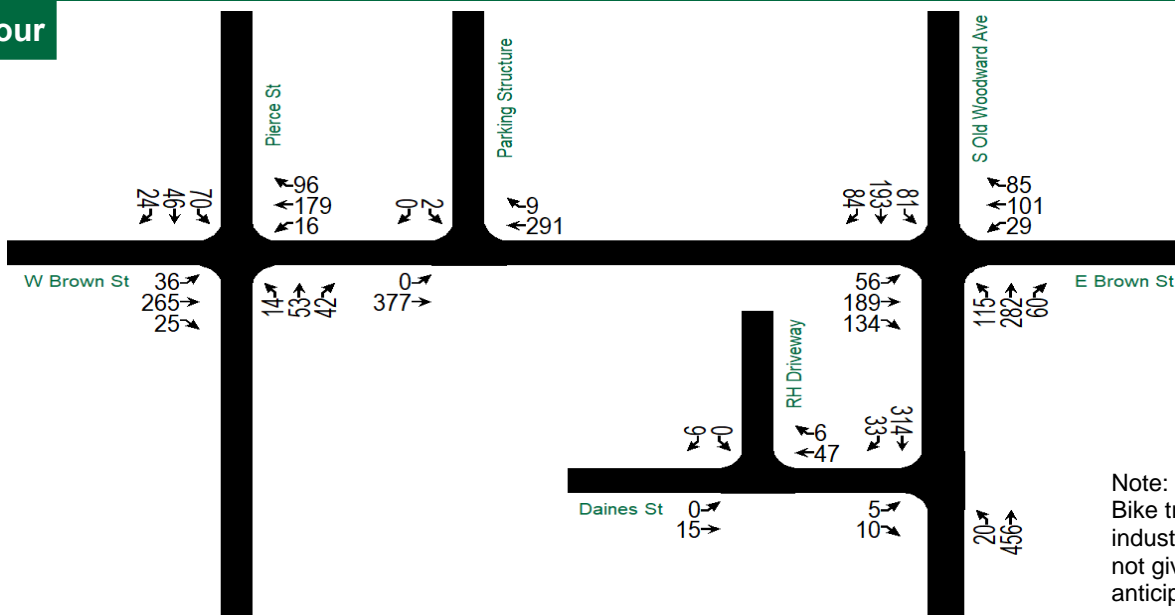
Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips

SAT MD PEAK HOUR



Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips

PM Peak Hour



Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips



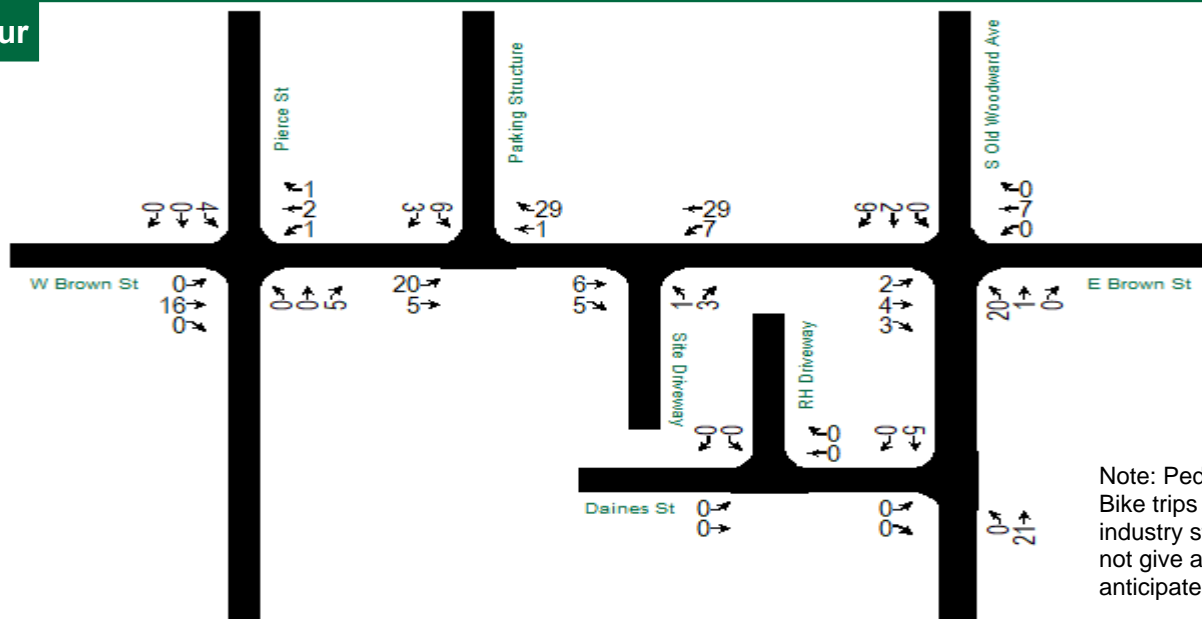
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2024 Background Conditions Volumes
E Brown Street TIS
Figure 3

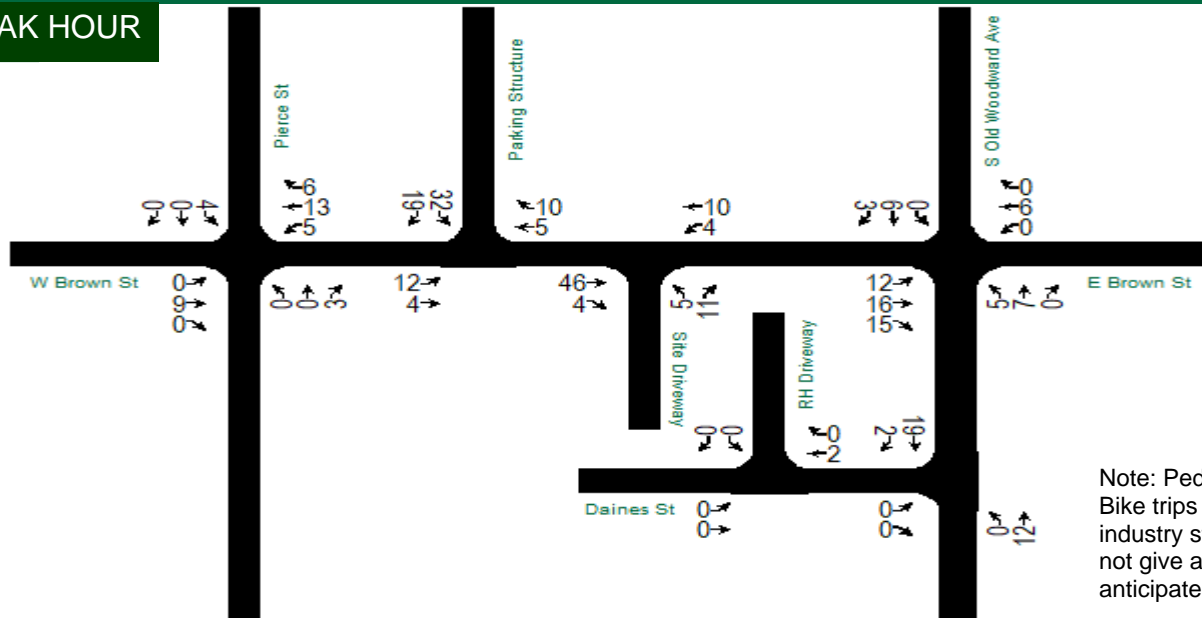
Not to scale – for illustrative purposes only

AM Peak Hour



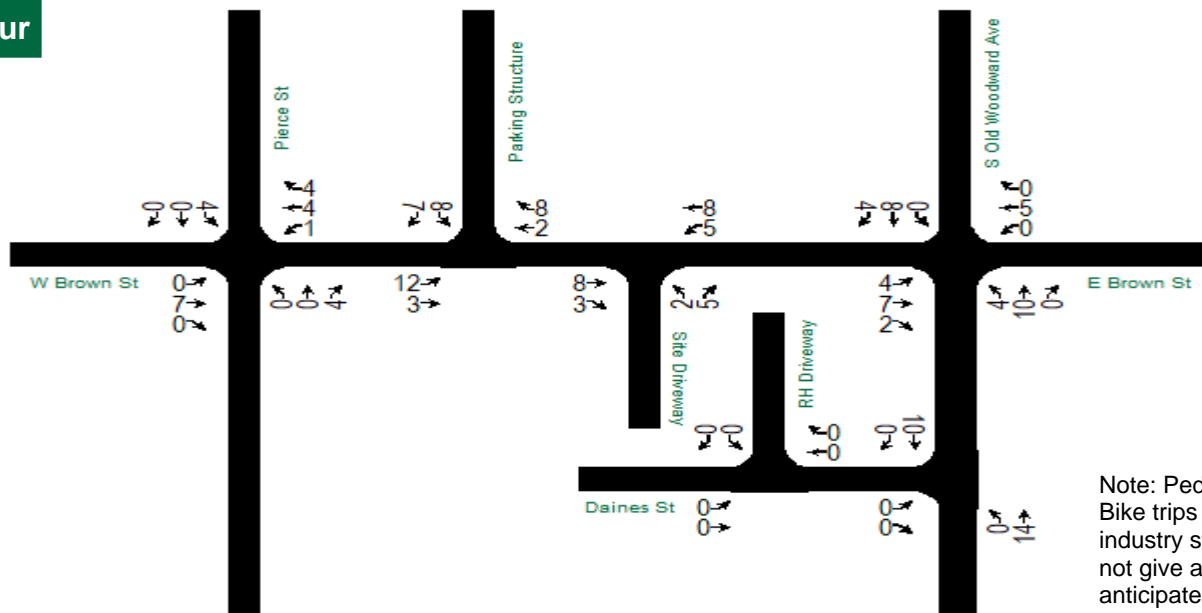
Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips

SAT MD PEAK HOUR



Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips

PM Peak Hour



Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips



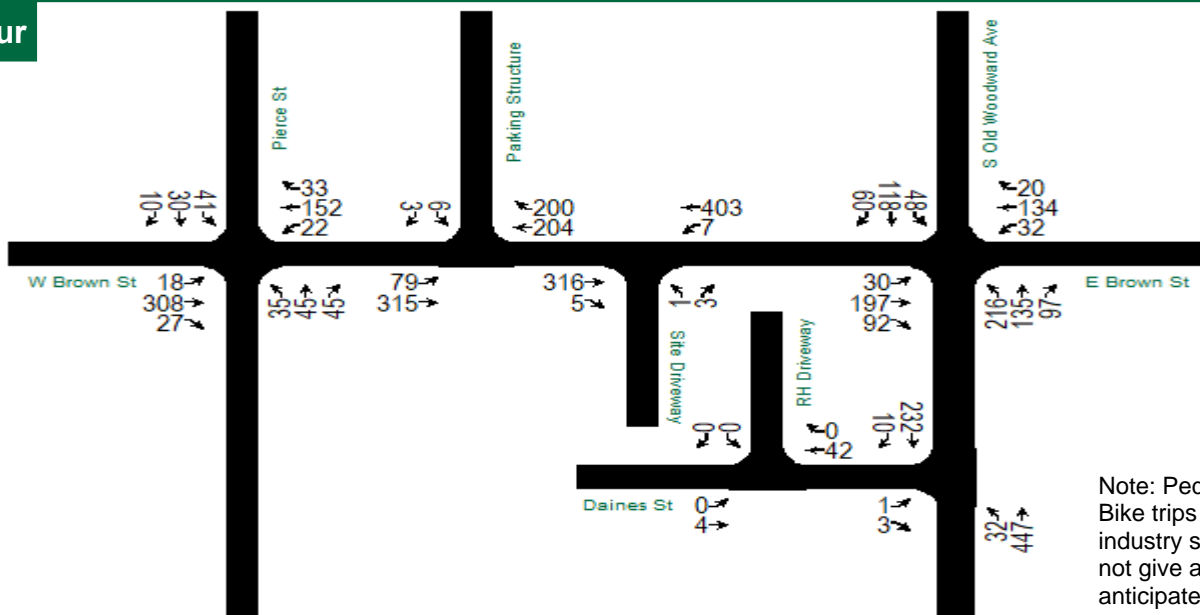
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Trip Generation Volumes
E Brown Street TIS
Figure 4

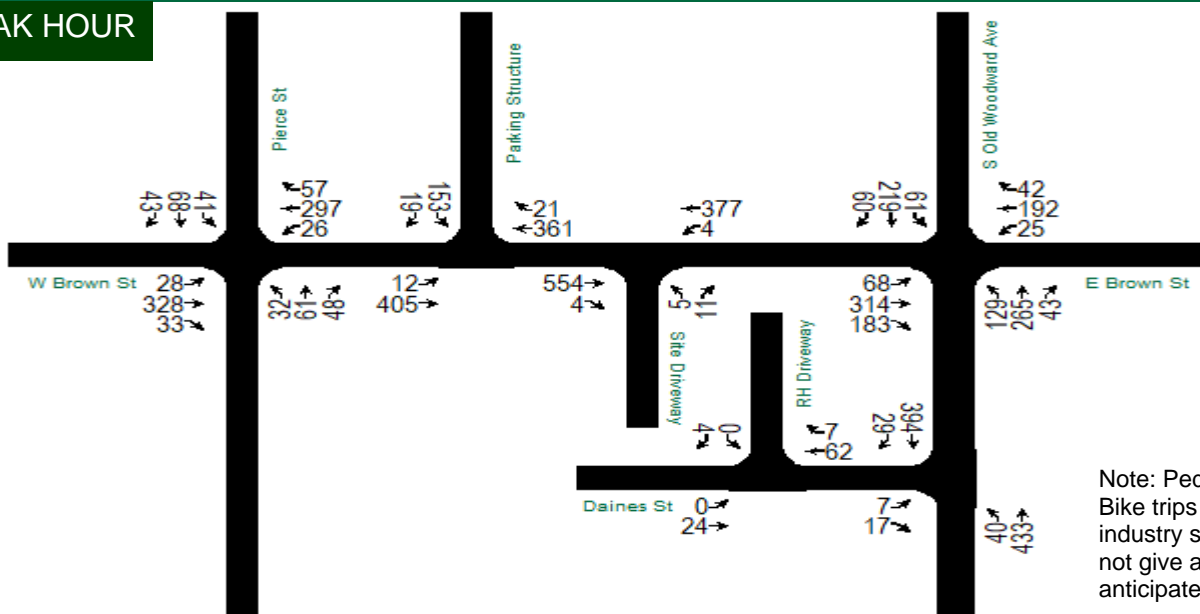
Not to scale – for illustrative purposes only

AM Peak Hour



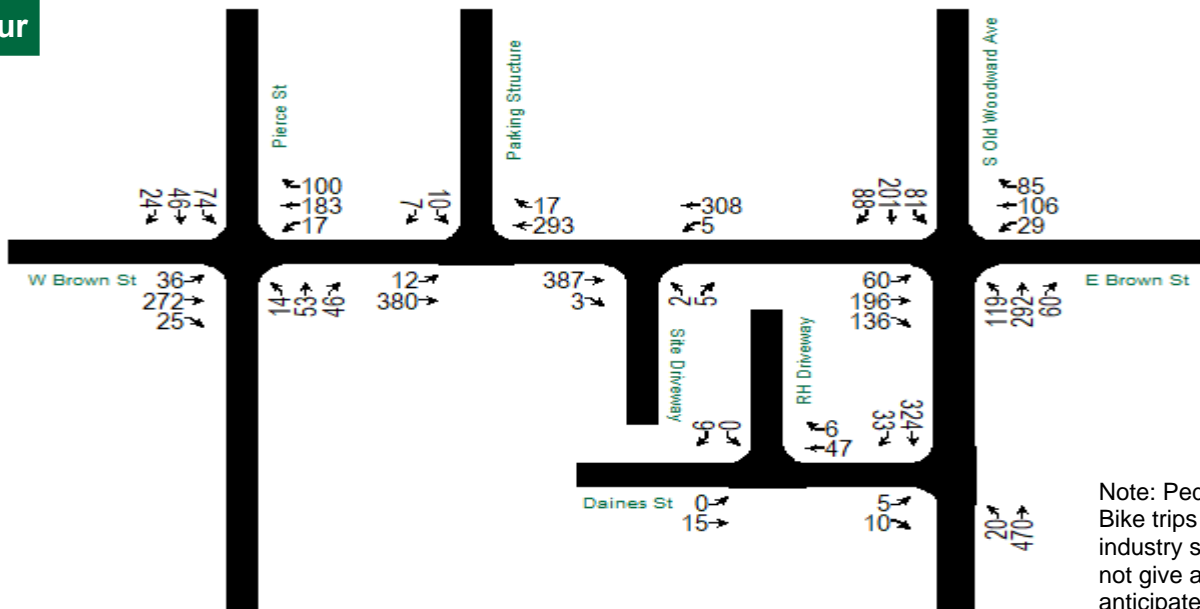
Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips

SAT MD PEAK HOUR



Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips

PM Peak Hour



Note: Pedestrian and Bike trips not included as industry standard does not give accurate way to anticipate trips



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**2024 Future Conditions Volumes
E Brown Street TIS
Figure 5**

Not to scale – for illustrative purposes only

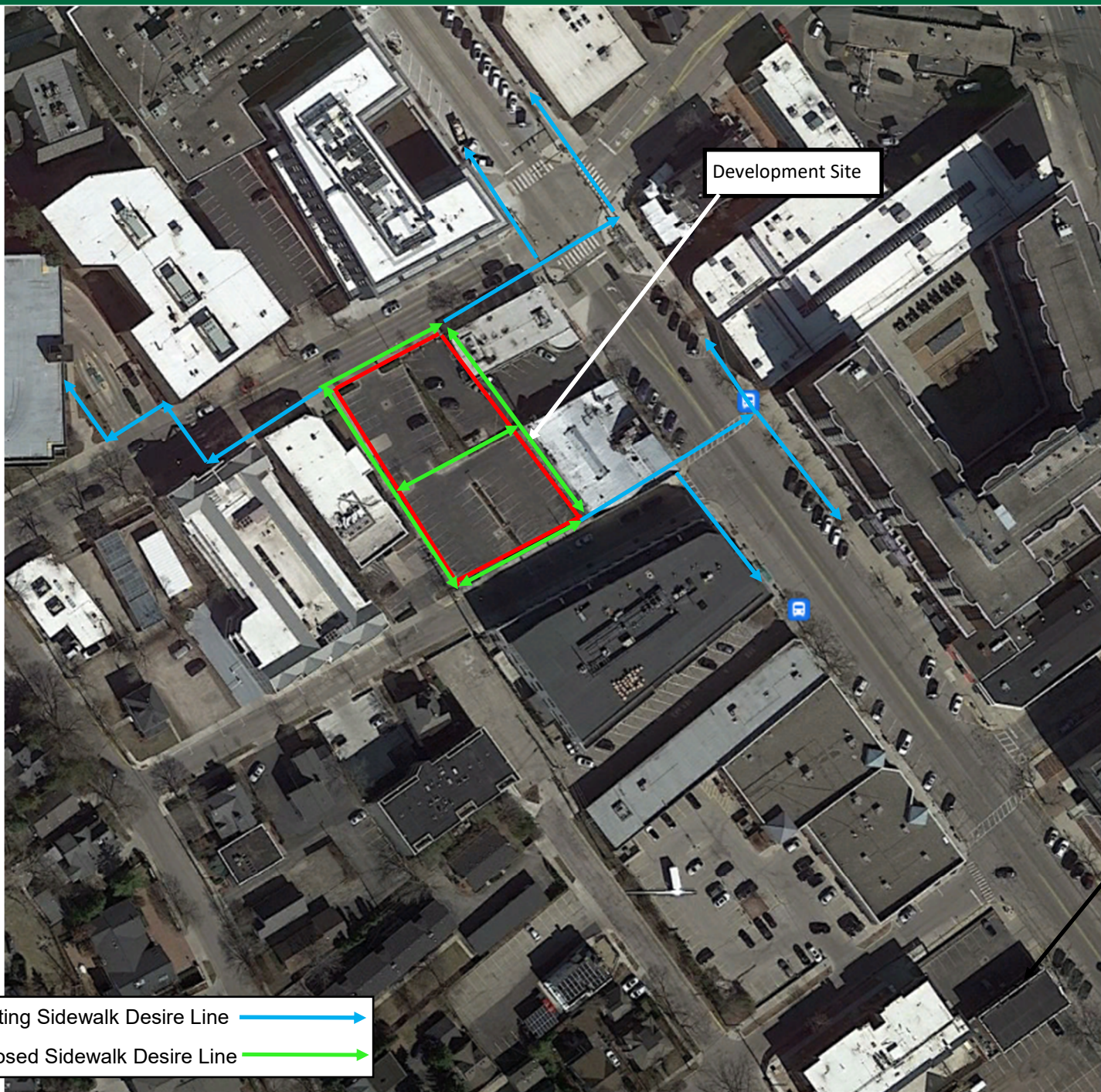


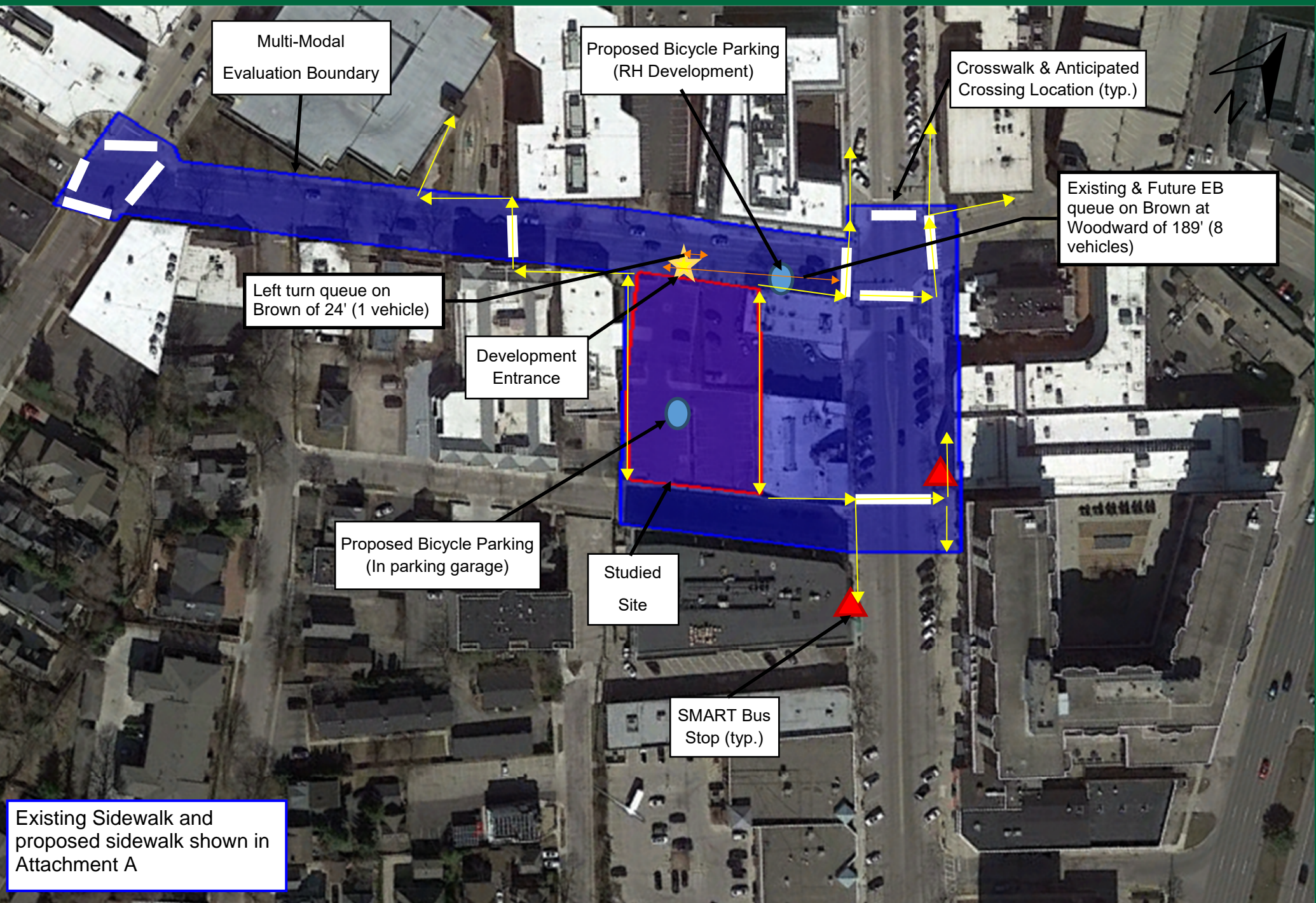
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**Bicycle Routing - Parking Garage
E Brown Street TIS
Figure 7**

Not to scale – for illustrative purposes only

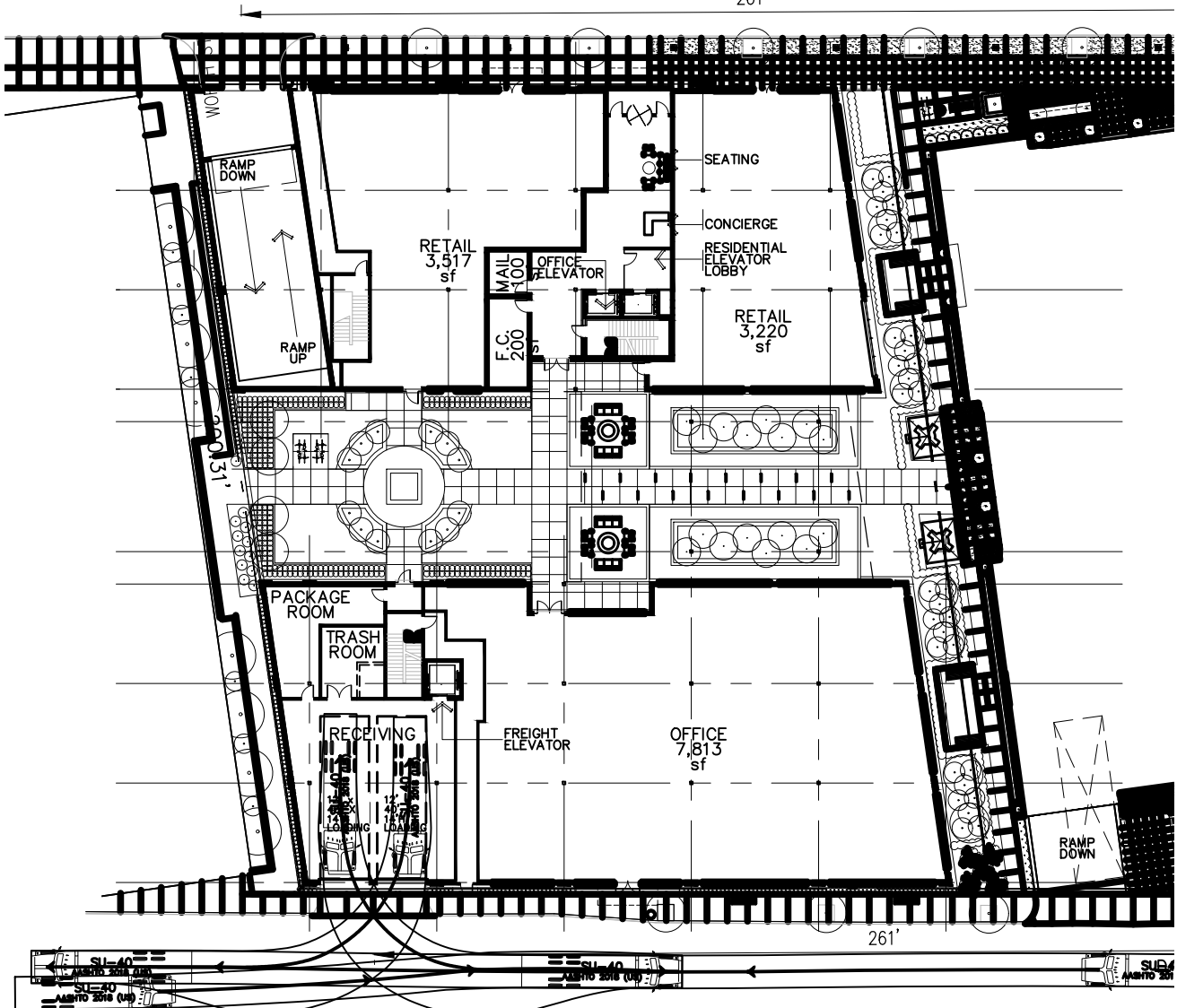




Existing Sidewalk and
proposed sidewalk shown in
Attachment A

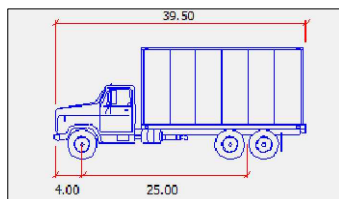
BROWN STREET

261'



2

FIR



SINGLE UNIT DETAIL

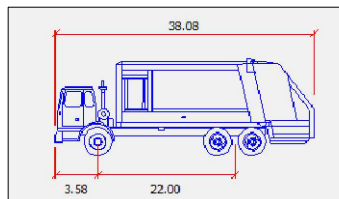
PREPARED FOR:
Brown Street Mixed Use Development
 Turning Movements – Single Unit
 Figure 10

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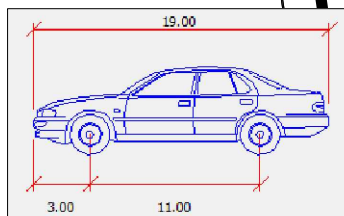
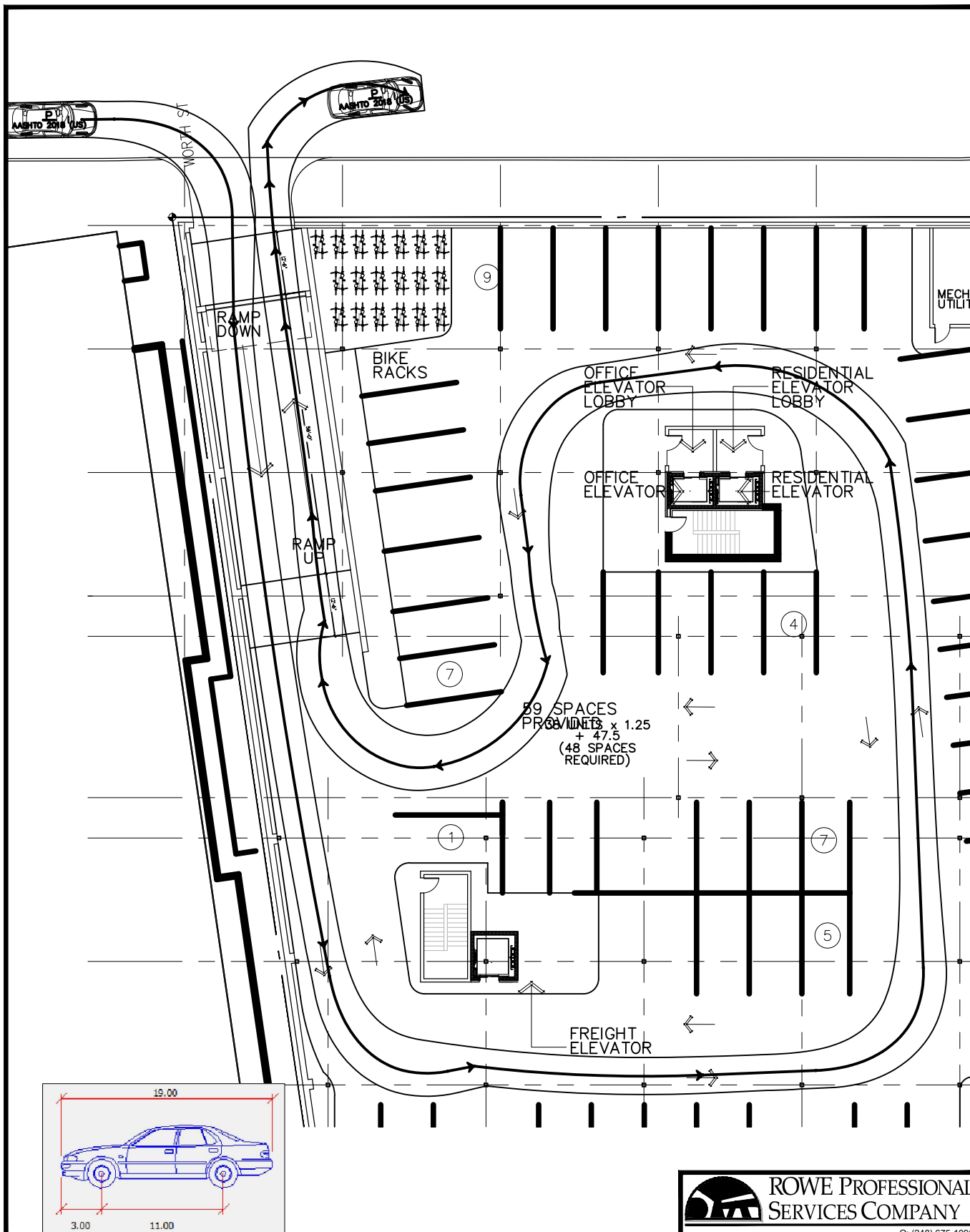
27280 Haggerty Road, Suite C-2
 Farmington Hills, MI 48331

O: (248) 675-1096
 F: (800) 974-1704
 www.rowepsc.com

PLAN NO. N/A
 DATE: March, 2022
 PROJECT MGR: P. O'Meara
 REVIEWER: H. Savola
 SCALE: N/A SHEET NO: 1



R: \Projects\21F0088\Dwg\Construction Drawings\Exhibits\EX-21F0088-AUTOTURN.dwg



PASSENGER CAR DETAIL

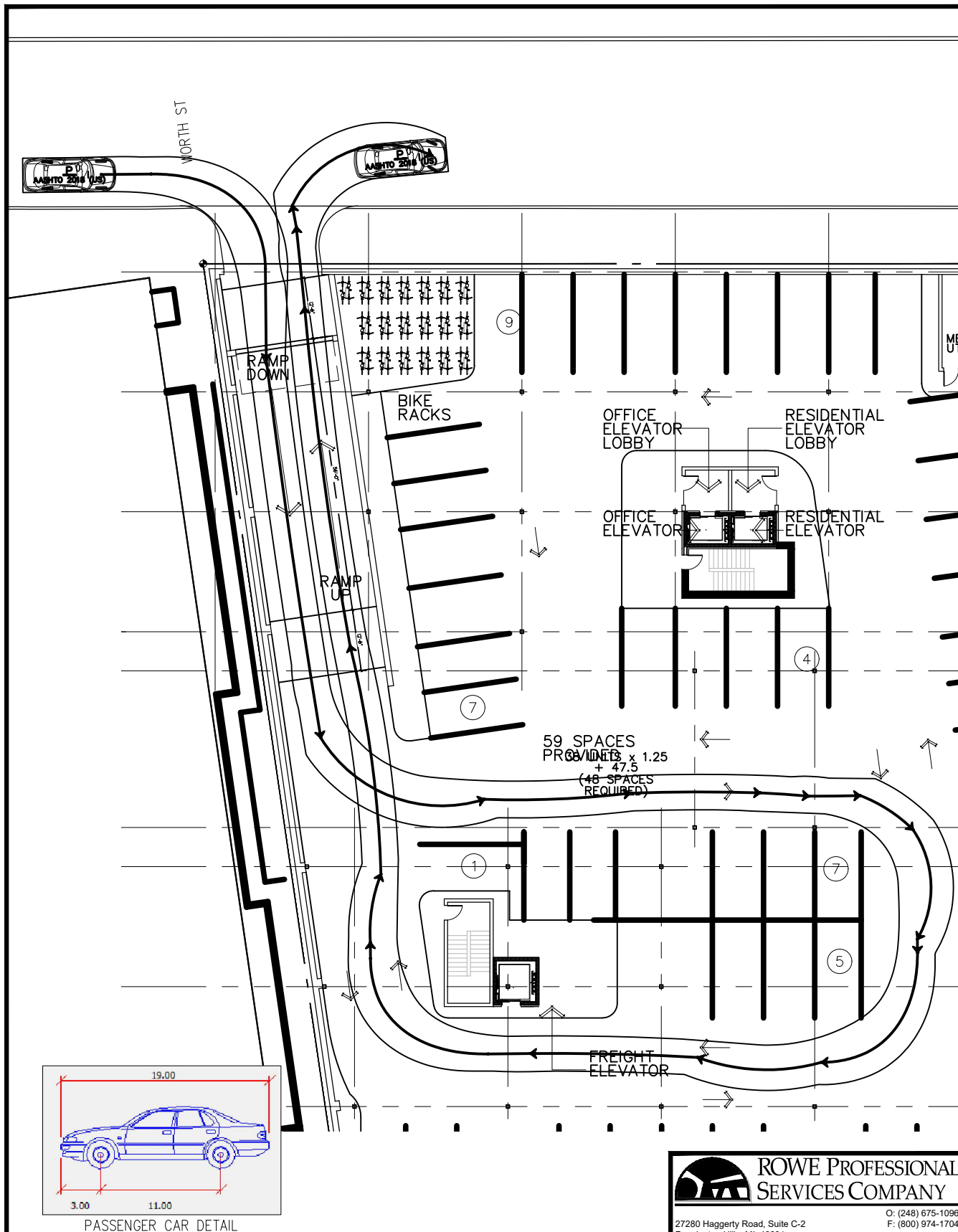
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PREPARED FOR:
Brown Street Mixed Use Development
Turning Movements – Parking Garage
Figure 12

PLAN NO. _____ N/A
DATE: _____ March, 2022
PROJECT MGR: _____ P. O'Meara
REVIEWER: _____ H. Savola
SCALE: _____ N/A SHEET NO: _____ 3

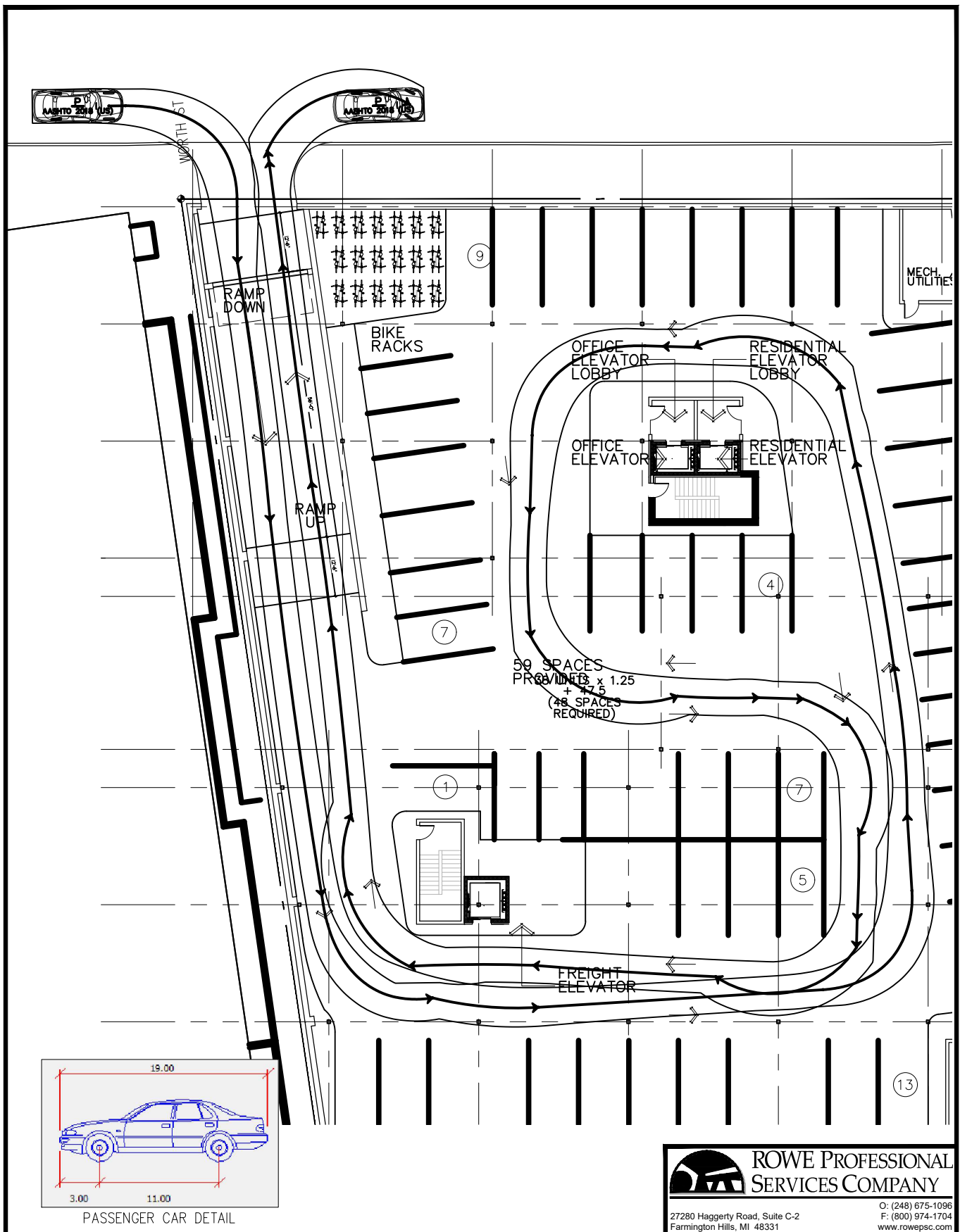


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Farmington Hills, MI 48331

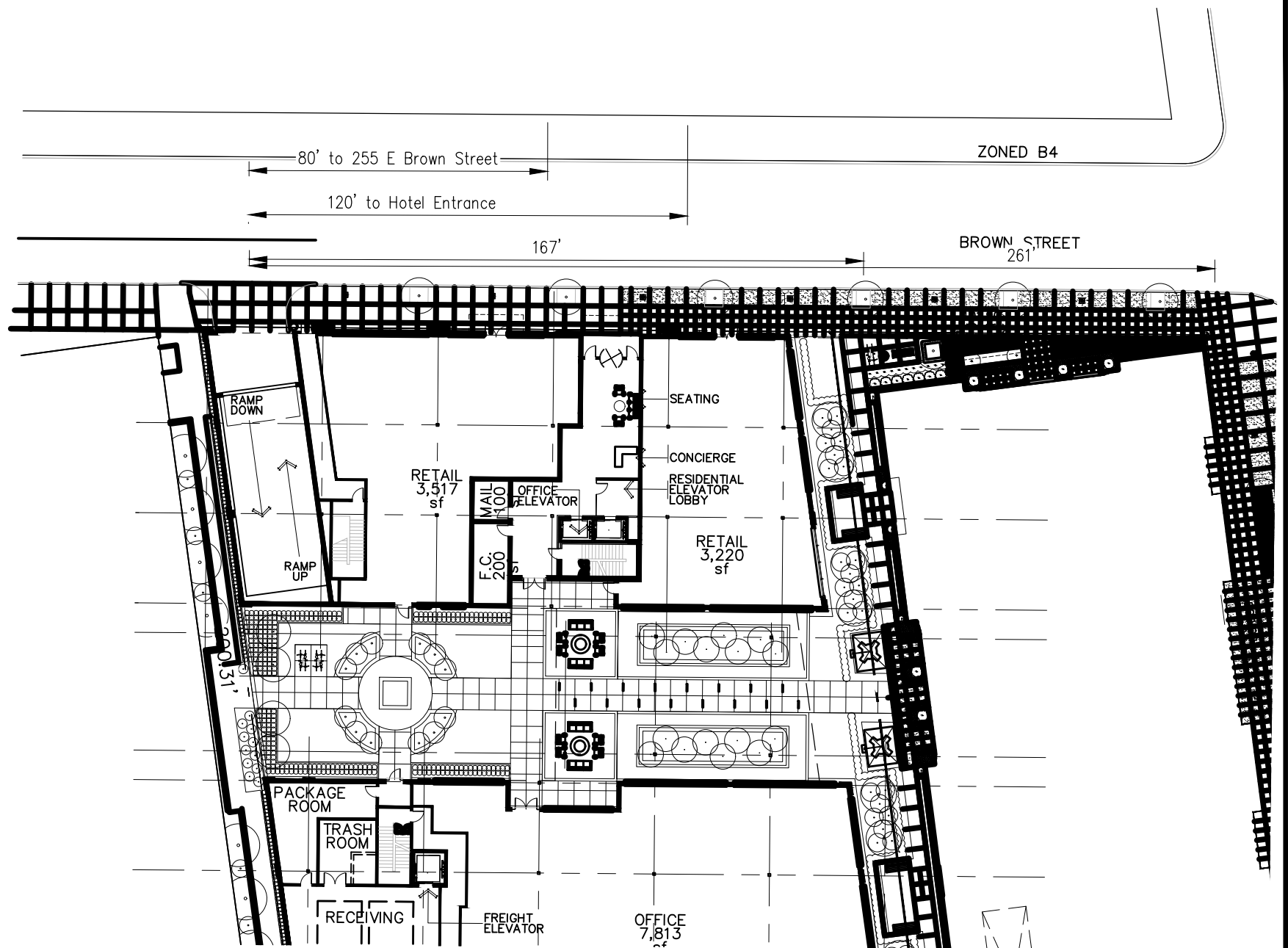
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PREPARED FOR:
Brown Street Mixed Use Development
Turning Movements – Parking Garage
Figure 13

PLAN NO. N/A
DATE: March, 2022
PROJECT MGR: P. O'Meara
REVIEWER: H. Savola
SCALE: N/A SHEET NO: 4



PREPARED FOR:
Brown Street Mixed Use Development
 Turning Movements – Parking Garage
 Figure 13



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PREPARED FOR:
Brown Street Mixed Use Development
Site Driveway Dimensions
Figure 14

PLAN NO.	N/A
DATE:	March, 2022
PROJECT MGR:	P. O'Meara
REVIEWER:	H. Savola
SCALE:	N/A
SHEET NO:	6

REPORT FIGURES

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#1 - S Old Woodward Ave & E Brown St	AM Peak 06/08/21		PHF	0.82			0.93			0.91			0.83		
			% Heavy	2%			4%			2%			1%		
		2021	Existing	193	132	96	47	114	50	28	190	88	32	125	20
		2021	Existing Adj.	193	132	96	47	114	50	28	190	88	32	125	20
		2024	Background	196	134	97	48	116	51	28	193	89	32	127	20
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	196	134	97	48	116	51	28	193	89	32	127	20
			Residential & Office	20											
			Retail	1				2	9	2	3	3		7	
			Total Site Gen	20	1	0	0	2	9	2	4	3	0	7	0
			Total Future	216	135	97	48	118	60	30	197	92	32	134	20

Count Date: 6/8/2021
Count Year: 2021
Existing Adj. Year: 2021
Existing Adjustment Rate: Varies
Growth Rate: 0.5%
Buildout Year: 2024
Scenario: AM Peak

Old Woodward & Brown St		
	AM Peak	PM Peak
NB	71%	30%
SB	21%	34%
EB	2%	14%
WB	13%	9%

Bckgrd. Dev. A: RH
Bckgrd. Dev. B:
Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#2 - S Old Woodward Ave & Daines St	AM Peak 06/08/21		PHF	0.84			0.92			0.60					
			% Heavy	3%			1%			0%					
		2021	Existing	32	420			224	10	1		3			
		2021	Existing Adj.	32	420			224	10	1		3			
		2024	Background	32	426			227	10	1		3			
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	32	426			227	10	1		3			
			Residential & Office	20				3							
			Retail	1				2							
			Total Site Gen	0	21			5	0	0		0			
			Total Future	32	447			232	10	1		3			

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#3 - E Brown St & Pierce St	AM Peak 10/14/21		PHF	0.72			0.91			0.84			0.75		
			% Heavy	0%			8%			2%			2%		
		2021	Existing	20	26	23	30	24	8	17	281	26	18	130	28
		2021	Existing Adj.	34	44	39	36	29	10	17	288	27	20	148	32
		2024	Background	35	45	40	37	30	10	18	292	27	21	150	32
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	35	45	40	37	30	10	18	292	27	21	150	32
			Residential & Office				5	4			15		1	2	1
			Retail								1				
			Total Site Gen	0	0	5	4	0	0	0	16	0	1	2	1
			Total Future	35	45	45	41	30	10	18	308	27	22	152	33

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#4 - Daines St & RH Driveway	AM Peak 10/14/21		PHF				0.92			0.92			0.92		
			% Heavy				2%			2%			2%		
		2021	Existing				0		0	0	4			42	0
		2021	Existing Adj.				0		0	0	4			42	0
		2024	Background				0		0	0	4			42	0
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				0		0	0	4			42	0
			Residential & Office												
			Retail												
			Total Site Gen				0		0	0	0			0	0
			Total Future				0		0	0	4			42	0

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#5 - E Brown St & Site Driveway	AM Peak 10/14/21		PHF	0.92						0.92			0.92		
			% Heavy	2%						2%			2%		
		2021	Existing							298				325	
		2021	Existing Adj.							305				369	
		2024	Background							311				374	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background							311				374	
			Residential & Office	1		3				5	5	7	29		
			Retail												
			Total Site Gen	1		3				5	5	7	29		
			Total Future	1		3				316	5	7	403		

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#1 - S Old Woodward Ave & E Brown St	PM Peak 06/08/21		PHF					0.89	0.85		0.84				0.91
			% Heavy					2%	4%		2%				1%
		2021	Existing	122	252	42	60	206	56	55	291	154	23	179	41
		2021	Existing Adj.	122	252	42	60	206	56	55	291	154	23	179	41
		2024	Background	124	255	43	61	209	57	56	295	156	23	182	42
			Bckgrd. Dev. A			3					3	12	2	4	
			Bckgrd. Dev. B					4							
			Bckgrd. Dev. C												
			Total Background	124	253	43	61	213	57	56	299	160	25	186	42
			Residential & Office	5				3	12	14	15			3	
			Retail		7			6			2			3	
			Total Site Gen	5	7	0	0	6	3	12	16	15	0	6	0
			Total Future	129	265	43	61	219	60	68	314	163	25	192	42

Count Date: 6/8/2021
Count Year: 2021
Existing Adj. Year: 2021
Existing Adjustment Rate: Varies
Growth Rate: 0.5%
Buildout Year: 2024
Scenario: PM Peak

Old Woodward & Brown St		
	AM Peak	PM Peak
NB	71%	30%
SB	21%	34%
EB	2%	14%
WB	13%	9%

Bckgrd. Dev. A: RH
Bckgrd. Dev. B:
Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#2 - S Old Woodward Ave & Daines St	PM Peak 06/08/21		PHF					0.91	0.85		0.75				
			% Heavy					2%	2%		0%				
		2021	Existing	39	409			363	20	7		17			
		2021	Existing Adj.	39	409			363	20	7		17			
		2024	Background	40	415			368	20	7		17			
			Bckgrd. Dev. A		6			7	7						
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	40	421			375	27	7		17			
			Residential & Office		5			13	2						
			Retail		7			6							
			Total Site Gen	0	12			19	2	0		0			
			Total Future	40	433			394	29	7		17			

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#3 - E Brown St & Pierce St	PM Peak 10/14/21		PHF					0.70	0.83		0.82				0.86
			% Heavy					3%	0%		1%				0%
		2021	Existing	24	46	34	27	50	32	24	262	28	19	253	46
		2021	Existing Adj.	31	60	44	36	67	43	27	300	32	21	276	50
		2024	Background	32	61	45	37	68	43	28	304	33	21	280	51
			Bckgrd. Dev. A								15			4	
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	32	61	45	37	68	43	28	319	33	21	284	51
			Residential & Office			2	2				5		4	12	5
			Retail		1	2					4		1	1	1
			Total Site Gen	0	0	3	4	0	0	0	9	0	5	13	6
			Total Future	32	61	48	41	68	43	28	328	33	26	297	57

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#4 - Daines St & RH Driveway	PM Peak 10/14/21		PHF					0.92		0.92					0.92
			% Heavy					2%		1%					2%
		2021	Existing				0		0	0	24			59	0
		2021	Existing Adj.				0		0	0	24			59	0
		2024	Background				0		0	0	24			60	0
			Bckgrd. Dev. A												
			Bckgrd. Dev. B						4						7
			Bckgrd. Dev. C												
			Total Background				0		4	0	24			60	7
			Residential & Office											2	
			Retail												
			Total Site Gen				0		0	0	0			2	0
			Total Future				0		4	0	24			62	7

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#5 - E Brown St & Site Driveway	PM Peak 10/14/21		PHF					0.92		0.92					0.92
			% Heavy					2%		2%					2%
		2021	Existing							502				319	
		2021	Existing Adj.							514				362	
		2024	Background							524				370	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background							524				370	
			Residential & Office	5		11				30	4	4		7	
			Retail												
			Total Site Gen	5		11				30	4	4		7	
			Total Future	5		11				554	4	4		377	

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#1 - S Old Woodward Ave & E Brown St	Sat Peak 10/16/21		PHF	0.85			0.95			0.82			0.85		
			% Heavy	2%			1%			1%			0%		
		2021	Existing	91	207	47	64	145	66	44	146	94	20	77	67
		2021	Existing Adj.	114	272	59	80	181	83	55	183	118	25	96	84
		2024	Background	115	276	60	81	184	84	56	185	119	25	98	85
			Bckgrd. Dev. A		6			9			4	15	4	3	
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	115	282	60	81	193	84	56	189	134	29	101	85
			Residential & Office	4				4	4	4	2			2	
			Retail		10			8			3			3	
			Total Site Gen	4	10	0	0	8	4	4	7	2	0	5	0
			Total Future	119	292	60	81	201	88	60	196	136	29	106	85

Count Date: 10/16/2021
Count Year: 2021
Existing Adj. Year: 2021
Existing Adjustment Rate: 1.25
Growth Rate: 0.5%
Buildout Year: 2024
Scenario: Sat Peak

Bckgrd. Dev. A: RH
Bckgrd. Dev. B:
Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#2 - S Old Woodward Ave & Daines St	Sat Peak 10/16/21		PHF	0.88			0.95			0.60					
			% Heavy	1%			1%			8%					
		2021	Existing	16	352			228	21	4		8			
		2021	Existing Adj.	20	440			298	26	5		10			
		2024	Background	20	446			301	27	5		10			
			Bckgrd. Dev. A		10			13	6						
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	20	456			314	33	5		10			
			Residential & Office		4			2							
			Retail		10			8							
			Total Site Gen	0	14			10	0	0		0			
			Total Future	20	470			324	33	5		10			

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#3 - E Brown St & Pierce St	Sat Peak 10/16/21		PHF	0.86			0.89			0.85			0.84		
			% Heavy	0%			0%			0%			1%		
		2021	Existing	11	42	33	55	36	19	28	194	20	13	139	76
		2021	Existing Adj.	14	53	41	69	45	24	35	243	25	16	174	95
		2024	Background	14	53	42	70	46	24	36	246	25	16	176	96
			Bckgrd. Dev. A								19			3	
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	14	53	42	70	46	24	36	265	25	16	179	96
			Residential & Office			2	2				3			2	2
			Retail			2	2				4		1	2	2
			Total Site Gen	0	0	4	4	0	0	0	7	0	1	4	4
			Total Future	14	53	46	74	46	24	36	272	25	17	183	100

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#4 - Daines St & RH Driveway	Sat Peak 10/14/21		PHF				0.92			0.92			0.92		
			% Heavy				2%			1%			2%		
		2021	Existing				0		0	0	12			37	0
		2021	Existing Adj.				0		0	0	15			46	0
		2024	Background				0		0	0	15			47	0
			Bckgrd. Dev. A						9						6
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				0		9	0	15			47	6
			Residential & Office												
			Retail												
			Total Site Gen				0		0	0	0			0	0
			Total Future				0		9	0	15			47	6

Intersection	Time period	Year	Movement	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
#5 - E Brown St & Site Driveway	Sat Peak 10/14/21		PHF	0.92						0.92			0.92		
			% Heavy	2%						2%			2%		
		2021	Existing								373			296	
		2021	Existing Adj.								373			296	
		2024	Background								382			303	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background								382			303	
			Residential & Office	2		5					5	3	5	5	
			Retail												
			Total Site Gen	2		5					5	3	5	5	
			Total Future	2		5					387	3	5	308	

E Brown & S Old Woodward - TMC

Thu Oct 14, 2021

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885170, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound						Old Woodward Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 7:00AM	7	9	8	0	24	2	2	10	1	0	13	7	0	23	8	0	31	5	0	10	5	0	15	4	83
7:15AM	8	12	4	0	24	2	4	13	3	0	20	4	2	24	8	0	34	3	0	13	2	0	15	2	93
7:30AM	14	16	7	0	37	1	2	7	6	0	15	3	5	42	10	0	57	5	1	22	2	0	25	4	134
7:45AM	14	20	8	0	42	4	4	19	8	0	31	7	2	53	22	1	78	4	0	23	2	0	25	5	176
Hourly Total	43	57	27	0	127	9	12	49	18	0	79	21	9	142	48	1	200	17	1	68	11	0	80	15	486
8:00AM	24	26	12	0	62	0	14	24	12	1	51	3	7	39	23	1	70	4	2	26	5	0	33	3	216
8:15AM	31	17	16	0	64	4	12	21	10	0	43	8	8	58	24	0	90	2	5	30	6	0	41	3	238
8:30AM	26	26	9	0	61	3	6	22	7	0	35	8	2	44	26	0	72	8	1	31	6	0	38	5	206
8:45AM	28	26	5	0	59	6	11	31	2	1	45	6	12	34	21	0	67	4	3	33	8	0	44	7	215
Hourly Total	109	95	42	0	246	13	43	98	31	2	174	25	29	175	94	1	299	18	11	120	25	0	156	18	875
4:00PM	26	36	7	0	69	5	6	36	8	0	50	8	15	57	31	0	103	9	2	24	14	0	40	25	262
4:15PM	25	35	5	0	65	1	8	38	11	0	57	9	9	49	22	0	80	12	3	37	12	0	52	11	254
4:30PM	20	44	14	0	78	4	14	43	9	0	66	15	8	63	23	0	94	16	5	30	10	0	45	13	283
4:45PM	24	33	17	0	74	1	8	42	9	0	59	19	8	52	28	0	88	14	3	31	6	0	40	10	261
Hourly Total	95	148	43	0	286	11	36	159	37	0	232	51	40	221	104	0	365	51	13	122	42	0	177	59	1060
5:00PM	29	47	9	0	85	13	6	43	8	0	57	7	10	62	43	1	116	18	10	36	14	1	61	15	319
5:15PM	23	44	11	0	78	5	9	40	18	0	67	8	17	69	34	4	124	7	8	30	25	0	63	9	332
5:30PM	29	44	8	0	81	4	9	40	13	0	62	9	12	58	26	0	96	8	7	29	15	0	51	10	290
5:45PM	17	45	14	0	76	0	4	35	16	0	55	10	18	42	41	0	101	6	9	29	10	0	48	12	280
Hourly Total	98	180	42	0	320	22	28	158	55	0	241	34	57	231	144	5	437	39	34	124	64	1	223	46	1221
Total	345	480	154	0	979	55	119	464	141	2	726	131	135	769	390	7	1301	125	59	434	142	1	636	138	3642
% Approach	35.2%	49.0%	15.7%	0%	-	-	16.4%	63.9%	19.4%	0.3%	-	-	10.4%	59.1%	30.0%	0.5%	-	-	9.3%	68.2%	22.3%	0.2%	-	-	-
% Total	9.5%	13.2%	4.2%	0%	26.9%	-	3.3%	12.7%	3.9%	0.1%	19.9%	-	3.7%	21.1%	10.7%	0.2%	35.7%	-	1.6%	11.9%	3.9%	0%	17.5%	-	-
Lights	341	464	154	0	959	-	118	451	141	2	712	-	134	757	387	7	1285	-	58	428	140	1	627	-	3583
% Lights	98.8%	96.7%	100%	0%	98.0%	-	99.2%	97.2%	100%	100%	98.1%	-	99.3%	98.4%	99.2%	100%	98.8%	-	98.3%	98.6%	98.6%	100%	98.6%	-	98.4%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	3	1	0	4	-	0	1	1	0	2	-	6
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0.3%	0%	0.3%	-	0%	0.2%	0.7%	0%	0.3%	-	0.2%
Buses and Single-Unit Trucks	4	16	0	0	20	-	1	13	0	0	14	-	1	9	2	0	12	-	1	5	1	0	7	-	53
% Buses and Single-Unit Trucks	1.2%	3.3%	0%	0%	2.0%	-	0.8%	2.8%	0%	0%	1.9%	-	0.7%	1.2%	0.5%	0%	0.9%	-	1.7%	1.2%	0.7%	0%	1.1%	-	1.5%
Pedestrians	-	-	-	-	-	53	-	-	-	-	-	130	-	-	-	-	-	121	-	-	-	-	-	135	
% Pedestrians	-	-	-	-	-	96.4%	-	-	-	-	-	99.2%	-	-	-	-	-	96.8%	-	-	-	-	-	97.8%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	3.6%	-	-	-	-	-	0.8%	-	-	-	-	-	3.2%	-	-	-	-	-	2.2%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & S Old Woodward - TMC

Thu Oct 14, 2021

Full Length (7 AM-9 AM, 4 PM-6 PM)

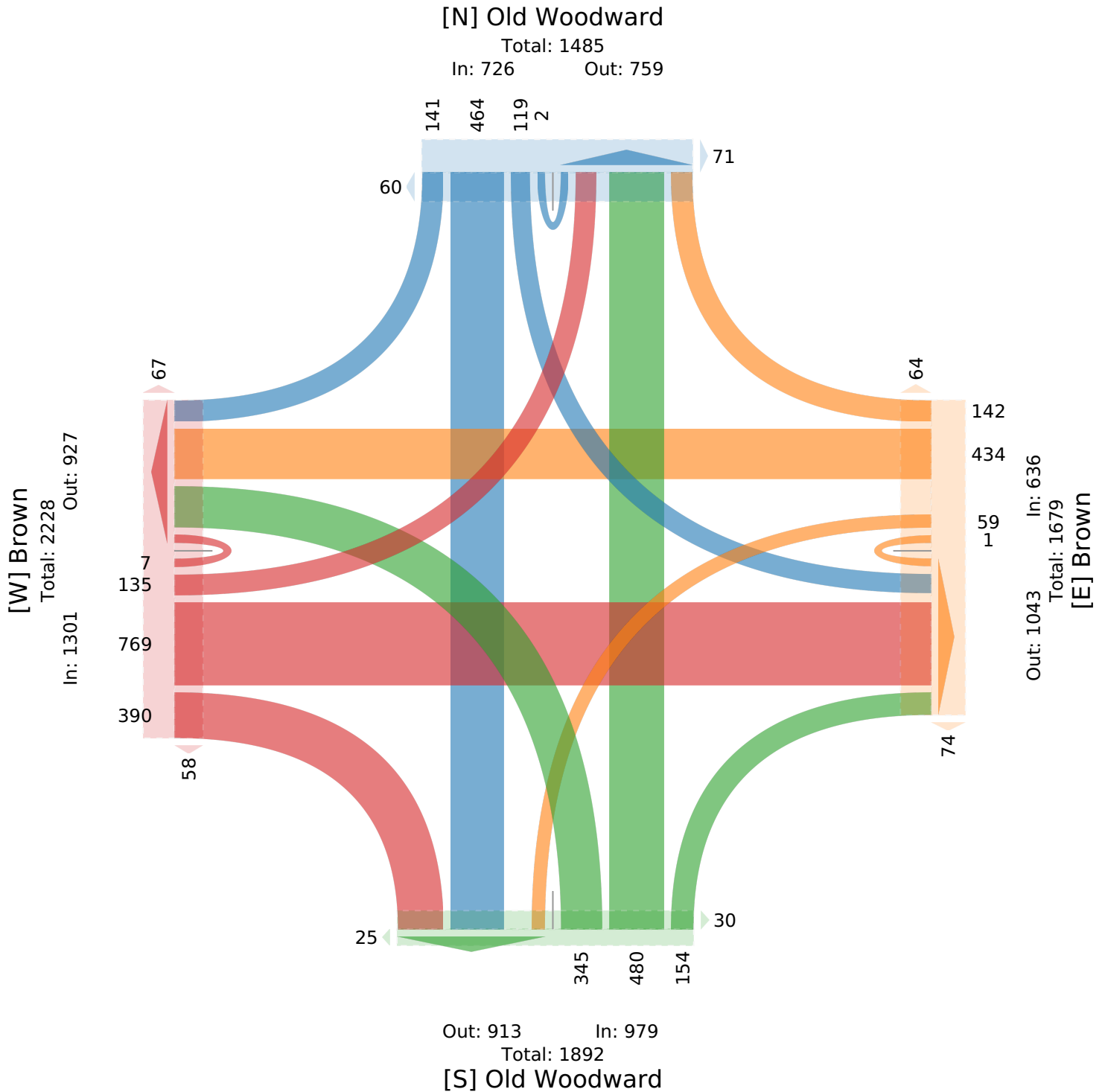
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885170, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & S Old Woodward - TMC

Thu Oct 14, 2021

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885170, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound						Old Woodward Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 8:00AM	24	26	12	0	62	0	14	24	12	1	51	3	7	39	23	1	70	4	2	26	5	0	33	3	216
8:15AM	31	17	16	0	64	4	12	21	10	0	43	8	8	58	24	0	90	2	5	30	6	0	41	3	238
8:30AM	26	26	9	0	61	3	6	22	7	0	35	8	2	44	26	0	72	8	1	31	6	0	38	5	206
8:45AM	28	26	5	0	59	6	11	31	2	1	45	6	12	34	21	0	67	4	3	33	8	0	44	7	215
Total	109	95	42	0	246	13	43	98	31	2	174	25	29	175	94	1	299	18	11	120	25	0	156	18	875
% Approach	44.3%	38.6%	17.1%	0%	-	-	24.7%	56.3%	17.8%	1.1%	-	-	9.7%	58.5%	31.4%	0.3%	-	-	7.1%	76.9%	16.0%	0%	-	-	-
% Total	12.5%	10.9%	4.8%	0%	28.1%	-	4.9%	11.2%	3.5%	0.2%	19.9%	-	3.3%	20.0%	10.7%	0.1%	34.2%	-	1.3%	13.7%	2.9%	0%	17.8%	-	-
PHF	0.879	0.913	0.656	-	0.961	-	0.768	0.790	0.646	0.500	0.853	-	0.604	0.754	0.904	0.250	0.831	-	0.550	0.909	0.781	-	0.886	-	0.919
Lights	109	92	42	0	243	-	43	94	31	2	170	-	28	169	92	1	290	-	11	116	24	0	151	-	854
% Lights	100%	96.8%	100%	0%	98.8%	-	100%	95.9%	100%	100%	97.7%	-	96.6%	96.6%	97.9%	100%	97.0%	-	100%	96.7%	96.0%	0%	96.8%	-	97.6%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	3	0	0	3	-	0	4	0	0	4	-	1	6	2	0	9	-	0	4	1	0	5	-	21
% Buses and Single-Unit Trucks	0%	3.2%	0%	0%	1.2%	-	0%	4.1%	0%	0%	2.3%	-	3.4%	3.4%	2.1%	0%	3.0%	-	0%	3.3%	4.0%	0%	3.2%	-	2.4%
Pedestrians	-	-	-	-	-	12	-	-	-	-	-	25	-	-	-	-	-	18	-	-	-	-	-	16	-
% Pedestrians	-	-	-	-	-	92.3%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	88.9%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	-	-	7.7%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	11.1%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & S Old Woodward - TMC

Thu Oct 14, 2021

AM Peak (8 AM - 9 AM)

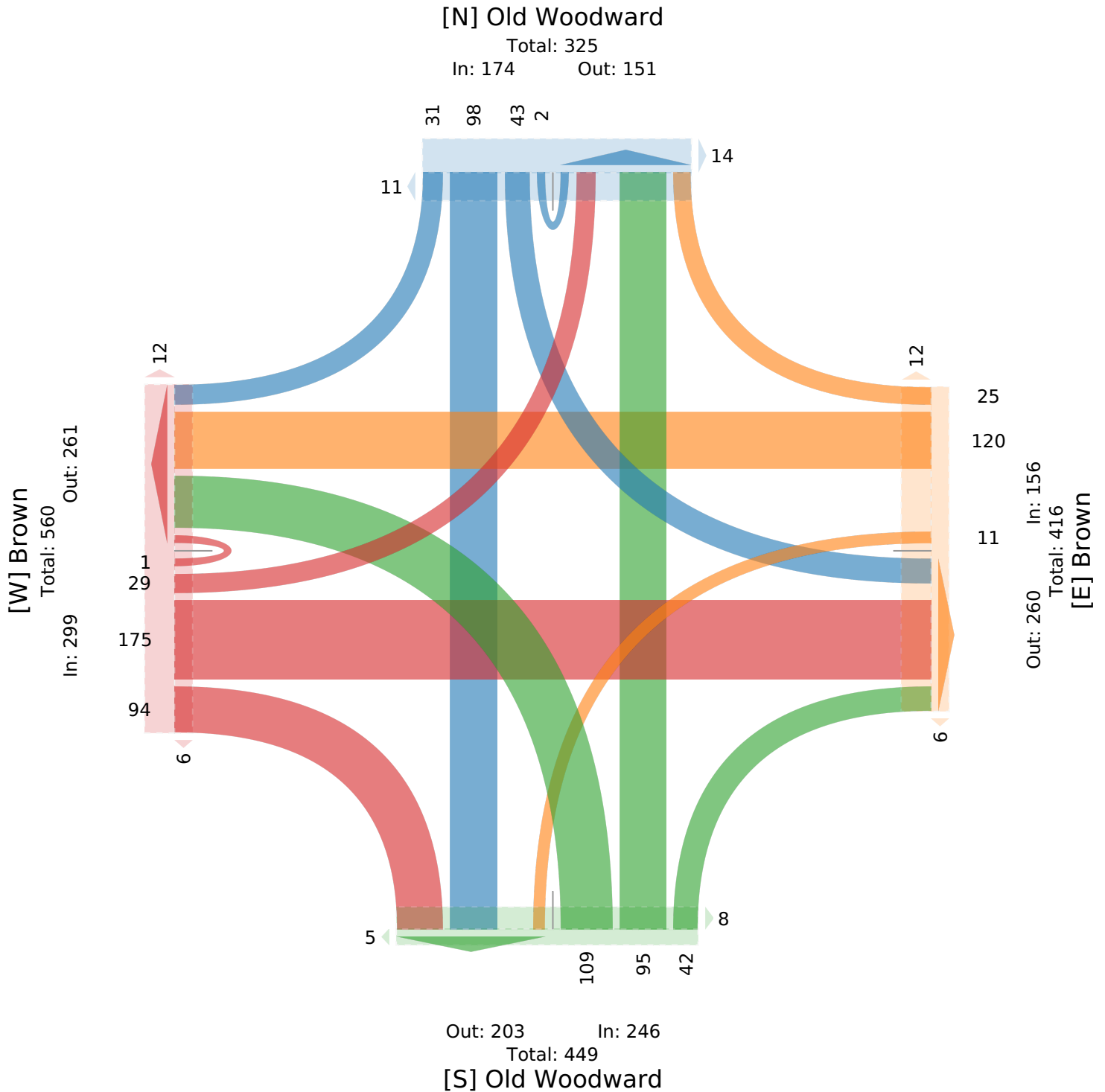
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885170, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & S Old Woodward - TMC

Thu Oct 14, 2021

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885170, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound							Old Woodward Southbound							Brown Eastbound							Brown Westbound							
Time	L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		Int
2021-10-14 5:00PM	29	47	9	0	85	13		6	43	8	0	57	7		10	62	43	1	116	18		10	36	14	1	61	15		319
5:15PM	23	44	11	0	78	5		9	40	18	0	67	8		17	69	34	4	124	7		8	30	25	0	63	9		332
5:30PM	29	44	8	0	81	4		9	40	13	0	62	9		12	58	26	0	96	8		7	29	15	0	51	10		290
5:45PM	17	45	14	0	76	0		4	35	16	0	55	10		18	42	41	0	101	6		9	29	10	0	48	12		280
Total	98	180	42	0	320	22		28	158	55	0	241	34		57	231	144	5	437	39		34	124	64	1	223	46		1221
% Approach	30.6%	56.3%	13.1%	0%	-	-		11.6%	65.6%	22.8%	0%	-	-		13.0%	52.9%	33.0%	1.1%	-	-		15.2%	55.6%	28.7%	0.4%	-	-		-
% Total	8.0%	14.7%	3.4%	0%	26.2%	-		2.3%	12.9%	4.5%	0%	19.7%	-		4.7%	18.9%	11.8%	0.4%	35.8%	-		2.8%	10.2%	5.2%	0.1%	18.3%	-		-
PHF	0.845	0.957	0.750	-	0.941	-		0.778	0.919	0.764	-	0.899	-		0.792	0.837	0.837	0.313	0.881	-		0.850	0.861	0.640	0.250	0.885	-		0.919
Lights	96	177	42	0	315	-		28	156	55	0	239	-		57	228	144	5	434	-		34	124	64	1	223	-		1211
% Lights	98.0%	98.3%	100%	0%	98.4%	-		100%	98.7%	100%	0%	99.2%	-		100%	98.7%	100%	100%	99.3%	-		100%	100%	100%	100%	100%	-		99.2%
Articulated Trucks	0	0	0	0	0	-		0	0	0	0	0	-		0	1	0	0	1	-		0	0	0	0	0	-		1
% Articulated Trucks	0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%	0.4%	0%	0%	0.2%	-		0%	0%	0%	0%	0%	-		0.1%
Buses and Single-Unit Trucks	2	3	0	0	5	-		0	2	0	0	2	-		0	2	0	0	2	-		0	0	0	0	0	-		9
% Buses and Single-Unit Trucks	2.0%	1.7%	0%	0%	1.6%	-		0%	1.3%	0%	0%	0.8%	-		0%	0.9%	0%	0%	0.5%	-		0%	0%	0%	0%	0%	-		0.7%
Pedestrians	-	-	-	-	-	22		-	-	-	-	-	34		-	-	-	-	-	39		-	-	-	-	-	46		
% Pedestrians	-	-	-	-	-	100%		-	-	-	-	-	100%		-	-	-	-	-	100%		-	-	-	-	-	100%		-
Bicycles on Crosswalk	-	-	-	-	-	0		-	-	-	-	-	0		-	-	-	-	-	0		-	-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & S Old Woodward - TMC

Thu Oct 14, 2021

PM Peak (5 PM - 6 PM) - Overall Peak Hour

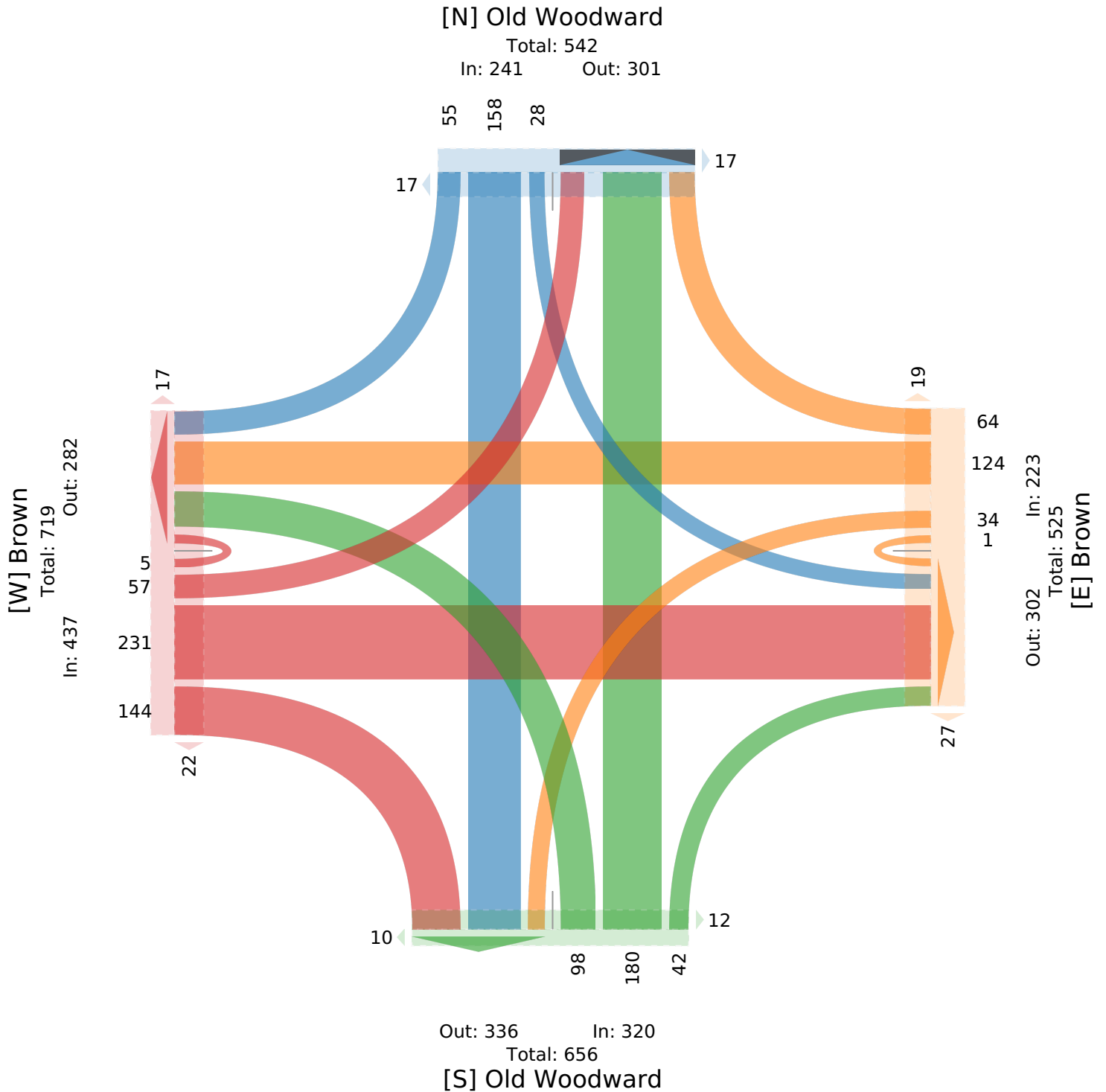
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885170, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & S Old Woodward - TMC

Sat Oct 16, 2021

Full Length (11 AM-1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885167, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound						Old Woodward Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-16 11:00AM	18	45	16	0	79	6	10	44	14	0	68	12	7	39	10	1	57	8	5	20	17	0	42	16	246
11:15AM	17	42	13	0	72	9	18	42	17	0	77	17	6	35	18	0	59	19	8	18	14	0	40	13	248
11:30AM	19	47	18	0	84	8	14	31	18	0	63	19	8	44	25	0	77	20	4	22	7	0	33	17	257
11:45AM	27	60	14	0	101	2	14	37	16	1	68	22	12	31	22	0	65	17	6	19	13	0	38	8	272
Hourly Total	81	194	61	0	336	25	56	154	65	1	276	70	33	149	75	1	258	64	23	79	51	0	153	54	1023
12:00PM	22	43	11	0	76	7	21	33	18	0	72	9	11	36	19	0	66	18	3	21	17	0	41	8	255
12:15PM	17	58	11	0	86	4	16	38	14	0	68	13	8	37	21	0	66	12	7	18	12	0	37	12	257
12:30PM	25	46	11	0	82	13	13	37	17	0	67	14	13	42	31	1	87	14	4	19	25	0	48	19	284
12:45PM	13	40	7	0	60	11	8	51	17	0	76	6	11	53	31	1	96	22	7	14	16	0	37	22	269
Hourly Total	77	187	40	0	304	35	58	159	66	0	283	42	43	168	102	2	315	66	21	72	70	0	163	61	1065
Total	158	381	101	0	640	60	114	313	131	1	559	112	76	317	177	3	573	130	44	151	121	0	316	115	2088
% Approach	24.7%	59.5%	15.8%	0%	-	-	20.4%	56.0%	23.4%	0.2%	-	-	13.3%	55.3%	30.9%	0.5%	-	-	13.9%	47.8%	38.3%	0%	-	-	-
% Total	7.6%	18.2%	4.8%	0%	30.7%	-	5.5%	15.0%	6.3%	0%	26.8%	-	3.6%	15.2%	8.5%	0.1%	27.4%	-	2.1%	7.2%	5.8%	0%	15.1%	-	-
Lights	157	374	101	0	632	-	114	309	130	1	554	-	73	315	177	3	568	-	44	148	121	0	313	-	2067
% Lights	99.4%	98.2%	100%	0%	98.8%	-	100%	98.7%	99.2%	100%	99.1%	-	96.1%	99.4%	100%	100%	99.1%	-	100%	98.0%	100%	0%	99.1%	-	99.0%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	1	7	0	0	8	-	0	4	1	0	5	-	3	1	0	0	4	-	0	3	0	0	3	-	20
% Buses and Single-Unit Trucks	0.6%	1.8%	0%	0%	1.3%	-	0%	1.3%	0.8%	0%	0.9%	-	3.9%	0.3%	0%	0%	0.7%	-	0%	2.0%	0%	0%	0.9%	-	1.0%
Pedestrians	-	-	-	-	-	58	-	-	-	-	-	111	-	-	-	-	-	129	-	-	-	-	-	107	-
% Pedestrians	-	-	-	-	-	96.7%	-	-	-	-	-	99.1%	-	-	-	-	-	99.2%	-	-	-	-	-	93.0%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	8	-
% Bicycles on Crosswalk	-	-	-	-	-	3.3%	-	-	-	-	-	0.9%	-	-	-	-	-	0.8%	-	-	-	-	-	7.0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & S Old Woodward - TMC

Sat Oct 16, 2021

Full Length (11 AM-1 PM)

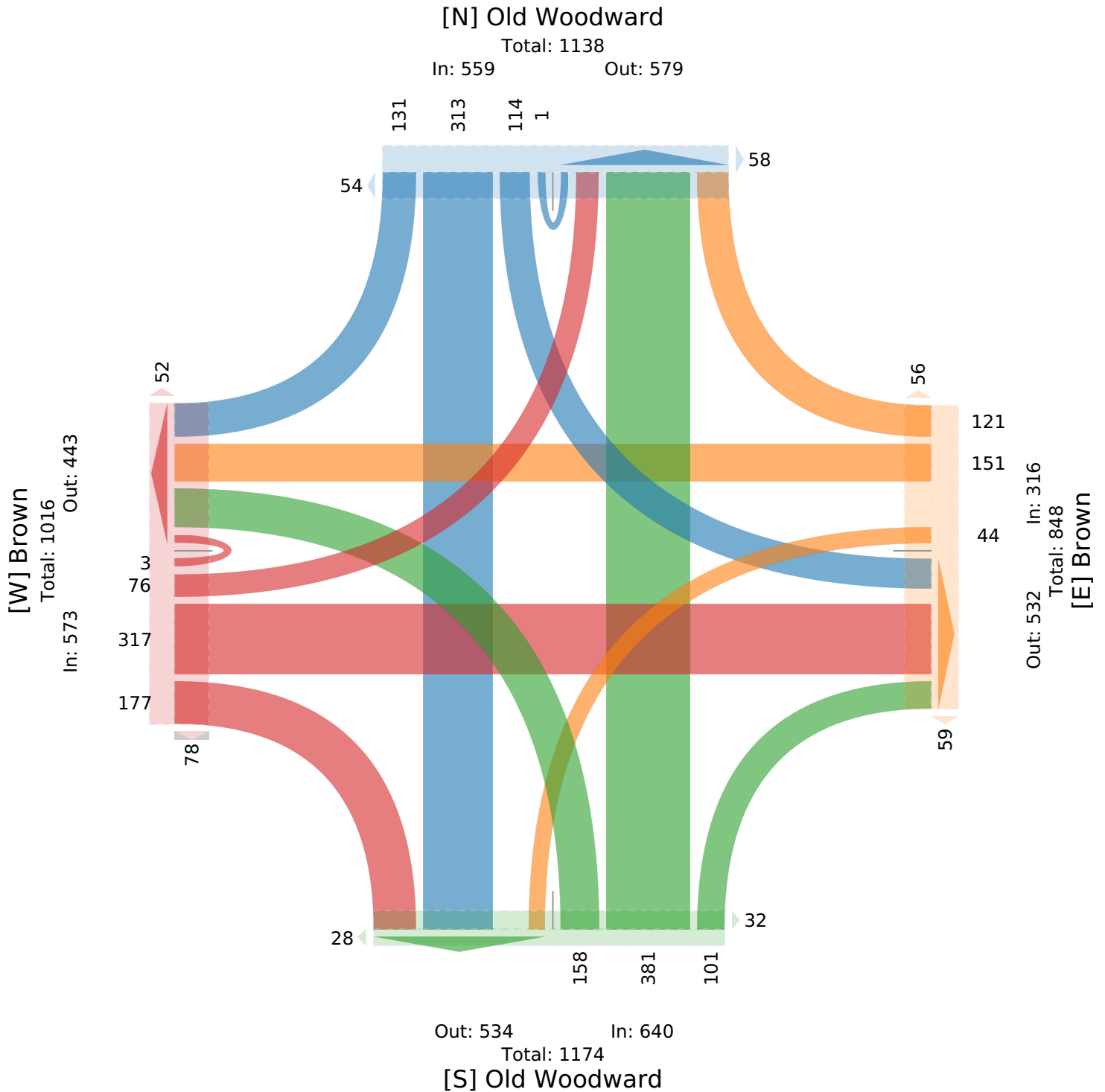
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885167, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & S Old Woodward - TMC

Sat Oct 16, 2021

Middy Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885167, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound						Old Woodward Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-16 11:45AM	27	60	14	0	101	2	14	37	16	1	68	22	12	31	22	0	65	17	6	19	13	0	38	8	272
12:00PM	22	43	11	0	76	7	21	33	18	0	72	9	11	36	19	0	66	18	3	21	17	0	41	8	255
12:15PM	17	58	11	0	86	4	16	38	14	0	68	13	8	37	21	0	66	12	7	18	12	0	37	12	257
12:30PM	25	46	11	0	82	13	13	37	17	0	67	14	13	42	31	1	87	14	4	19	25	0	48	19	284
Total	91	207	47	0	345	26	64	145	65	1	275	58	44	146	93	1	284	61	20	77	67	0	164	47	1068
% Approach	26.4%	60.0%	13.6%	0%	-	-	23.3%	52.7%	23.6%	0.4%	-	-	15.5%	51.4%	32.7%	0.4%	-	-	12.2%	47.0%	40.9%	0%	-	-	-
% Total	8.5%	19.4%	4.4%	0%	32.3%	-	6.0%	13.6%	6.1%	0.1%	25.7%	-	4.1%	13.7%	8.7%	0.1%	26.6%	-	1.9%	7.2%	6.3%	0%	15.4%	-	-
PHF	0.843	0.863	0.839	-	0.854	-	0.762	0.954	0.903	0.250	0.955	-	0.846	0.869	0.750	0.250	0.816	-	0.714	0.917	0.670	-	0.854	-	0.940
Lights	90	202	47	0	339	-	64	143	64	1	272	-	41	146	93	1	281	-	20	77	67	0	164	-	1056
% Lights	98.9%	97.6%	100%	0%	98.3%	-	100%	98.6%	98.5%	100%	98.9%	-	93.2%	100%	100%	100%	98.9%	-	100%	100%	100%	0%	100%	-	98.9%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	1	5	0	0	6	-	0	2	1	0	3	-	3	0	0	0	3	-	0	0	0	0	0	-	12
% Buses and Single-Unit Trucks	1.1%	2.4%	0%	0%	1.7%	-	0%	1.4%	1.5%	0%	1.1%	-	6.8%	0%	0%	0%	1.1%	-	0%	0%	0%	0%	0%	-	1.1%
Pedestrians	-	-	-	-	-	24	-	-	-	-	-	58	-	-	-	-	-	60	-	-	-	-	-	44	-
% Pedestrians	-	-	-	-	-	92.3%	-	-	-	-	-	100%	-	-	-	-	-	98.4%	-	-	-	-	-	93.6%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-
% Bicycles on Crosswalk	-	-	-	-	-	7.7%	-	-	-	-	-	0%	-	-	-	-	-	1.6%	-	-	-	-	-	6.4%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & S Old Woodward - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour

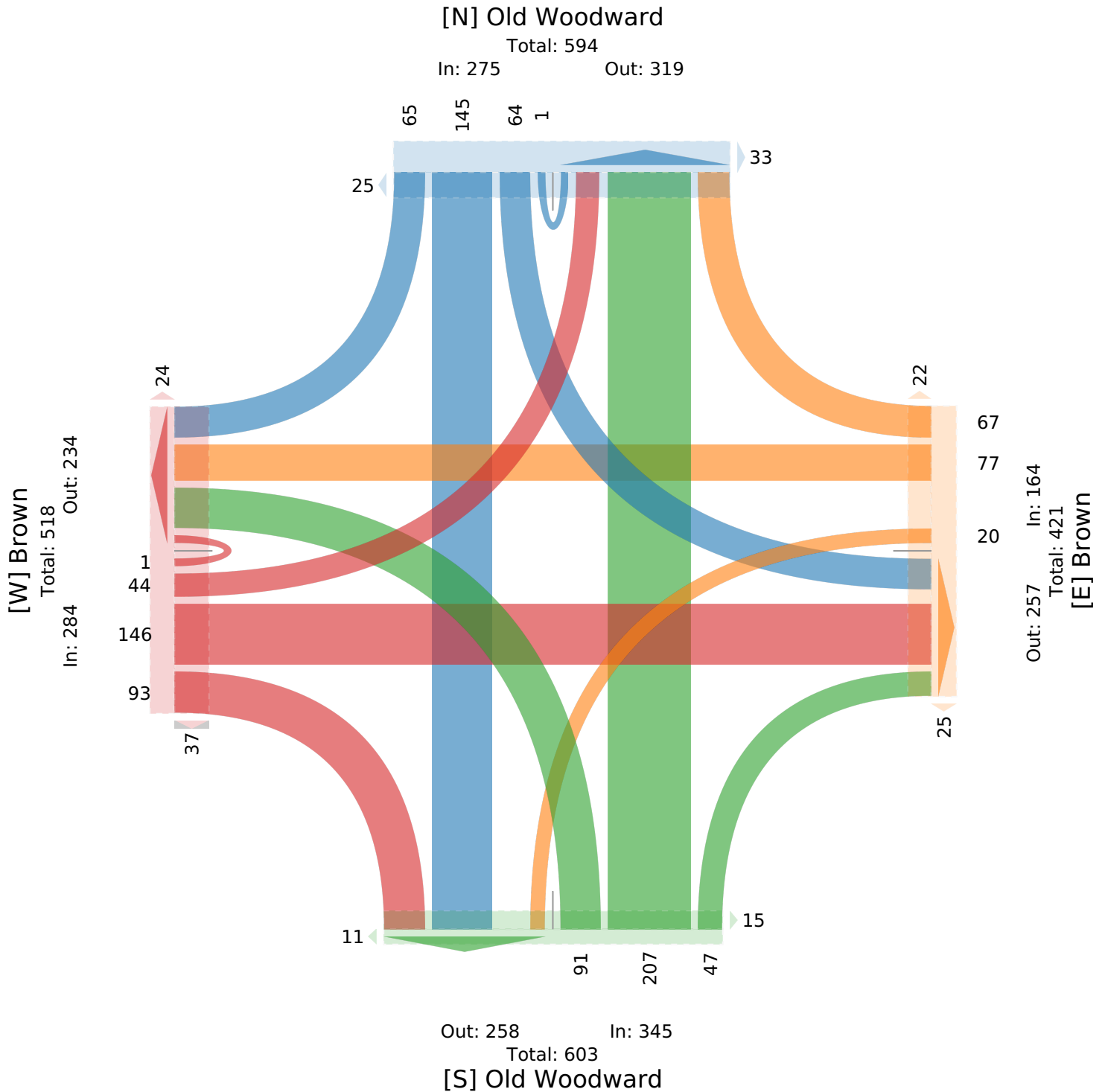
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885167, Location: 42.544781, -83.212407



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & Pierce - TMC

Thu Oct 14, 2021

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885169, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pierce Northbound						Pierce Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 7:00AM	0	3	1	0	4	1	6	0	1	0	7	1	3	23	2	0	28	2	0	13	2	0	15	2	54
7:15AM	4	2	5	0	11	1	4	0	1	0	5	1	3	32	0	0	35	5	0	18	4	0	22	2	73
7:30AM	0	4	2	0	6	0	4	4	0	0	8	1	3	51	1	0	55	2	3	24	2	0	29	3	98
7:45AM	6	11	7	0	24	2	9	6	2	0	17	0	5	70	7	0	82	2	4	19	6	0	29	1	152
Hourly Total	10	20	15	0	45	4	23	10	4	0	37	3	14	176	10	0	200	11	7	74	14	0	95	8	377
8:00AM	3	3	7	0	13	1	7	6	2	0	15	0	0	61	1	0	62	1	6	39	4	0	49	0	139
8:15AM	8	8	7	0	23	0	9	6	2	0	17	1	4	85	8	0	97	0	6	40	13	0	59	1	196
8:30AM	3	4	2	0	9	4	5	6	2	0	13	3	8	65	10	0	83	3	2	32	5	0	39	4	144
8:45AM	3	5	12	0	20	1	4	3	1	0	8	1	1	70	1	0	72	4	6	29	7	0	42	1	142
Hourly Total	17	20	28	0	65	6	25	21	7	0	53	5	13	281	20	0	314	8	20	140	29	0	189	6	621
4:00PM	3	10	9	0	22	2	8	7	6	0	21	4	3	59	8	0	70	5	5	51	9	0	65	5	178
4:15PM	7	11	11	0	29	2	9	11	2	0	22	4	4	57	9	0	70	3	2	55	16	0	73	7	194
4:30PM	7	24	4	0	35	0	5	10	7	0	22	2	9	58	6	0	73	3	7	48	11	0	66	5	196
4:45PM	12	15	10	0	37	1	8	10	5	0	23	8	7	50	6	0	63	4	1	52	12	0	65	3	188
Hourly Total	29	60	34	0	123	5	30	38	20	0	88	18	23	224	29	0	276	15	15	206	48	0	269	20	756
5:00PM	6	6	4	0	16	2	5	23	5	0	33	1	7	78	11	0	96	0	6	75	12	0	93	2	238
5:15PM	5	9	10	0	24	1	7	11	8	0	26	1	6	77	6	0	89	2	7	64	11	0	82	2	221
5:30PM	1	16	10	0	27	3	7	6	14	0	27	3	4	57	5	0	66	5	5	62	11	0	78	7	198
5:45PM	2	6	10	0	18	0	12	10	7	0	29	1	1	61	5	0	67	2	6	46	12	0	64	0	178
Hourly Total	14	37	34	0	85	6	31	50	34	0	115	6	18	273	27	0	318	9	24	247	46	0	317	11	835
Total	70	137	111	0	318	21	109	119	65	0	293	32	68	954	86	0	1108	43	66	667	137	0	870	45	2589
% Approach	22.0%	43.1%	34.9%	0%	-	-	37.2%	40.6%	22.2%	0%	-	-	6.1%	86.1%	7.8%	0%	-	-	7.6%	76.7%	15.7%	0%	-	-	-
% Total	2.7%	5.3%	4.3%	0%	12.3%	-	4.2%	4.6%	2.5%	0%	11.3%	-	2.6%	36.8%	3.3%	0%	42.8%	-	2.5%	25.8%	5.3%	0%	33.6%	-	-
Lights	68	132	109	0	309	-	106	117	64	0	287	-	67	935	85	0	1087	-	66	658	135	0	859	-	2542
% Lights	97.1%	96.4%	98.2%	0%	97.2%	-	97.2%	98.3%	98.5%	0%	98.0%	-	98.5%	98.0%	98.8%	0%	98.1%	-	100%	98.7%	98.5%	0%	98.7%	-	98.2%
Articulated Trucks	0	0	1	0	1	-	1	0	0	0	1	-	1	3	1	0	5	-	0	3	0	0	3	-	10
% Articulated Trucks	0%	0%	0.9%	0%	0.3%	-	0.9%	0%	0%	0%	0.3%	-	1.5%	0.3%	1.2%	0%	0.5%	-	0%	0.4%	0%	0%	0.3%	-	0.4%
Buses and Single-Unit Trucks	2	5	1	0	8	-	2	2	1	0	5	-	0	16	0	0	16	-	0	6	2	0	8	-	37
% Buses and Single-Unit Trucks	2.9%	3.6%	0.9%	0%	2.5%	-	1.8%	1.7%	1.5%	0%	1.7%	-	0%	1.7%	0%	0%	1.4%	-	0%	0.9%	1.5%	0%	0.9%	-	1.4%
Pedestrians	-	-	-	-	-	20	-	-	-	-	-	32	-	-	-	-	-	39	-	-	-	-	-	43	
% Pedestrians	-	-	-	-	-	95.2%	-	-	-	-	-	100%	-	-	-	-	-	90.7%	-	-	-	-	-	95.6%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	4.8%	-	-	-	-	-	0%	-	-	-	-	-	9.3%	-	-	-	-	-	4.4%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & Pierce - TMC

Thu Oct 14, 2021

Full Length (7 AM-9 AM, 4 PM-6 PM)

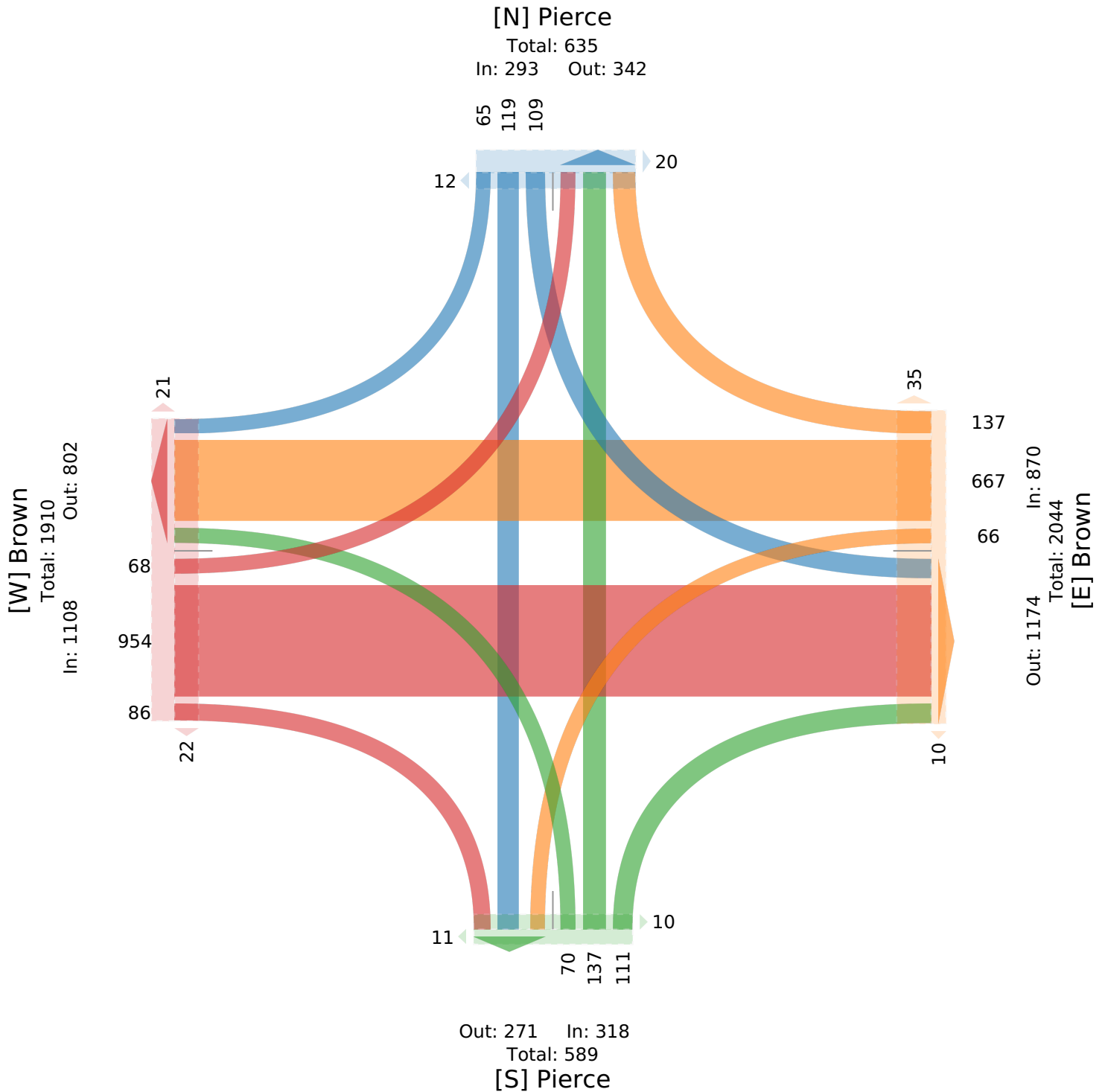
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885169, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & Pierce - TMC

Thu Oct 14, 2021

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885169, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pierce Northbound						Pierce Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 7:45AM	6	11	7	0	24	2	9	6	2	0	17	0	5	70	7	0	82	2	4	19	6	0	29	1	152
8:00AM	3	3	7	0	13	1	7	6	2	0	15	0	0	61	1	0	62	1	6	39	4	0	49	0	139
8:15AM	8	8	7	0	23	0	9	6	2	0	17	1	4	85	8	0	97	0	6	40	13	0	59	1	196
8:30AM	3	4	2	0	9	4	5	6	2	0	13	3	8	65	10	0	83	3	2	32	5	0	39	4	144
Total	20	26	23	0	69	7	30	24	8	0	62	4	17	281	26	0	324	6	18	130	28	0	176	6	631
% Approach	29.0%	37.7%	33.3%	0%	-	-	48.4%	38.7%	12.9%	0%	-	-	5.2%	86.7%	8.0%	0%	-	-	10.2%	73.9%	15.9%	0%	-	-	-
% Total	3.2%	4.1%	3.6%	0%	10.9%	-	4.8%	3.8%	1.3%	0%	9.8%	-	2.7%	44.5%	4.1%	0%	51.3%	-	2.9%	20.6%	4.4%	0%	27.9%	-	-
PHF	0.625	0.591	0.821	-	0.719	-	0.833	1.000	1.000	-	0.912	-	0.531	0.826	0.650	-	0.835	-	0.750	0.813	0.538	-	0.746	-	0.805
Lights	20	26	23	0	69	-	27	22	8	0	57	-	17	274	26	0	317	-	18	126	28	0	172	-	615
% Lights	100%	100%	100%	0%	100%	-	90.0%	91.7%	100%	0%	91.9%	-	100%	97.5%	100%	0%	97.8%	-	100%	96.9%	100%	0%	97.7%	-	97.5%
Articulated Trucks	0	0	0	0	0	-	1	0	0	0	1	-	0	1	0	0	1	-	0	1	0	0	1	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	-	3.3%	0%	0%	0%	1.6%	-	0%	0.4%	0%	0%	0.3%	-	0%	0.8%	0%	0%	0.6%	-	0.5%
Buses and Single-Unit Trucks	0	0	0	0	0	-	2	2	0	0	4	-	0	6	0	0	6	-	0	3	0	0	3	-	13
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	-	6.7%	8.3%	0%	0%	6.5%	-	0%	2.1%	0%	0%	1.9%	-	0%	2.3%	0%	0%	1.7%	-	2.1%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	4	-	-	-	-	-	6	-	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & Pierce - TMC

Thu Oct 14, 2021

AM Peak (7:45 AM - 8:45 AM)

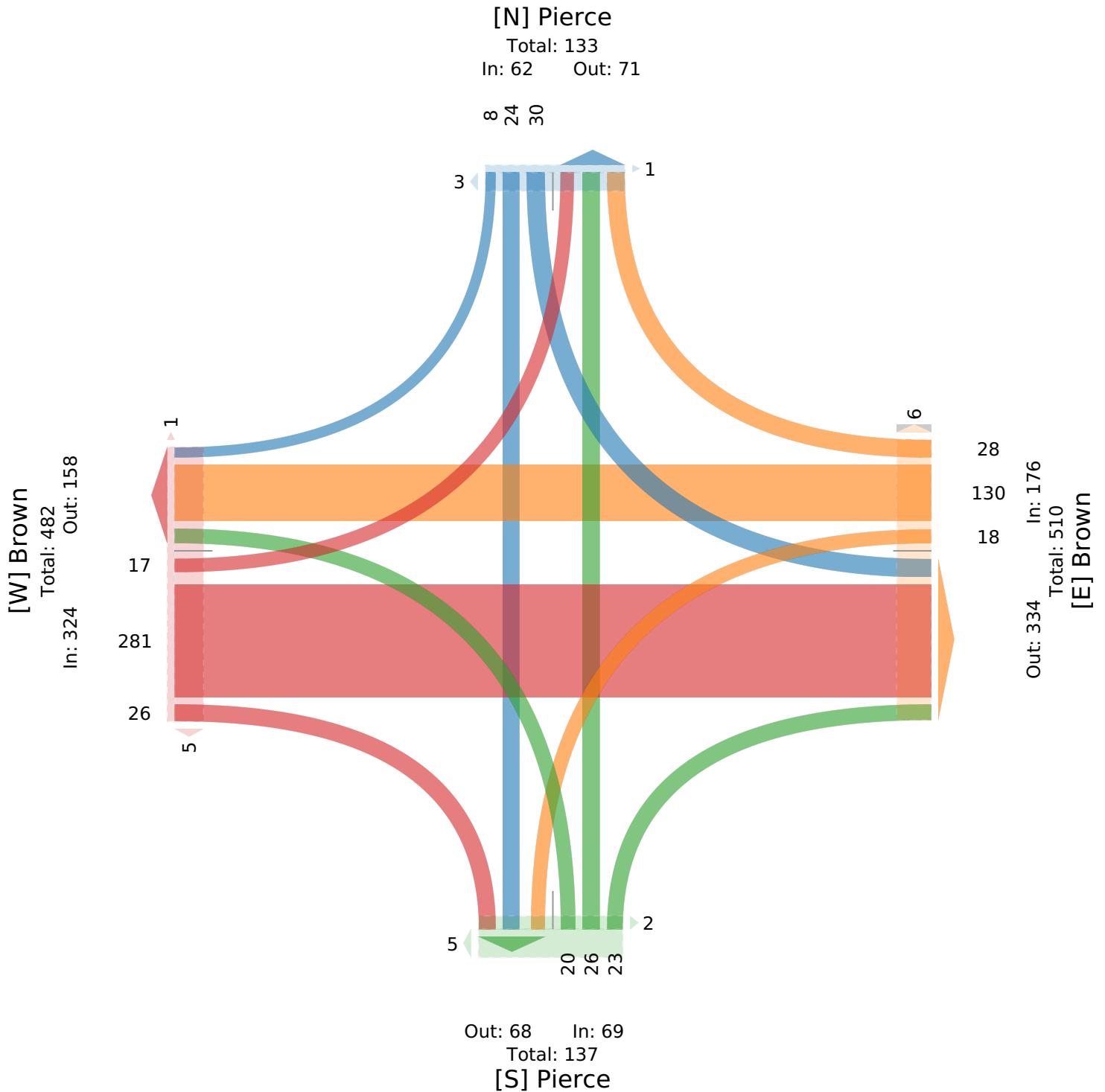
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885169, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & Pierce - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885169, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pierce Northbound						Pierce Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 4:45PM	12	15	10	0	37	1	8	10	5	0	23	8	7	50	6	0	63	4	1	52	12	0	65	3	188
5:00PM	6	6	4	0	16	2	5	23	5	0	33	1	7	78	11	0	96	0	6	75	12	0	93	2	238
5:15PM	5	9	10	0	24	1	7	11	8	0	26	1	6	77	6	0	89	2	7	64	11	0	82	2	221
5:30PM	1	16	10	0	27	3	7	6	14	0	27	3	4	57	5	0	66	5	5	62	11	0	78	7	198
Total	24	46	34	0	104	7	27	50	32	0	109	13	24	262	28	0	314	11	19	253	46	0	318	14	845
% Approach	23.1%	44.2%	32.7%	0%	-	-	24.8%	45.9%	29.4%	0%	-	-	7.6%	83.4%	8.9%	0%	-	-	6.0%	79.6%	14.5%	0%	-	-	-
% Total	2.8%	5.4%	4.0%	0%	12.3%	-	3.2%	5.9%	3.8%	0%	12.9%	-	2.8%	31.0%	3.3%	0%	37.2%	-	2.2%	29.9%	5.4%	0%	37.6%	-	-
PHF	0.500	0.719	0.850	-	0.703	-	0.844	0.543	0.571	-	0.826	-	0.857	0.840	0.636	-	0.818	-	0.679	0.843	0.958	-	0.855	-	0.888
Lights	23	45	33	0	101	-	27	50	32	0	109	-	24	258	28	0	310	-	19	253	45	0	317	-	837
% Lights	95.8%	97.8%	97.1%	0%	97.1%	-	100%	100%	100%	0%	100%	-	100%	98.5%	100%	0%	98.7%	-	100%	100%	97.8%	0%	99.7%	-	99.1%
Articulated Trucks	0	0	1	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Articulated Trucks	0%	0%	2.9%	0%	1.0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	1	1	0	0	2	-	0	0	0	0	0	-	0	4	0	0	4	-	0	0	1	0	1	-	7
% Buses and Single-Unit Trucks	4.2%	2.2%	0%	0%	1.9%	-	0%	0%	0%	0%	0%	-	0%	1.5%	0%	0%	1.3%	-	0%	0%	2.2%	0%	0.3%	-	0.8%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	13	-	-	-	-	-	8	-	-	-	-	-	14	
% Pedestrians	-	-	-	-	-	85.7%	-	-	-	-	-	100%	-	-	-	-	-	72.7%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	27.3%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & Pierce - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

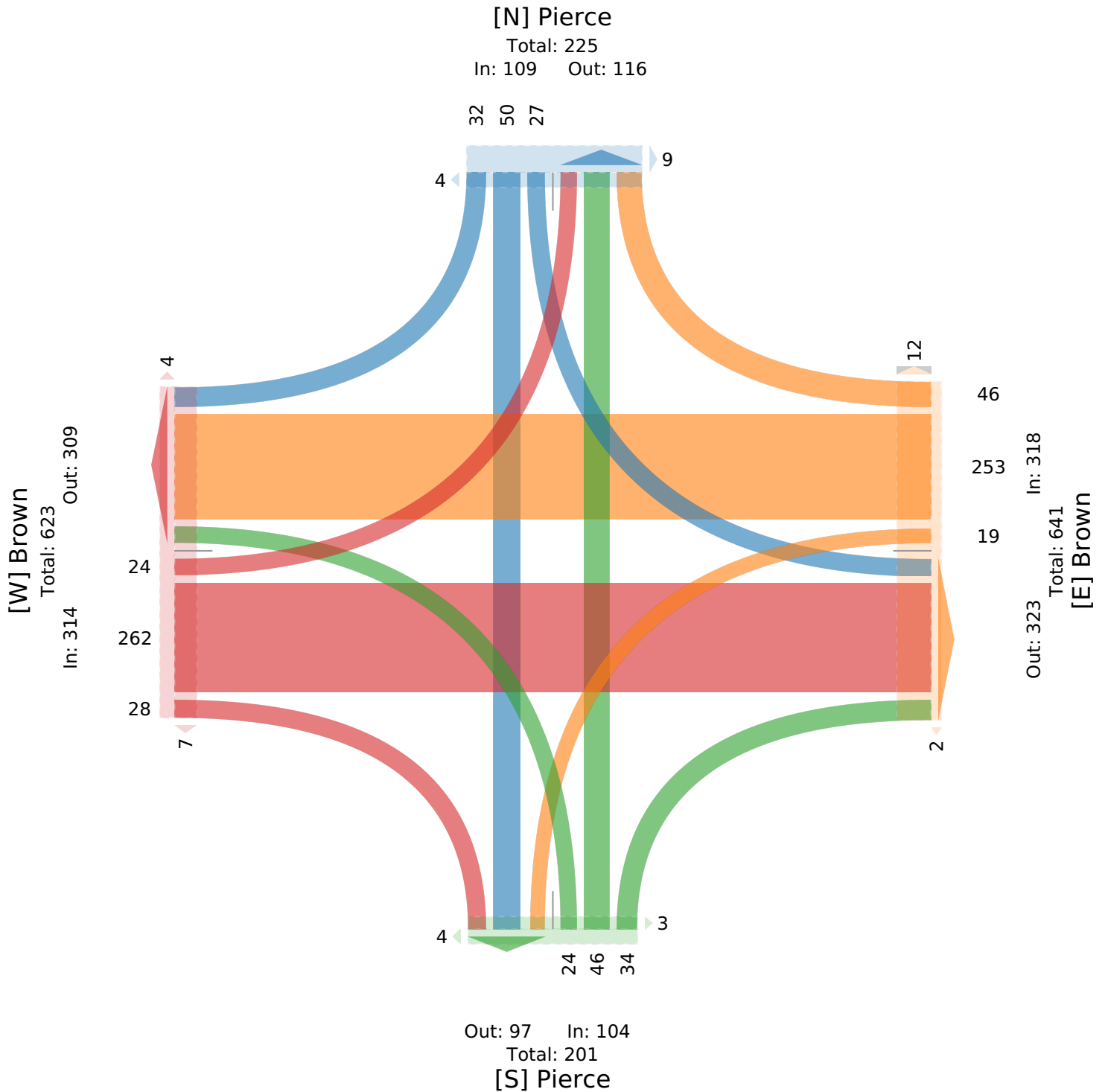
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885169, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & Pierce - TMC

Sat Oct 16, 2021

Full Length (11 AM-1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885166, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pierce Northbound						Pierce Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-16 11:00AM	4	6	7	0	17	0	7	8	6	0	21	3	5	34	2	0	41	8	1	30	15	0	46	11	125
11:15AM	4	10	8	0	22	5	13	9	4	0	26	9	8	33	5	0	46	6	3	35	9	0	47	6	141
11:30AM	6	9	13	0	28	0	12	8	5	0	25	2	4	42	3	0	49	1	1	32	10	0	43	12	145
11:45AM	3	14	7	0	24	5	7	9	6	0	22	3	6	43	1	0	50	4	5	46	22	0	73	13	169
Hourly Total	17	39	35	0	91	10	39	34	21	0	94	17	23	152	11	0	186	19	10	143	56	0	209	42	580
12:00PM	4	13	8	0	25	1	8	11	5	0	24	0	8	41	2	0	51	3	4	40	24	0	68	6	168
12:15PM	3	13	6	0	22	2	18	8	3	0	29	2	4	42	8	0	54	2	2	34	13	0	49	6	154
12:30PM	2	8	6	0	16	2	15	9	7	0	31	1	10	54	7	0	71	8	4	35	17	0	56	6	174
12:45PM	2	8	13	0	23	5	14	8	4	0	26	5	6	57	3	0	66	0	3	30	22	0	55	8	170
Hourly Total	11	42	33	0	86	10	55	36	19	0	110	8	28	194	20	0	242	13	13	139	76	0	228	26	666
Total	28	81	68	0	177	20	94	70	40	0	204	25	51	346	31	0	428	32	23	282	132	0	437	68	1246
% Approach	15.8%	45.8%	38.4%	0%	-	-	46.1%	34.3%	19.6%	0%	-	-	11.9%	80.8%	7.2%	0%	-	-	5.3%	64.5%	30.2%	0%	-	-	-
% Total	2.2%	6.5%	5.5%	0%	14.2%	-	7.5%	5.6%	3.2%	0%	16.4%	-	4.1%	27.8%	2.5%	0%	34.3%	-	1.8%	22.6%	10.6%	0%	35.1%	-	-
Lights	28	80	68	0	176	-	91	69	40	0	200	-	51	343	31	0	425	-	23	281	126	0	430	-	1231
% Lights	100%	98.8%	100%	0%	99.4%	-	96.8%	98.6%	100%	0%	98.0%	-	100%	99.1%	100%	0%	99.3%	-	100%	99.6%	95.5%	0%	98.4%	-	98.8%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	1	0	0	1	-	3	1	0	0	4	-	0	3	0	0	3	-	0	1	6	0	7	-	15
% Buses and Single-Unit Trucks	0%	1.2%	0%	0%	0.6%	-	3.2%	1.4%	0%	0%	2.0%	-	0%	0.9%	0%	0%	0.7%	-	0%	0.4%	4.5%	0%	1.6%	-	1.2%
Pedestrians	-	-	-	-	-	19	-	-	-	-	-	25	-	-	-	-	-	31	-	-	-	-	-	68	-
% Pedestrians	-	-	-	-	-	95.0%	-	-	-	-	-	100%	-	-	-	-	-	96.9%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	5.0%	-	-	-	-	-	0%	-	-	-	-	-	3.1%	-	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & Pierce - TMC

Sat Oct 16, 2021

Full Length (11 AM-1 PM)

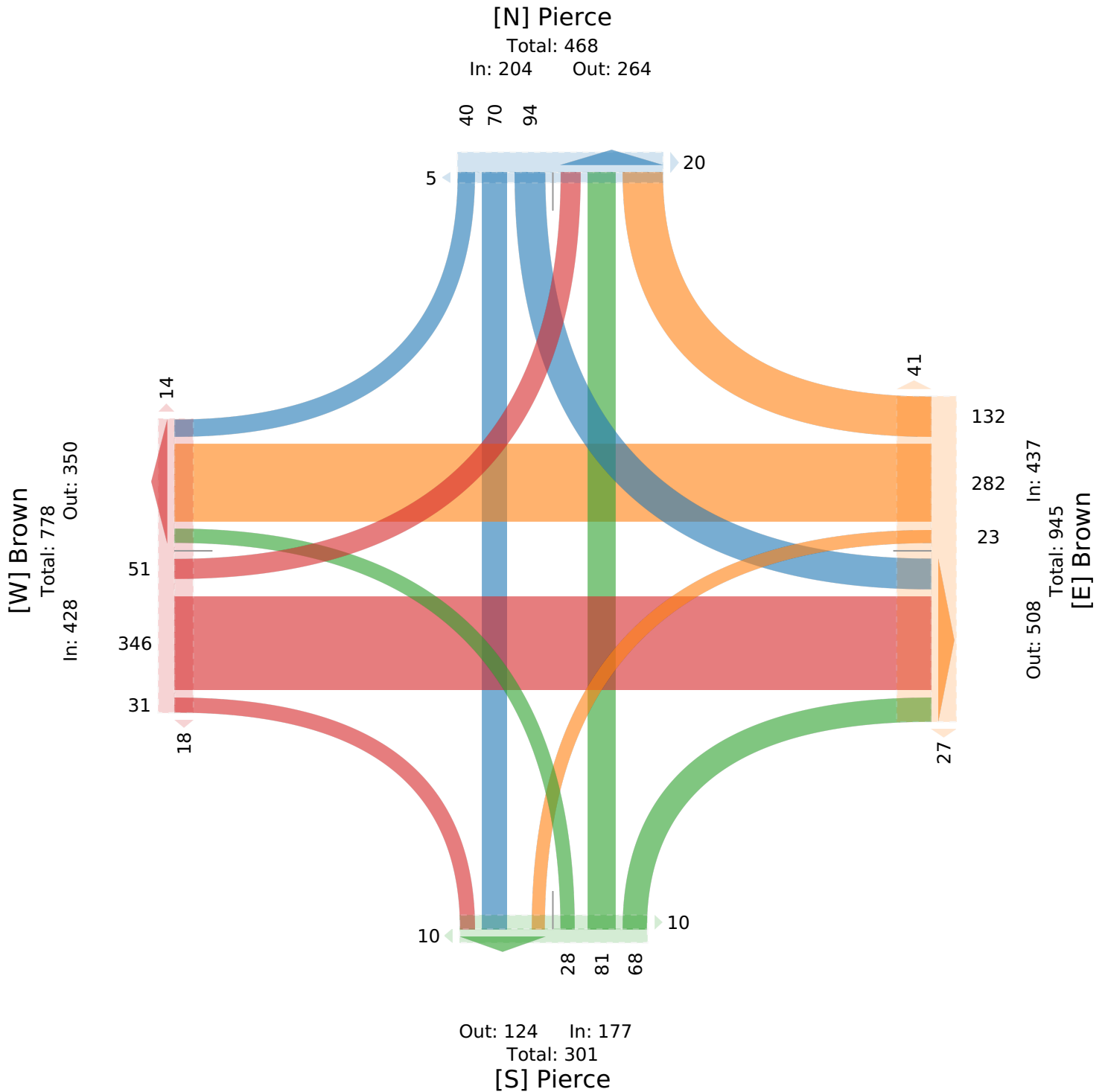
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885166, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



E Brown & Pierce - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885166, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pierce Northbound						Pierce Southbound						Brown Eastbound						Brown Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-16 12:00PM	4	13	8	0	25	1	8	11	5	0	24	0	8	41	2	0	51	3	4	40	24	0	68	6	168
12:15PM	3	13	6	0	22	2	18	8	3	0	29	2	4	42	8	0	54	2	2	34	13	0	49	6	154
12:30PM	2	8	6	0	16	2	15	9	7	0	31	1	10	54	7	0	71	8	4	35	17	0	56	6	174
12:45PM	2	8	13	0	23	5	14	8	4	0	26	5	6	57	3	0	66	0	3	30	22	0	55	8	170
Total	11	42	33	0	86	10	55	36	19	0	110	8	28	194	20	0	242	13	13	139	76	0	228	26	666
% Approach	12.8%	48.8%	38.4%	0%	-	-	50.0%	32.7%	17.3%	0%	-	-	11.6%	80.2%	8.3%	0%	-	-	5.7%	61.0%	33.3%	0%	-	-	-
% Total	1.7%	6.3%	5.0%	0%	12.9%	-	8.3%	5.4%	2.9%	0%	16.5%	-	4.2%	29.1%	3.0%	0%	36.3%	-	2.0%	20.9%	11.4%	0%	34.2%	-	-
PHF	0.688	0.808	0.635	-	0.860	-	0.764	0.818	0.679	-	0.887	-	0.700	0.851	0.625	-	0.852	-	0.813	0.869	0.792	-	0.838	-	0.957
Lights	11	42	33	0	86	-	55	36	19	0	110	-	28	194	20	0	242	-	13	138	74	0	225	-	663
% Lights	100%	100%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	99.3%	97.4%	0%	98.7%	-	99.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	2	0	3	-	3
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.7%	2.6%	0%	1.3%	-	0.5%
Pedestrians	-	-	-	-	-	10	-	-	-	-	-	8	-	-	-	-	-	13	-	-	-	-	-	26	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

E Brown & Pierce - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour

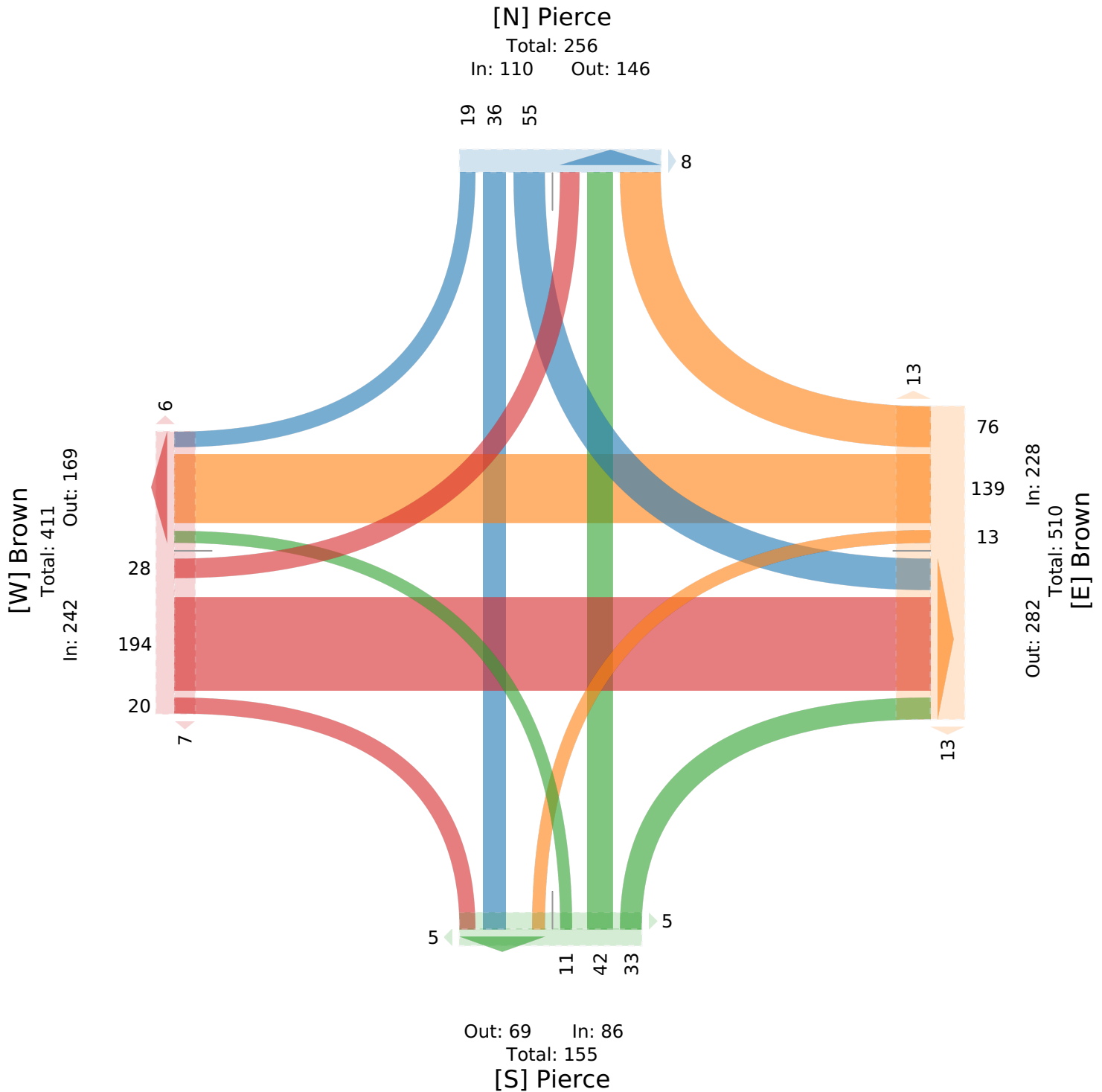
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885166, Location: 42.543807, -83.214837



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S Old Woodward & Daines - TMC

Thu Oct 14, 2021

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885171, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound					Old Woodward Southbound					Daines Eastbound					
Time	L	T	U	App	Ped*	T	R	U	App	Ped*	L	R	U	App	Ped*	Int
2021-10-14 7:00AM	1	21	0	22	0	18	0	0	18	2	0	1	0	1	8	41
7:15AM	2	29	0	31	0	19	2	0	21	3	0	0	0	0	1	52
7:30AM	2	38	0	40	0	15	1	0	16	0	1	1	0	2	4	58
7:45AM	6	41	0	47	0	38	2	0	40	4	0	1	0	1	4	88
Hourly Total	11	129	0	140	0	90	5	0	95	9	1	3	0	4	17	239
8:00AM	3	70	0	73	1	48	0	0	48	5	0	0	0	0	4	121
8:15AM	6	72	0	78	0	45	3	0	48	2	0	1	0	1	4	127
8:30AM	9	66	0	75	0	44	5	0	49	3	0	1	0	1	6	125
8:45AM	4	68	1	73	0	47	2	0	49	1	0	1	0	1	4	123
Hourly Total	22	276	1	299	1	184	10	0	194	11	0	3	0	3	18	496
4:00PM	1	68	0	69	0	67	4	0	71	7	0	2	0	2	14	142
4:15PM	4	65	0	69	0	58	3	1	62	3	1	1	0	2	10	133
4:30PM	2	78	0	80	0	69	3	1	73	3	1	6	0	7	16	160
4:45PM	8	74	0	82	1	71	3	0	74	5	2	4	0	6	12	162
Hourly Total	15	285	0	300	1	265	13	2	280	18	4	13	0	17	52	597
5:00PM	6	85	1	92	0	93	1	0	94	5	4	9	0	13	13	199
5:15PM	8	82	0	90	1	79	2	2	83	7	1	5	0	6	8	179
5:30PM	3	77	0	80	0	69	2	0	71	6	3	1	1	5	11	156
5:45PM	7	76	1	84	0	84	2	0	86	5	1	3	0	4	5	174
Hourly Total	24	320	2	346	1	325	7	2	334	23	9	18	1	28	37	708
Total	72	1010	3	1085	3	864	35	4	903	61	14	37	1	52	124	2040
% Approach	6.6%	93.1%	0.3%	-	-	95.7%	3.9%	0.4%	-	-	26.9%	71.2%	1.9%	-	-	-
% Total	3.5%	49.5%	0.1%	53.2%	-	42.4%	1.7%	0.2%	44.3%	-	0.7%	1.8%	0%	2.5%	-	-
Lights	72	993	3	1068	-	846	33	4	883	-	13	37	1	51	-	2002
% Lights	100%	98.3%	100%	98.4%	-	97.9%	94.3%	100%	97.8%	-	92.9%	100%	100%	98.1%	-	98.1%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	17	0	17	-	18	2	0	20	-	1	0	0	1	-	38
% Buses and Single-Unit Trucks	0%	1.7%	0%	1.6%	-	2.1%	5.7%	0%	2.2%	-	7.1%	0%	0%	1.9%	-	1.9%
Pedestrians	-	-	-	-	3	-	-	-	-	61	-	-	-	-	120	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	96.8%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	4	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	3.2%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

S Old Woodward & Daines - TMC

Thu Oct 14, 2021

Full Length (7 AM-9 AM, 4 PM-6 PM)

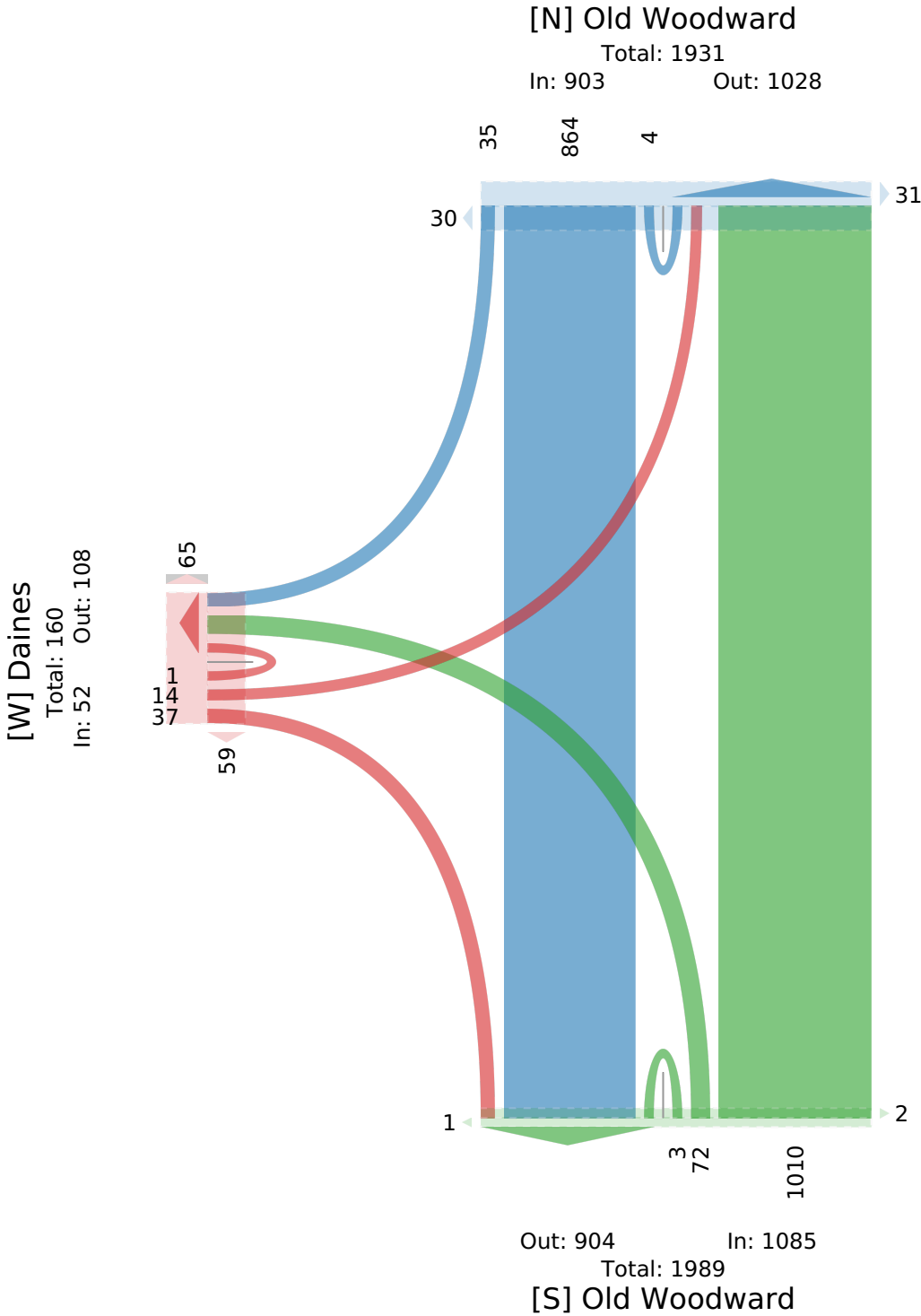
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885171, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S Old Woodward & Daines - TMC

Thu Oct 14, 2021

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885171, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound					Old Woodward Southbound					Daines Eastbound					
Time	L	T	U	App	Ped*	T	R	U	App	Ped*	L	R	U	App	Ped*	Int
2021-10-14 8:00AM	3	70	0	73	1	48	0	0	48	5	0	0	0	0	4	121
8:15AM	6	72	0	78	0	45	3	0	48	2	0	1	0	1	4	127
8:30AM	9	66	0	75	0	44	5	0	49	3	0	1	0	1	6	125
8:45AM	4	68	1	73	0	47	2	0	49	1	0	1	0	1	4	123
Total	22	276	1	299	1	184	10	0	194	11	0	3	0	3	18	496
% Approach	7.4%	92.3%	0.3%	-	-	94.8%	5.2%	0%	-	-	0%	100%	0%	-	-	-
% Total	4.4%	55.6%	0.2%	60.3%	-	37.1%	2.0%	0%	39.1%	-	0%	0.6%	0%	0.6%	-	-
PHF	0.611	0.958	0.250	0.958	-	0.958	0.500	-	0.990	-	-	0.750	-	0.750	-	0.976
Lights	22	273	1	296	-	179	8	0	187	-	0	3	0	3	-	486
% Lights	100%	98.9%	100%	99.0%	-	97.3%	80.0%	0%	96.4%	-	0%	100%	0%	100%	-	98.0%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	3	0	3	-	5	2	0	7	-	0	0	0	0	-	10
% Buses and Single-Unit Trucks	0%	1.1%	0%	1.0%	-	2.7%	20.0%	0%	3.6%	-	0%	0%	0%	0%	-	2.0%
Pedestrians	-	-	-	-	1	-	-	-	-	11	-	-	-	-	18	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

S Old Woodward & Daines - TMC

Thu Oct 14, 2021

AM Peak (8 AM - 9 AM)

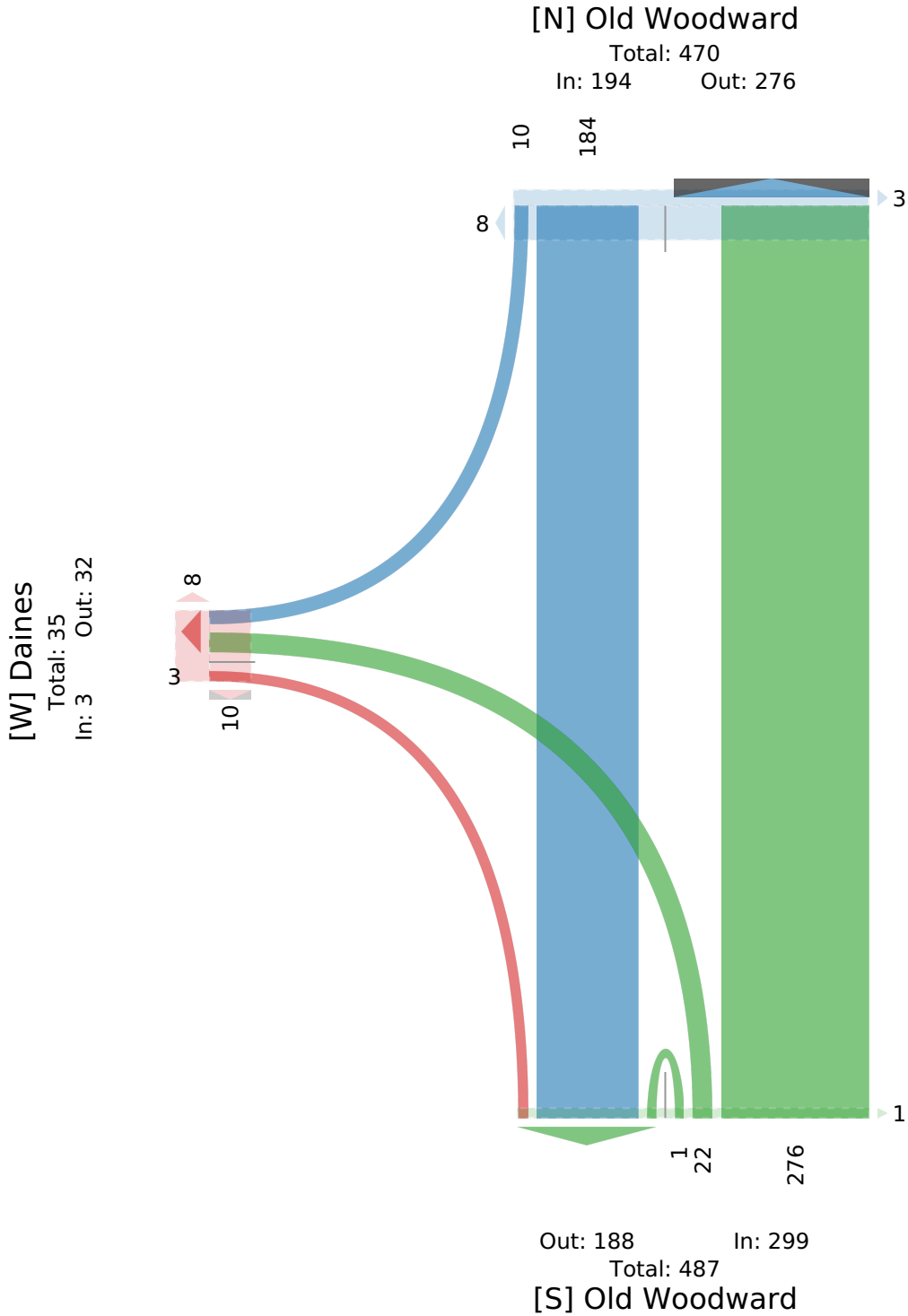
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885171, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S Old Woodward & Daines - TMC

Thu Oct 14, 2021

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885171, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound					Old Woodward Southbound					Daines Eastbound					
Time	L	T	U	App	Ped*	T	R	U	App	Ped*	L	R	U	App	Ped*	Int
2021-10-14 5:00PM	6	85	1	92	0	93	1	0	94	5	4	9	0	13	13	199
5:15PM	8	82	0	90	1	79	2	2	83	7	1	5	0	6	8	179
5:30PM	3	77	0	80	0	69	2	0	71	6	3	1	1	5	11	156
5:45PM	7	76	1	84	0	84	2	0	86	5	1	3	0	4	5	174
Total	24	320	2	346	1	325	7	2	334	23	9	18	1	28	37	708
% Approach	6.9%	92.5%	0.6%	-	-	97.3%	2.1%	0.6%	-	-	32.1%	64.3%	3.6%	-	-	-
% Total	3.4%	45.2%	0.3%	48.9%	-	45.9%	1.0%	0.3%	47.2%	-	1.3%	2.5%	0.1%	4.0%	-	-
PHF	0.750	0.941	0.500	0.940	-	0.874	0.875	0.250	0.888	-	0.563	0.500	0.250	0.538	-	0.889
Lights	24	316	2	342	-	322	7	2	331	-	9	18	1	28	-	701
% Lights	100%	98.8%	100%	98.8%	-	99.1%	100%	100%	99.1%	-	100%	100%	100%	100%	-	99.0%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	4	0	4	-	3	0	0	3	-	0	0	0	0	-	7
% Buses and Single-Unit Trucks	0%	1.3%	0%	1.2%	-	0.9%	0%	0%	0.9%	-	0%	0%	0%	0%	-	1.0%
Pedestrians	-	-	-	-	1	-	-	-	-	23	-	-	-	-	37	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

S Old Woodward & Daines - TMC

Thu Oct 14, 2021

PM Peak (5 PM - 6 PM) - Overall Peak Hour

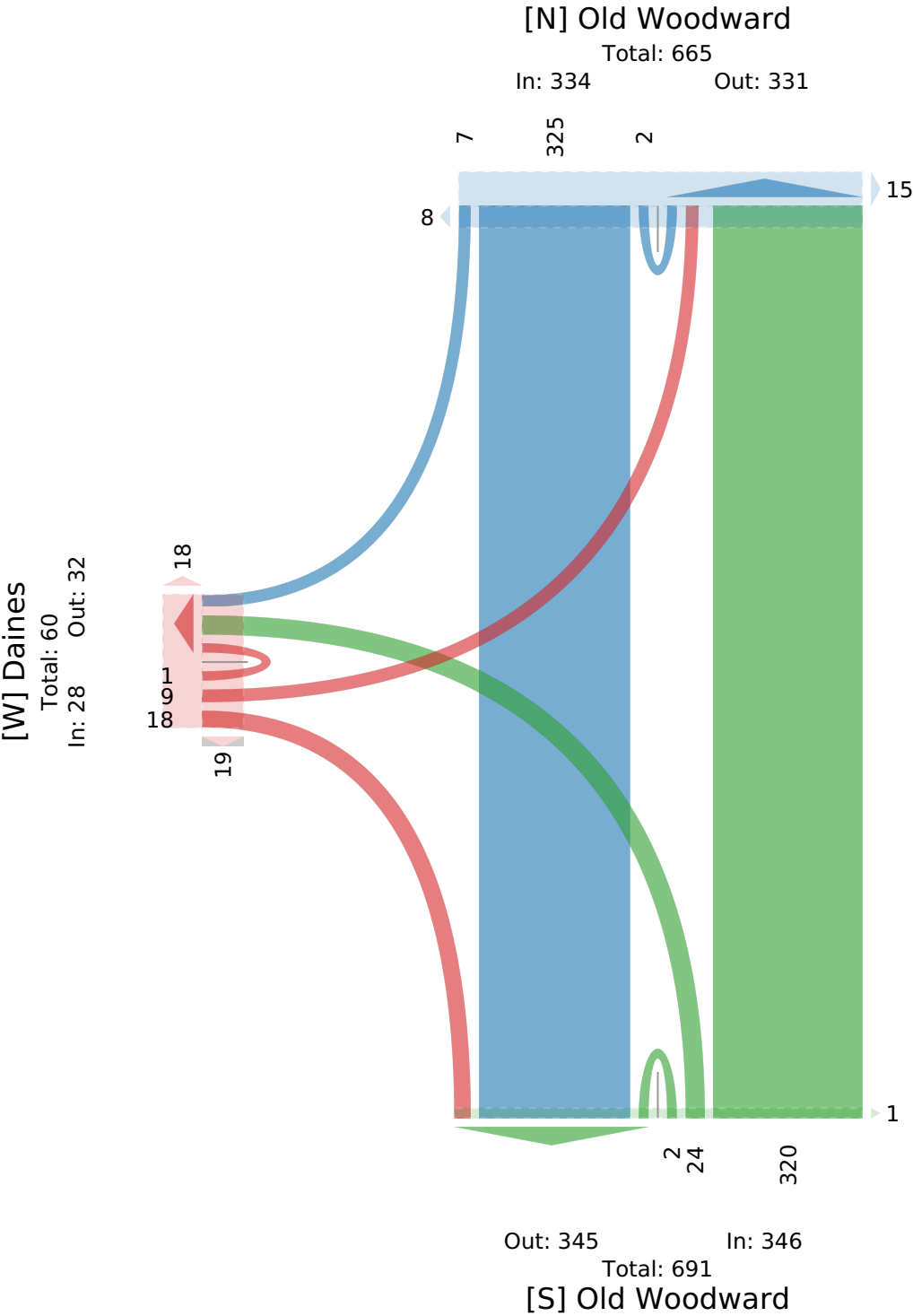
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885171, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S Old Woodward & Daines - TMC

Sat Oct 16, 2021

Full Length (11 AM-1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885168, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound					Old Woodward Southbound					Daines Eastbound					
Time	L	T	U	App	Ped*	T	R	U	App	Ped*	L	R	U	App	Ped*	Int
2021-10-16 11:00AM	4	88	0	92	0	55	5	0	60	0	1	4	0	5	9	157
11:15AM	4	75	1	80	0	58	5	1	64	0	0	1	0	1	18	145
11:30AM	4	87	0	91	0	55	5	0	60	0	1	3	0	4	27	155
11:45AM	4	101	0	105	0	60	5	0	65	0	2	0	0	2	14	172
Hourly Total	16	351	1	368	0	228	20	1	249	0	4	8	0	12	68	629
12:00PM	0	77	0	77	0	50	4	0	54	2	1	0	0	1	11	132
12:15PM	3	91	1	95	0	59	4	0	63	6	1	4	0	5	13	163
12:30PM	4	82	0	86	0	66	3	0	69	3	0	2	0	2	12	157
12:45PM	1	61	0	62	0	80	6	1	87	4	0	0	0	0	24	149
Hourly Total	8	311	1	320	0	255	17	1	273	15	2	6	0	8	60	601
Total	24	662	2	688	0	483	37	2	522	15	6	14	0	20	128	1230
% Approach	3.5%	96.2%	0.3%	-	-	92.5%	7.1%	0.4%	-	-	30.0%	70.0%	0%	-	-	-
% Total	2.0%	53.8%	0.2%	55.9%	-	39.3%	3.0%	0.2%	42.4%	-	0.5%	1.1%	0%	1.6%	-	-
Lights	24	653	2	679	-	479	37	2	518	-	6	13	0	19	-	1216
% Lights	100%	98.6%	100%	98.7%	-	99.2%	100%	100%	99.2%	-	100%	92.9%	0%	95.0%	-	98.9%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	9	0	9	-	4	0	0	4	-	0	1	0	1	-	14
% Buses and Single-Unit Trucks	0%	1.4%	0%	1.3%	-	0.8%	0%	0%	0.8%	-	0%	7.1%	0%	5.0%	-	1.1%
Pedestrians	-	-	-	-	0	-	-	-	-	15	-	-	-	-	128	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

S Old Woodward & Daines - TMC

Sat Oct 16, 2021

Full Length (11 AM-1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885168, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Old Woodward

Total: 1192

In: 522

Out: 670



Out: 499

In: 688

Total: 1187

[S] Old Woodward

[W] Daines
Total: 81
In: 20 Out: 61

S Old Woodward & Daines - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 885168, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Old Woodward Northbound						Old Woodward Southbound						Daines Eastbound						
Time	L	T	U	App	Ped*		T	R	U	App	Ped*		L	R	U	App	Ped*	Int	
2021-10-16 11:00AM	4	88	0	92	0		55	5	0	60	0		1	4	0	5	9	157	
11:15AM	4	75	1	80	0		58	5	1	64	0		0	1	0	1	18	145	
11:30AM	4	87	0	91	0		55	5	0	60	0		1	3	0	4	27	155	
11:45AM	4	101	0	105	0		60	5	0	65	0		2	0	0	2	14	172	
Total	16	351	1	368	0		228	20	1	249	0		4	8	0	12	68	629	
% Approach	4.3%	95.4%	0.3%	-	-		91.6%	8.0%	0.4%	-	-		33.3%	66.7%	0%	-	-	-	
% Total	2.5%	55.8%	0.2%	58.5%	-		36.2%	3.2%	0.2%	39.6%	-		0.6%	1.3%	0%	1.9%	-	-	
PHF	1.000	0.869	0.250	0.876	-		0.950	1.000	0.250	0.958	-		0.500	0.500	-	0.600	-	0.914	
Lights	16	346	1	363	-		226	20	1	247	-		4	7	0	11	-	621	
% Lights	100%	98.6%	100%	98.6%	-		99.1%	100%	100%	99.2%	-		100%	87.5%	0%	91.7%	-	98.7%	
Articulated Trucks	0	0	0	0	-		0	0	0	0	-		0	0	0	0	-	0	
% Articulated Trucks	0%	0%	0%	0%	-		0%	0%	0%	0%	-		0%	0%	0%	0%	-	0%	
Buses and Single-Unit Trucks	0	5	0	5	-		2	0	0	2	-		0	1	0	1	-	8	
% Buses and Single-Unit Trucks	0%	1.4%	0%	1.4%	-		0.9%	0%	0%	0.8%	-		0%	12.5%	0%	8.3%	-	1.3%	
Pedestrians	-	-	-	-	0		-	-	-	-	0		-	-	-	-	68		
% Pedestrians	-	-	-	-	-		-	-	-	-	-		-	-	-	-	100%	-	
Bicycles on Crosswalk	-	-	-	-	0		-	-	-	-	0		-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-		-	-	-	-	-		-	-	-	-	0%		

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

S Old Woodward & Daines - TMC

Sat Oct 16, 2021

Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour

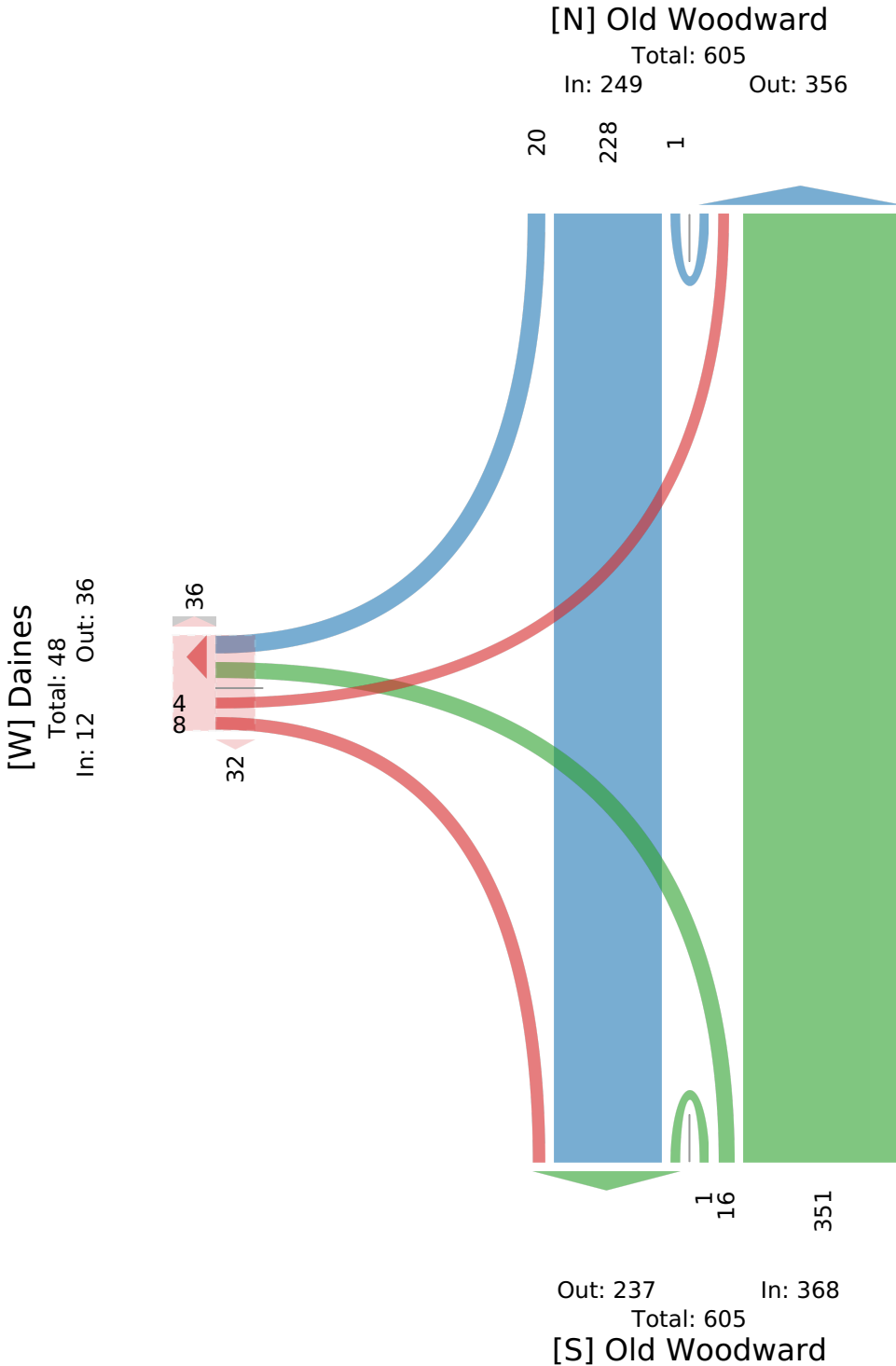
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
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All Movements

ID: 885168, Location: 42.544206, -83.211853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



TRAFFIC COUNTS

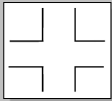
SIGNAL TIMING PERMITS & REIVEW

NOTES: 1. UNDERLINED BLUE fields have screen tips. Move cursor over text for tip.

2. White fields are required data to be entered.

3. Gray fields with BLUE text are calculated values - DO NOT MODIFY unless instructed to.

4. To add an intersection, click the picture below, and a blank intersection field will be added to the beginning of the table.



	Street Name	Approach	Valid Approach?	Split Phased?	Speed (MPH)	Approach Grade (%)	Intersection Width (ft)	Pedestrian Crossing Width (ft)	Ped Push Button to Crosswalk Distance (ft) Side 1	Ped Push Button to Crosswalk Distance (ft) Side 2	Min. Walk Interval (sec)	Ped Walking Speed (ft/sec)	Pedestrian Push Button?	Pedestrian Clearance Type	Pedestrian buffer interval included in red clearance time?	EPAC Controller?	Minimum Green Interval	YELLOW TIME	ALL RED TIME	Min. Walk Interval - Controller/Synchro	FLASH DON'T WALK (CONTROLLER)	EDW Interval - Synchro	Min. Split (larger of vehicle or pedestrian)	Bicycle Approach?	Bicycle Speed (MPH)	Predication Reaction Time (sec)	Bicycle Extension Time	Bicycle Crossing Time from Crossing Speed (BCT rolling) (sec)	Bicycle Crossing Time from Stop (BCT standing) (sec)	Bicycle Minimum Green	Bicycle Yellow Time	Bicycle Red Clear
Spot Number	E Brown St	NB	YES	NO	25	0%	65	48	n/a	n/a	7.0	3.5	NO	3	YES	YES	10.0	3.0	2.7	7.0	11.0	8.3	21.0		10	1		7.3	10.7		3.0	
		SB	YES		25	0%	80	35	n/a	n/a	7.0	3.5	NO	3	YES		10.0	3.0	2.7	7.0	11.0	8.3	21.0		10	1		8.3	11.8		3.0	
	Pierce St	EB	YES	NO	25	0%	60	38	n/a	n/a	7.0	3.5	NO	3	YES		7.0	3.0	2.6	7.0	11.0	8.4	21.0		10	1		7.0	10.4		3.0	
		WB	YES		25	0%	75	47	n/a	n/a	7.0	3.5	NO	3	YES		7.0	3.0	2.6	7.0	11.0	8.4	21.0		10	1		8.0	11.4		3.0	
Spot Number	S Old Woodward Ave	NB	YES	NO	25	0%	70	45	n/a	n/a	7.0	3.5	NO	3	YES	YES	10.0	3.0	2.7	7.0	10.0	7.3	20.0		10	1		7.6	11.1		3.0	
		SB	YES		25	0%	80	37	n/a	n/a	7.0	3.5	NO	3	YES		10.0	3.0	2.7	7.0	10.0	7.3	20.0		10	1		8.3	11.8		3.0	
	E Brown St	EB	YES		25	0%	75	38	n/a	n/a	7.0	3.5	NO	3	YES		7.0	3.0	2.9	7.0	9.0	6.1	19.0		10	1		8.0	11.4		3.0	
		WB	YES		25	0%	85	36	n/a	n/a	7.0	3.5	NO	3	YES		7.0	3.0	2.9	7.0	9.0	6.1	19.0		10	1		8.7	12.1		3.0	

Values automatically highlighted in this format should be confirmed with MDOT Lansing Signals Unit.

Source equations are hidden in rows 1 through 5 and should not be adjusted without permission from MDOT Lansing Signals Unit. Intermediate calculations can also be viewed by unhiding columns between columns "T" and "AU."

Prepared for:

Original Workbook Author:

OAKLAND COUNTY ROAD COMMISSION
TRAFFIC - SAFETY DEPARTMENT
SIGNAL WORK ORDER

LOCATION: Brown & Old Woodward DATE: 8/15/18
CITY/TOWNSHIP: Birmingham BY: ELA
COUNTY#: 278 STATE#: - CHARGES: 78002780

PLEASE PERFORM THE FOLLOWING:

☐ ELECTRICAL DEVICE: ☐ INSTALL ☐ MODERNIZE ☐ MAINTENANCE

☐ UNDERGROUND: _____

☐ EDISON OK: ☐ YES ☐ NO JOB#: SEP 13 2018

☐ COORDINATE W/DISTRICT 7: _____

DIAL..	1	1	1	1		2	2	2	2		3	3	3	3		4	4	4	4
SPLIT.	1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4
CHANGE TIMING.....																			
CHANGE OFFSET.....																			
CHANGE CYCLE LENGTH.....																			
ADD DIAL/SPLIT.....																			

☐ CHANGE BREAKOUT OR EPROM: _____

☐ CHANGE HOURS OF OPERATION:

OLD: _____

NEW: _____

☐ REPROGRAM TBC

☐ INSTALL INTERCONNECT: ☐ TBC ☐ MINITROL ☐ TONE

☐ MBT OK: ☐ YES ☐ NO

☐ NO CHANGE - RECORD CORRECTION

☒ OTHER: Rev3 change in: 2. Utilities - 8. Config Ports - 8. 6PS config
Install 6PS antenna

APPROVED BY: _____ DATE: 8/19/18

DATE INSTALLED: 9/12/18

INSTALLED BY: D-8

**ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER - MOD 52 EPAC**

3. PHASE DATA - 3. PEDESTRIAN TIMINGS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	RANGE (SEC)
Walk		7		7		7		7									00-99
Pedest Clearance		11		19		11		19									00-99
Flashing Walk																	
Extend Ped Clear		0		0		0		0									(0-no, 1-Y+R, 2-Y)
Act Rest in Walk																	

3. PHASE DATA - 4. INITIALIZE & NON ACTUATED RESPONSE

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initial		6		1		6		1								
NA Response																

CODES: 0 1 2 3 4 5 6
 Initial none inactive red yellow green Dark green/dw
 NA Response none to 1 to 2 both ----- - - - - -

3. PHASE DATA - 5. VEHICLE & PEDESTRIAN RECALLS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Vehicle Recall		3		3		3		3								
Pedestrian Recall		2		2		2		2								

CODES: 0 1 2 3 4
 Vehicle none 1 call min max soft
 Pedestrian none 1 call ped bot N. A. -----

3. PHASE DATA - 6. NONLOCK & MISC CONTROLS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nonlock Memory																
Dual Entry																
Last Car Passage																
Conditional Service																

CODES: 0 = NO 1 = YES

3. PHASE DATA - 7. SPECIAL SEQUENCE

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Omit																
-Yel																
Ocal																

3. PHASE DATA - 8. SPECIAL DETECTOR - 0. SPC 1-8 (TS1 ONLY)

Detector # on Print	1	2	3	4	5	6	7	8
Assigned Phase								

CODES: 0 1 2 3 4
 Operation Mode: Norm Veh Norm Ped 1 call St Bar A St Bar B

A. CONTROLS

	RANGE (SEC)
Extend Time	00-99
Delay Time	00-999

3. PHASE DATA - 8. SPECIAL DETECTOR - 1. VEH 1-8 OR 2. VEH 9-16 (TS2 ONLY)

Detector # on Print	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Assigned Phase																

CODES: 0 1 2 3 4
 Operation Mode: Norm Veh Norm Ped 1 call St Bar A St Bar B

A. CONTROLS

	RANGE (SEC)
Extend Time	00-99
Delay Time	00-999

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER - MOD 52 EPAC

3. PHASE DATA - 0. MISC PED+VEH OPT

Phase	1	2	3	4	5	6	7	8
WOFF/10		30		30		30		30
MODE		0		0		0		0
Walk Offset MODE: 0 = Advance Walk 1 = Delay Walk								
GDLY/10								
YDLY/10								

GDLY = Amt of time Advance Warning remains ON after the beginning of Green

YDLY = Amt of time the Advance Warning turns ON before the end of Green

4. UNIT DATA - 1. STARTUP & MISCELLANEOUS

Start up time : 10 (00-99) State : 0 (0 = fl, 1 = red)
 Auto ped clear : 0 Red revert : 7.0 (2.0 - 9.9)
 Stop time reset : 0 (0 = No, 1 = Yes)

4. UNIT DATA - 2. REMOTE FLASH

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FLASH		2		1		2		1								
ALT		1		0		1		0								
ENTER				1				1								
EXIT		1				1										

(0=No; 1=R, 2=Y)

(0=On/Off; 1=Off/On)

Test A = Remote Flash: 0 (0 = no & 1 = yes)

6. TIME BASE - 0. SPC FUNCTION MAPPING

FUNCTION NAME
 AS 8-15 = OLI - P FL G PHS
 AS 8-15 = OLI - P FL R PHS

SPC FUNC							
1	2	3	4	5	6	7	8

NOTE: Go up after entering to get this screen.

4. UNIT DATA - 6. ALT SEQ. 08-15
EPAC ALT SEQ (PHASE PAIR TO REVERSE)

SEQ	.PP1.	.PP2.	.PP3.	.PP4.	.PP5.	.PP6.
08						
09						
10						
11						

SEQ	.PP1.	.PP2.	.PP3.	.PP4.	.PP5.	.PP6.
12						
13						
14						
15						

4. UNIT DATA - 3. OVERLAP STANDARD

Phase	1	2	3	4	5	6	7	8	CH#
OVL A Phses									
+GRN Phses									
OVL B Phses									
+GRN Phses									
OVL C Phses									
+GRN Phses									
OVL D Phses									
+GRN Phses									

Phase	1	2	3	4	5	6	7	8	CH#
Overlap I									
Overlap J									
Overlap K									
Overlap L									
Overlap M									
Overlap N									
Overlap O									
Overlap P									

* For FYA operation, '+GRN' entry is the thru phase opposing the FYA phase

4. UNIT DATA - 4. OVERLAP SPECIAL

Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trail green																
Trail yellow																
Trail red																
-Green / -yellow (-G/Y)																
IG Preempt																

* Overlap green omitted by # - phase green; Overlap yellow omitted by # - phase yellow

* For FYA operation, '-G/Y' entry defines the phase that is the green arrow

**ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER - MOD 52 EPAC**

4. UNIT DATA - 7. PORT 1 / ITS DATA (TS2 ONLY)

ADDRESS	DESCRIPTION	PRES	M40
0	T&F BIU #1 TS2	1	
1	T&F BIU #2 TS2	1	
2	T&F BIU #3 TS2		
3	T&F BIU #4 TS2		
4	T&F BIU #5 RESERVED		
5	T&F BIU #6 RESERVED		
6	T&F BIU #7 MFG USE		
7	T&F BIU #8 MFG USE		
8	DET BIU #1 TS2		
9	DET BIU #2 TS2		
10	DET BIU #3 TS2		
11	DET BIU #4 TS2		
12	DET BIU #5 RESERVED		
13	DET BIU #6 RESERVED		
14	DET BIU #7 MFG USE		
15	DET BIU #8 MFG USE		
16	MALFUNCTION UNIT	1	
17	DIAGNOSTIC (MSG 30)		
18	CONTROLLER UNIT	1	

CODES: 0=NO / 1=YES

4. UNIT DATA - 8. I/O MISCELLANEOUS

Ring#	1	2	3	4
Input Response				
Output Select				

I/O Modes	INPUT	OUTPUT
"ABC" Connector		
"D" Connector		

Controller with Detection (TS1 ONLY):
EPAC300/M52 enter "1" under D Conn Input
2070 enter "0" under D Conn Input

5. COORDINATION DATA - 1. COORD SETUP

		O	1	2	3	4	5
OPER:	<u>1</u>	FRE	AUT	MAN	-----	-----	-----
MODE:	<u>0</u>	PRM	YLD	PYL	POM	SOM	FAC
MAX :	<u>0</u>	INH	MX1	MX2	-----	-----	-----
CORR:	<u>2</u>	DWL	MDW	SWY	SW+	-----	-----
OFST:		BEG END OF GREEN					
FRCE:		PLN CYC LE TIME					
MX DWELL:		YIELD PERIOD:					

5. COORDINATION DATA - 3. DIAL/SPLIT DATA

Mode: 0 = actuated
 1 = coord phase
 2 = minimum recall
 3 = maximum recall
 4 = pedestrain recall
 5 = maximum + pedestrain recall
 6 = phase omit
 7 = dual coord phase

Sequence: 00 - 15 (Unit data has definition)

Ring Lag: Ring offset from local cycle zero when not barrier locked to Ring #1.

Time: 00 - 99 seconds.

**ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER - MOD 52 EPAC**

5. COORDINATION DATA - 3. DIAL/SPLIT DATA

LEVEL 2

DIAL 1 / SPLIT 1 CYCLE LENGTH: *90 secs*

PHASE	1	2	3	4	5	6	7	8
TIME		47		43		47		43
MODE		1		7		1		7

DIAL 1 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 1 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 1 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 2 / SPLIT 1 CYCLE LENGTH: *90 secs*

PHASE	1	2	3	4	5	6	7	8
TIME		50		40		50		40
MODE		1		7		1		7

DIAL 2 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 2 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 2 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

LEVEL 1

OFFSET	1	2	3
TIME	10		
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

OFFSET	1	2	3
TIME	39		
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

**ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER - MOD 52 EPAC**

5. COORDINATION DATA - 3. DIAL/SPLIT DATA

LEVEL 2

DIAL 3 / SPLIT 1 CYCLE LENGTH: 90 secs

PHASE	1	2	3	4	5	6	7	8
TIME		46		44		46		44
MODE		1		7		1		7

DIAL 3 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 3 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 3 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 1 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

LEVEL 1

OFFSET	1	2	3
TIME	15		
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER - MOD 52 EPAC

7. PREEMPT DATA - 1. ALL PREEMPTS

RING TIMES		1	2	3	4	
MIN GREEN/WALK						
OVERRIDE	FL	1/2	2/3	3/4	4/5	5/6
STATUS						
CODES	0 = NO, 1 = YES					

7. PREEMPT DATA - PREEMPT 1

1. MISC DATA: (0 = no, 1 = yes)

TEST..: _____ N-LOCK.: _____ LINK PR#..: _____
 DELAY: _____ EXTEND: _____ DURATION: _____
 MXCALL: _____ LOCK OUT: _____

RING	1	2	3	4	5	6	7	8
EXIT								
CALLS								

2. INTERVAL TIMES:

SEL PED CLR : _____ TRK YEL CHG : _____
 SEL YEL CHG : _____ TRK RED CLR : _____
 SEL RED CLR : _____ DWELL GREEN: _____
 TRACK GREEN: _____ RET PED CLR : _____
 TRK PED CLR : _____ RET YEL CHG : _____
 RET YEL CLR : _____

3. VEHICLE STATUS:

PHASE	1	2	3	4	5	6	7	8
TRK GRN								
DWELL								

(0=red, 1=grn, 2=flr, 3=fly, 4=dark)

CYCLE								
-------	--	--	--	--	--	--	--	--

(0=no, 1=act, 2=min recall, 3=max recall)

4. PEDESTRIAN STATUS:

PHASE	1	2	3	4	5	6	7	8
TRK GRN								
DWELL								

(0=dont wlk, 1=wlk, 2=flwk, 3=dark)

CYCLE								
-------	--	--	--	--	--	--	--	--

(0 = no, 1 = act, 2 = recall)

5. OVERLAP STATUS:

OVERLAP	A	B	C	D
TRK GRN				
DWELL				

(0=red, 1=grn, 2=flr, 3=fly, 4=dark)

CYCLE								
-------	--	--	--	--	--	--	--	--

(0 = no, 1 = act)

6. LOW PRIORITY: (0=no, 1=yes)

TEST..: _____ N-LOCK.: _____ SKIP.....: _____
 DELAY: _____ EXTEND: _____ DURATION: _____
 DWELL: _____ MXCALL: _____ LOCK OUT: _____

RING	1	2	3	4	5	6	7	8
DWELL								
CALLS								

SIGNAL PHASING

PHASE#	ROAD	PHASE	LOAD SW	FLASH
1				
2	NB OLD WOODWARD	A	2	FLA
3				
4	WB BROWN	B	4	FLR
5				
6	SB OLD WOODWARD	C	6	FLA
7				
8	EB BROWN	D	8	FLR
OLA				
OLB				
OLC				
OLD				
1PED				
2PED	NB OLD WOODWARD E LEG PED	WA	9	-
3PED				
4PED	WB BROWN N LEG PED	WB	10	-
5PED				
6PED	SB OLD WOODWARD W LEG PED	WC	11	-
7PED				
8PED	EB BROWN S LEG PED	WD	12	-

Controller Information Sheet
P44-12 TS2 Cabinet w/Mod 60 EPAC Controller

Intersection : Brown & Old Woodward
City/Twp : Birmingham
State No. : -
County No. : 278
Prepared By : E Labiano
Date : 3/23/18

Phasing:

Load Switch 2: NB Old Woodward	A	FL A
Load Switch 4: WB Brown	B	FL R
Load Switch 6: SB Old Woodward	C	FL A
Load Switch 8: EB Brown	D	FL R
Load Switch 9: NB Old Woodward E Leg Ped	WA	
Load Switch 10: WB Brown N Leg Ped	WB	
Load Switch 11: SB Old Woodward W Leg Ped	WC	
Load Switch 12: EB Brown S Leg Ped	WD	

MMU: (MENU : SET/VIEW CONFIG)

Field Check Enable Channel 2: G, Y, R
 Channel 4: G, Y, R
 Channel 6: G, Y, R
 Channel 8: G, Y, R

Dual Indication Enable: R+G: Channel 2, 4, 6, 8, 9, 10, 11, 12.
 R+Y: Channel 2, 4, 6, 8
 G+Y: Channel 2, 4, 6, 8

Red Fail Enable: Enable: Channel 2, 4, 6 & 8


Y & R Clearance Disable: Channel 2, 4, 6 & 8 Enabled


Unit Options: All OFF except:
 Recurrent pulse
 LED Guard
 Program Memory Card


Program Card:	Compatible Channels:	2-6, 2-9, 2-11, 4-8, 4-10, 4-12, 6-9, 6-11, 8-10, 8-12, 9-11, 10-12.
	Min Flash Time:	4+2+1
	Min Yellow Change Disable:	9, 10, 11, 12
	Voltage Monitor Latch:	NONE


Note :- Add Jumper 16 MMU Flash – 116 Monitor ST Out


INSTALL 35' CATEGORY III MAST ARM (1)
INSTALL 30' CATEGORY III MAST ARM STANDARD (3)
INSTALL MAST ARM POLE FOUNDATION (4)
36" DIA. FOUNDATION - DEPTH 14'
INSTALL CASING = 5' (16)
INSTALL 2W-2C-BA
SEE DETAIL D-1 DETAIL SHEET OC-4
INSTALL HH AND CONDUIT (8) (5) (7)
INSTALL STREET LIGHT AND ARM (BY OTHERS)

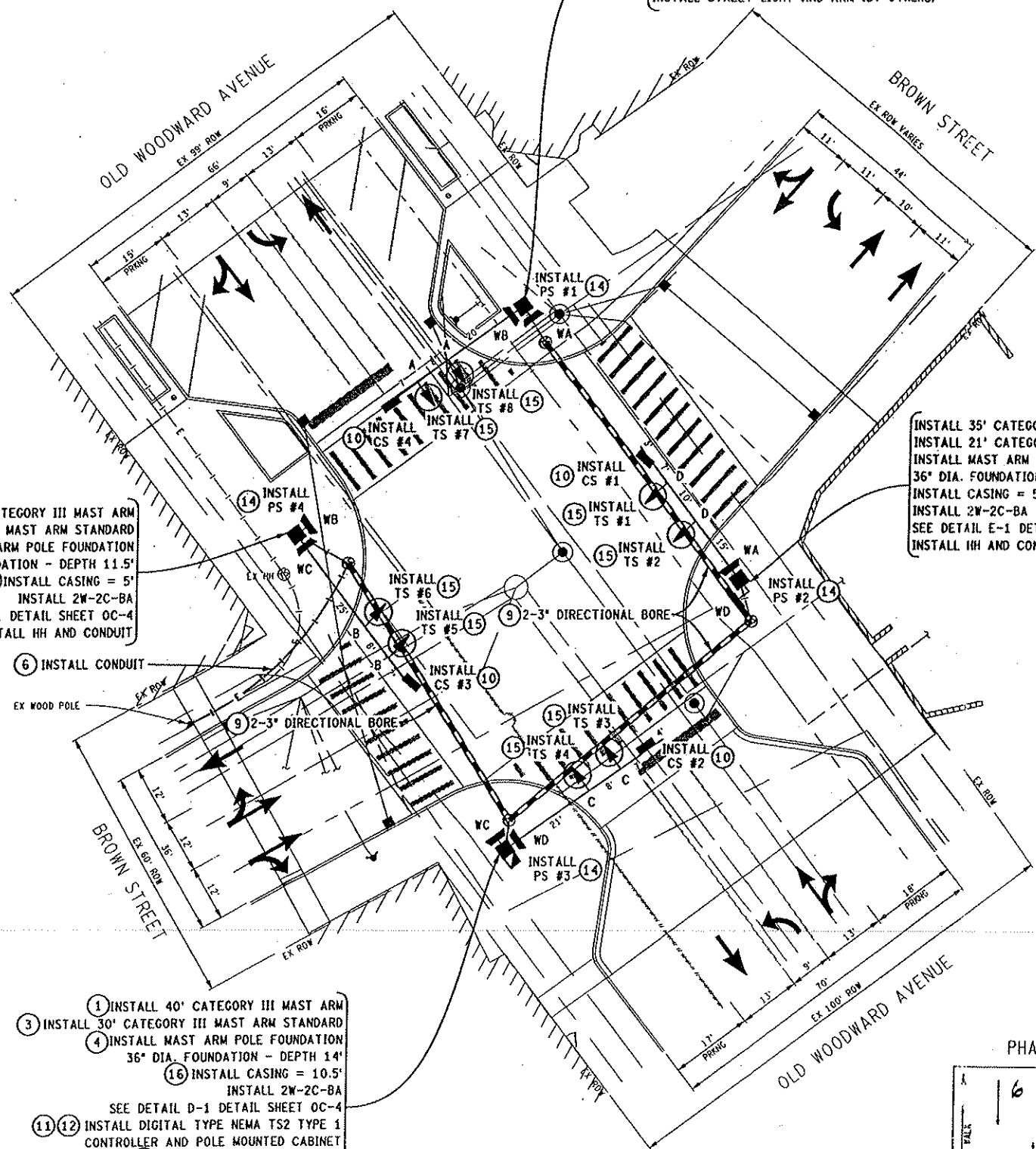
CS #1
INSTALL 24" X 30"
NON-ILLUMINATED
ONE WAY CASE SIGN

FACING SOUTHWEST

CS #2
INSTALL 24" X 30"
NON-ILLUMINATED
ONE WAY CASE SIGN

FACING NORTHWEST

CS #3
INSTALL 24" X 30"
NON-ILLUMINATED
ONE WAY CASE SIGN

FACING NORTHEAST

CS #4
INSTALL 24" X 30"
NON-ILLUMINATED
ONE WAY CASE SIGN

FACING SOUTHEAST

PS #1-4
INSTALL LED ILLUMINATED
COUNTDOWN PED SIGNAL




LIST OF MATERIAL		
NO.	ITEM	QUANTITIES
1	Mast Arm, RCOC	4 Ea
2	Mast Arm Std, 21 foot, RCOC	2 Ea
3	Mast Arm Std, 30 foot, RCOC	2 Ea
4	Mast Arm Std, Fdn, RCOC	4 Ea
5	Conduit, DB, 1, 1 1/4 inch	40 Ft
6	Conduit, DB, 1, 3 inch	48 Ft
7	Conduit, DB, 2, 3 inch	40 Ft
8	Hh, Round	4 Ea
9	Conduit, Directional Bore, 2, 3 inch, RCOC	203 Ft
10	Case Sign, One Way, 24 inch by 30 inch, Non-Illuminated, RCOC	4 Ea
11	Controller and Cabinet, Digital Type, RCOC	1 Ea
12	Controller and Cabinet, Digital Type, Delivered, RCOC	1 Ea
13	Serv Disconnect	1 Ea
14	TS, Pedestrian, Two Way Bracket Arm Mid (LED) Countdown	4 Ea
15	TS, One Way Mast Arm Mid (LED)	8 Ea
16	Casing	26 Ft
17	Cable, Sec, 600V, 1, 2/C#4, #6 Ground, RCOC	200 Ft

1 INSTALL 40' CATEGORY III MAST ARM
2 INSTALL 21' CATEGORY III MAST ARM STANDARD
4 INSTALL MAST ARM POLE FOUNDATION
36" DIA. FOUNDATION - DEPTH 11.5'
16 INSTALL CASING = 5'
INSTALL 2W-2C-BA
SEE DETAIL D-1 DETAIL SHEET OC-4
8 5 7 INSTALL HH AND CONDUIT

1 INSTALL 35' CATEGORY III MAST ARM
2 INSTALL 21' CATEGORY III MAST ARM STANDARD
4 INSTALL MAST ARM POLE FOUNDATION
36" DIA. FOUNDATION - DEPTH 14'
INSTALL CASING = 5' (16)
INSTALL 2W-2C-BA
SEE DETAIL E-1 DETAIL SHEET OC-4
INSTALL HH AND CONDUIT (8) (5) (7)

1 INSTALL 40' CATEGORY III MAST ARM
3 INSTALL 30' CATEGORY III MAST ARM STANDARD
4 INSTALL MAST ARM POLE FOUNDATION
36" DIA. FOUNDATION - DEPTH 14'
16 INSTALL CASING = 10.5'
INSTALL 2W-2C-BA
SEE DETAIL D-1 DETAIL SHEET OC-4
11 12 INSTALL DIGITAL TYPE NEMA TS2 TYPE 1
CONTROLLER AND POLE MOUNTED CABINET
13 INSTALL SERVICE DISCONNECT
INSTALL ELECTRIC SERVICE (BY DTE)
8 5 7 INSTALL HH AND CONDUIT
INSTALL STREET LIGHT AND ARM (BY OTHERS)

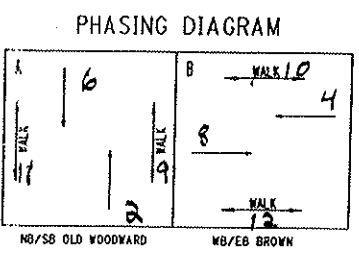
APPROACH SPEEDS:	
NB	25 MPH
SB	25 MPH
EB	25 MPH
WB	25 MPH

CONDUIT TYPICALS	
MAST ARM TO HH	= 2-3' & 1-1 1/4'
WOOD POLE TO HH	= 1-3'
HH TO HH	= 2-3'

ALL STRUCTURES SHALL BE GROUNDED
IN THE NEAREST H.H. ALL GROUND RODS
SHALL BE CONNECTED TOGETHER WITH A
1-1/2" #6 AWG COPPER.

MAST ARMS AND MAST ARM STANDARDS
SHALL BE POWDER COATED TO MATCH
COLOR NUMBER RAL 6012 (DARK GREEN).
CITY OF BIRMINGHAM TO SELECT
COLOR PRIOR TO SHOP DRAWING SUBMITTAL.

CONTACT: DENNIS MERCIER OF DTE ENERGY
AT (248) 427-2954 FOR INSTALLATION OF
SECONDARY ELECTRICAL SERVICE.
NO COST TO CONTRACTOR.



FOUNDATION COORDINATE TABLE			
ITEM	LOCATION	NORTHING	EASTING
MAST ARM	NE QUAD	382941.37	13434379.73
MAST ARM	SE QUAD	382883.57	13434425.36
MAST ARM	SW QUAD	382827.12	13434377.35
MAST ARM	NW QUAD	382893.42	13434332.69

C0 278

OAKLAND COUNTY ROAD COMMISSION
TRAFFIC - SAFETY DEPARTMENT
SIGNAL WORK ORDER

LOCATION: Brown & Pierce DATE: 1/8/20
CITY/TOWNSHIP: Birmingham BY: ELA
COUNTY#: 297 STATE#: - CHARGES: FUNCTION: 00297G

PLEASE PERFORM THE FOLLOWING:

☐ ELECTRICAL DEVICE: ☐ INSTALL ☐ MODERNIZE ☐ MAINTENANCE
☐ UNDERGROUND: _____
☐ EDISON OK: ☐ YES ☐ NO JOB#: _____
☐ COORDINATE W/DISTRICT 7: _____

DIAL..	1	1	1	1		2	2	2	2		3	3	3	3		4	4	4	4
SPLIT.	1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4
CHANGE TIMING.....																			
CHANGE OFFSET.....																			
CHANGE CYCLE LENGTH.....																			
ADD DIAL/SPLIT.....																			

☐ CHANGE BREAKOUT OR EPROM: _____
☐ CHANGE HOURS OF OPERATION: _____
OLD: _____
NEW: _____

ROAD COMMISSION FOR
OAKLAND COUNTY

FEB 4 2020

☐ REPROGRAM TBC
☐ INSTALL INTERCONNECT: ☐ TBC ☐ MINITROL ☐ TONE
☐ MBT OK: ☐ YES ☐ NO
☐ NO CHANGE - RECORD CORRECTION
☒ OTHER: Crew installed GPS equipment on

TRAFFIC OPERATIONS

Please check DST and GPS inputs.

(Rev 11)

APPROVED BY: [Signature] DATE: 1/9/20

DATE INSTALLED: 1/30/2020

INSTALLED BY: Richardson

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

INTERSECTION: BROWN + PIERCE

CITY/VILLAGE/TOWNSHIP: BIRMINGHAM

COUNTY#: 297 MDOT#: — REV#: 11 DETROIT EDISON#: —

DRAWN BY: E Labiano APPROVED BY: [Signature] DATE DRAWN: 11/18/20

INSTALLED BY: — DATE INSTLD: 1 / 1

HOURS OF OPERATION: 7 DAYS: 24 HOURS

HOURS OF FLASHING: NONE

2. UTILITIES - 1. ACCESS

CODE: 1642 CODE: Four digits (0000 - 9999)

4. UNIT DATA - 5. RING STRUCTURE

***** NOTE: INSERT ALL RING #'S FIRST, THEN NXT & CONCUR *****

CHANNEL:	RING	PHNXT	CONCURRENT PHASES																CHANNEL	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	VEH	PED
PHASE 1:			1																	
PHASE 2:	1	4		1															2	9
PHASE 3:					1															
PHASE 4:	1	2				1													4	10
PHASE 5:							1													
PHASE 6:								1												
PHASE 7:									1											
PHASE 8:										1										
PHASE 9:											1									
PHASE 10:												1								
PHASE 11:													1							
PHASE 12:														1						
PHASE 13:															1					
PHASE 14:																1				
PHASE 15:																	1			
PHASE 16:																		1		

CODES:

RING Ring Number for Phase (1-4)

PHNXT Phase Next In Ring (1-16)

CONCUR PH Phases To Be Concurrent (0=NO, 1=YES)

For vehicle channel & ped channel, enter "1" under channel# shown.

3. PHASE DATA - 1. BASIC TIMINGS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	RANGE
Minimum Green		10		5													00-99
Passage																	0.0-9.9
Maximum #1		42		26													000-999
Maximum #2																	000-999
Yellow Clearance		3.5		3.5													3.0-9.9
Red Clearance		2.5		2.5													0.0-9.9

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

3. PHASE DATA - 3. PEDESTRIAN TIMINGS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	RANGE (SEC)
Walk		7		7													00-99
Pedest Clearance		10		11													00-99
Flashing Walk																	
Extend Ped Clear																	
Act Rest in Walk																	

3. PHASE DATA - 4. INITIALIZE & NON ACTUATED RESPONSE

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initial		4		1												
NA Response																

CODES: 0 1 2 3 4
Initial none inactive red yellow green
NA Response none to 1 to 2 both -----

3. PHASE DATA - 5. VEHICLE & PEDESTRIAN RECALLS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Vehicle Recall		3		3												
Pedestrian Recall		2		2												

CODES: 0 1 2 3 4
Vehicle none 1 call min max soft
Pedestrian none 1 call ped bot N. A. -----

3. PHASE DATA - 6. NONLOCK & MISC CONTROLS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nonlock Memory																
Dual Entry																
Last Car Passage																
Conditional Service																

CODES: 0 = NO 1 = YES

3. PHASE DATA - 8. SPECIAL DETECTOR - 0. SPC 1-8 (Epac 300/M52)

Detector # on Print	1	2	3	4	5	6	7	8
EPAC/M52 "D" Connector	1	6	7	8	4	5	2	3
Assigned Phase								

CODES: 0 1 2 3 4

Operation Mode: Norm Veh Norm Ped 1 call St Bar A St Bar B

A. CONTROLS

	RANGE (SEC)
Extend Time	00-99
Delay Time	00-999

3. PHASE DATA - 8. SPECIAL DETECTOR - 2. VEH 9-16 (2070)

Detector # on Print	1	2	3	4	5	6	7	8
2070 "D" Connector	9	10	11	12	13	14	15	16
Assigned Phase								

CODES: 0 1 2 3 4

Operation Mode: Norm Veh Norm Ped 1 call St Bar A St Bar B

A. CONTROLS

	RANGE (SEC)
Extend Time	00-99
Delay Time	00-999

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

5. COORDINATION DATA - 3. DIAL/SPLIT DATA

LEVEL 2

DIAL 1 / SPLIT 1 CYCLE LENGTH: 80

PHASE	1	2	3	4	5	6	7	8
TIME		50		30				
MODE		1		7				

DIAL 1 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 1 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 1 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 2 / SPLIT 1 CYCLE LENGTH: 80

PHASE	1	2	3	4	5	6	7	8
TIME		52		28				
MODE		1		7				

DIAL 2 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 2 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 2 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

LEVEL 1

OFFSET	1	2	3
TIME	55		
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

OFFSET	1	2	3
TIME	15		
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

5. COORDINATION DATA - 3. DIAL/SPLIT DATA

LEVEL 2

DIAL 3 / SPLIT 1 CYCLE LENGTH: 80

PHASE	1	2	3	4	5	6	7	8
TIME		52		28				
MODE		1		7				

DIAL 3 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 3 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 3 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 1 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 2 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 3 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

DIAL 4 / SPLIT 4 CYCLE LENGTH:

PHASE	1	2	3	4	5	6	7	8
TIME								
MODE								

LEVEL 1

OFFSET	1	2	3
TIME	15		
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			
OFFSET	1	2	3
TIME			
SEQUENCE			
RING 2 LAG			
RING 3 LAG			
RING 4 LAG			

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

4. UNIT DATA - 1. STARTUP & MISCELLANEOUS

Start up time : 10 (00-99) State : 0 (0 = fl, 1 = red)
 Auto ped clear : 0 Red revert : 7 (2.0 - 9.9)
 Stop time reset : 0 (0 = No, 1 = Yes)

4. UNIT DATA - 2. REMOTE FLASH

Phase	1	2	3	4	5	6	7	8	A	B	C	D	E	F	G	H
FLASH																
YEL																
ALT																
ENTER				1												
EXIT		1														

Test A = Remote Flash: (0 = no & 1 = yes)

6. TIME BASE - 0. SPC FUNCTION MAPPING

FUNCTION NAME
 AS 8-15 = OLI - P FL G PHS
 AS 8-15 = OLI - P FL R PHS

SPC FUNC

1	2	3	4	5	6	7	8

NOTE: Go up after entering to get this screen.

4. UNIT DATA - 6. ALT SEQ. 08-15

EPAC ALT SEQ (PHASE PAIR TO REVERSE)

SEQ	.PP1.	.PP2.	.PP3.	.PP4.	.PP5.	.PP6.
08						
09						
10						
11						

SEQ	.PP1.	.PP2.	.PP3.	.PP4.	.PP5.	.PP6.
12						
13						
14						
15						

4. UNIT DATA - 3. OVERLAP STANDARD

Phase	1	2	3	4	5	6	7	8	CH#
Overlap A									
Overlap B									
Overlap C									
Overlap D									
Overlap E									
Overlap F									
Overlap G									
Overlap H									

Phase	1	2	3	4	5	6	7	8	CH#
Overlap I									
Overlap J									
Overlap K									
Overlap L									
Overlap M									
Overlap N									
Overlap O									
Overlap P									

Enter a "1" in the channel # shown.

0 = Phase not part of overlap; 1 = Phase part of overlap.

4. UNIT DATA - 4. OVERLAP SPECIAL

Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trail green																
Trail yellow																
Trail red																
-Green / -yellow (-G/Y)																
+Green (+GRN)																

- * Overlap green omitted by # - phase green; Overlap yellow omitted by # - phase yellow
- * For FYA operation, '-G/Y' entry defines the phase that is the green arrow
- * For FYA operation, '+GRN' entry is the thru phase opposing the FYA phase

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

4. UNIT DATA - 8. I/O MISCELLANEOUS

Ring#	1	2	3	4	CONN	MODE
Input Response	1				"D"	
Output Select	1				"D"	

Connector "D" : 0 = Standard & 1 = Alternate

I/O Modes	INPUT	OUTPUT
"ABC" Connector		
"D" Connector		

Controller with Solo Detection:

EPAC300/M52 enter "1" under D Conn Input

2070 enter "0" under D Conn Input

5. COORDINATION DATA - 1. COORD SETUP

	O	1	2	3	4	5
OPER: <u>1</u>	FRE	AUT	MAN	-----	-----	-----
MODE: <u>0</u>	PRM	YLD	PYL	POM	SOM	FAC
MAX : <u>0</u>	INH	MX1	MX2	-----	-----	-----
CORR: <u>2</u>	DWL	MDW	SWY	SW+	-----	-----
OFST: <u>0</u>	BEG	END OF GREEN				
FRCE: <u>0</u>	PLN CYC LE TIME					
MX DWELL:	YIELD PERIOD:					

5. COORDINATION DATA - 2. MANUAL CONTROL

DIAL: _____ SPLIT: _____ OFFSET: _____ SYNC: _____

To set cycle zero in manual control enter "1" for sync then press "E".

5. COORDINATION DATA - 3. DIAL/SPLIT DATA

Mode: 0 = actuated, 1 = coord phase, 2 = minimum recall, 3 = maximum recall,
 4 = pedestrian recall, 5 = maximum + pedestrian recall, 6 = phase omit,
 7 = dual coord phase.

Sequence: 00 - 15 (Unit data has definition)

Ring Lag: Ring offset from local cycle zero when not barrier locked to Ring #1.

Time: 00 - 99 seconds.

6. TIME BASE DATA - 4. AUXILIARY EVENTS

REFERENCE DATA:
PRO DAY = 00 - 99
(Program day)

AUX = Output states
DET VALUE:
 1 = Det diag value
 2 = Enables report
 3 = Repeat multiplier

ALL: 0 = off, 1 = on

6. TIME BASE DATA - 5. TIME OF YEAR EVENTS

REFERENCE DATA
Special day = Any
program day 00 - 99.

Special week:
Week 0 = Pro Day 01-07
Week 1 = Pro Day 11-17
Week 2 = Pro Day 21-27

6. TIME BASE DATA - 6. EQUATE/TRANSFER

DAY EQUATE: Care must be taken to insure days are not equated to undefined days or days that are equated to other days. The result will be a day without events to run.

ROAD COMMISSION FOR OAKLAND COUNTY, WATERFORD, MICHIGAN
PROGRAM LOG FOR EAGLE SIGNAL CONTROLLER Epac300, Mod 52 and 2070

7. PREEMPT DATA - 1. ALL PREEMPTS

RING TIMES		1	2	3	4	
MIN GREEN/WALK						
OVERRIDE	FL	1/2	2/3	3/4	4/5	5/6
STATUS						
CODES	0 = NO, 1 = YES					

7. PREEMPT DATA - PREEMPT 1

1. MISC DATA: (0 = no, 1 = yes)

TEST...: _____ N-LOCK.: _____ LINK PR#...: _____
 DELAY: _____ EXTEND: _____ DURATION: _____
 _____ MXCALL: _____ LOCK OUT: _____

RING	1	2	3	4	5	6	7	8
EXIT								
CALLS								

2. INTERVAL TIMES:

SEL PED CLR: _____ TRK YEL CHG: _____
 SEL YEL CHG: _____ TRK RED CLR: _____
 SEL RED CLR: _____ DWELL GREEN: _____
 TRACK GREEN: _____ RET PED CLR: _____
 TRK PED CLR: _____ RET YEL CHG: _____
 RET YEL CLR: _____

3. VEHICLE STATUS:

PHASE	1	2	3	4	5	6	7	8
TRK GRN								
DWELL								

(0=red, 1=grn, 2=flr, 3=fly, 4=dark)

CYCLE								
-------	--	--	--	--	--	--	--	--

(0=no, 1=act, 2=min recall, 3=max recall)

4. PEDESTRIAN STATUS:

PHASE	1	2	3	4	5	6	7	8
TRK GRN								
DWELL								

(0=dont wlk, 1=wlk, 2=flwlk, 3=dark)

CYCLE								
-------	--	--	--	--	--	--	--	--

(0 = no, 1 = act, 2 = recall)

5. OVERLAP STATUS:

OVERLAP	A	B	C	D
TRK GRN				
DWELL				

(0=red, 1=grn, 2=flr, 3=fly, 4=dark)

CYCLE								
-------	--	--	--	--	--	--	--	--

(0 = no, 1 = act)

6. LOW PRIORITY: (0=no, 1=yes)

TEST...: _____ N-LOCK.: _____ SKIP.....: _____
 DELAY: _____ EXTEND: _____ DURATION: _____
 DWELL: _____ MXCALL: _____ LOCK OUT: _____

RING	1	2	3	4	5	6	7	8
DWELL								
CALLS								

SIGNAL PHASING

PHASE#	ROAD	PHASE	LOAD SW	FLASH
1				
2	Brown	A, C	2	A
3				
4	Pierce	B, D	4	R
5				
6				
7				
8				
OLA				
OLB				
OLC				
OLD				
1PED				
2PED	Brown Ped	WA, WC	6	
3PED				
4PED	Pierce Ped	WB, WD	8	
5PED				
6PED				
7PED				
8PED				

Advanced/Delayed Walk Operation

BROWN AT PIERCE (#297)

EPAC firmware 3.33b minimum

From Main Menu:

3 -- Phase Data

0 -- Misc Ped Options

PHASE . . .	1 . . .	2 . . .	3 . . .	4 . . .	5 . . .	6 . . .	7 . . .	8
WOFF/10	0	30	0	30	0	0	0	0
MODE	0	0	0	0	0	0	0	0

WOFF MODE: 0=ADVANCE WALK 1=DELAY WALK

Phase 2 - Brown Road - 3.0 seconds LPI

Phase 4 - Pierce Road - 3.0 seconds LPI

CONTROLLER INFORMATION SHEET
Size M Cabinet with MOD 52 EPAC

INTERSECTION: BROWN & PIERCE
COUNTY NO: 297
STATE NO: -
PREPARED BY: C.MARKEL
DATE: 06/01/06

BACKPANEL:

LOAD SWITCH 2:	BROWN	A&C	FLA
LOAD SWITCH 4:	PIERCE	B&D	FLR
LOAD SWITCH 6:	BROWN PED	WA&WC	
LOAD SWITCH 8:	PIERCE PED	WB&WD	

JUMPERS:

121-213,151-152,153-154,155-156,173-174,175-176,177-178,179-180,185-186,
223-224,229-230,233-PB1,237-PB1,241-PB1,255-256,257-258,259-260,261-262,
263-PB1,268-269,273-274.

CONFLICT MONITOR: NONE.

ALL SWITCHES OFF EXCEPT: DUAL SELECT A&B; G&Y ENABLE;

MINIMUM FLASH = 4+2+1.



APPROACH SPEEDS:

BROWN 25 MPH
PIERCE 25 MPH

INSTALL PIPE EXTENSIONS AS FOLLOWS:

T.S.#1 - NO PIPE	T.S.#5 - NO PIPE
T.S.#2 - NO PIPE	T.S.#6 - NO PIPE
T.S.#3 - NO PIPE	T.S.#7 - NO PIPE
T.S.#4 - NO PIPE	T.S.#8 - NO PIPE

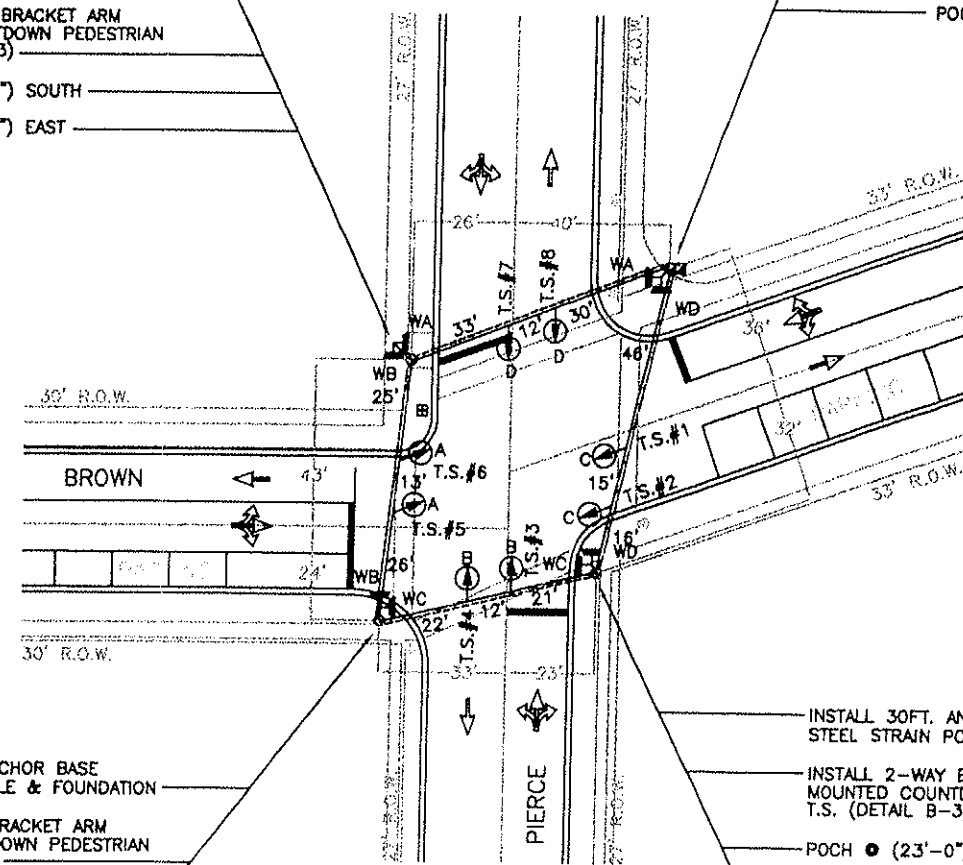
- INSTALL 30FT. ANCHOR BASE STEEL STRAIN POLE & FOUNDATION
- INSTALL CONTROLLER & CABINET MOUNTED ON STEEL POLE
- INSTALL 120V. SERVICE
- INSTALL 60A. SAFETY SWITCH (STAINLESS STEEL)
- INSTALL 2-WAY BRACKET ARM MOUNTED COUNTDOWN PEDESTRIAN T.S. (DETAIL B-3)
- POCH • (23'-0") SOUTH
- POCH • (23'-0") WEST

INSTALL 30FT. ANCHOR BASE
STEEL STRAIN POLE & FOUNDATION

INSTALL 2-WAY BRACKET ARM
MOUNTED COUNTDOWN PEDESTRIAN
T.S. (DETAIL B-3) _____

POCH • (23'-0") SOUTH _____

POCH • (23'-0") EAST _____



INSTALL 30FT. ANCHOR BASE
STEEL STRAIN POLE & FOUNDATION

INSTALL 2-WAY BRACKET ARM
MOUNTED COUNTDOWN PEDESTRIAN
T.S. (DETAIL B-3)

POCH • (23'-0") NORTH

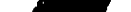
POCH • (23'-0") EAST

- INSTALL 30FT. ANCHOR BASE
STEEL STRAIN POLE & FOUNDATION
- INSTALL 2-WAY BRACKET ARM
MOUNTED COUNTDOWN PEDESTRIAN
T.S. (DETAIL B-3)
- POCH • (23'-0") NORTH
- POCH • (23'-0") WEST

NOTE:
L.E.D. SIGNAL LAMPS ARE
REQUIRED FOR THIS PROJECT.

INSTALLATION PLAN

SCALE 1"=50'




















DRAWN	M.M.M.	CITY	BIRMINGHAM					
DESIGNED	D.J.N.	LOCATION #	297					
APPROVED	C.T.K.	LOCATION	BROWN & PIERCE		DATE	REVISION		
		DATE	PROJECT #	PROJECT NAME	SHEET NO.	TOTAL SHEETS		
		05/10/06			01	01		

LOS OUTPUT REPORTS

HCM 6th Signalized Intersection Summary




1: S Old Woodward Ave & E Brown St

2021 Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	190	88	32	125	20	193	132	96	47	114	50
Future Volume (veh/h)	28	190	88	32	125	20	193	132	96	47	114	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1984	1984	1984	2048	2048	2048	1938	1938	1938
Adj Flow Rate, veh/h	31	209	97	39	151	24	235	161	117	51	123	54
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.82	0.82	0.82	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	122	768	340	374	575	91	576	423	307	448	579	254
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	217	2230	986	1076	1668	265	1248	928	675	1078	1271	558
Grp Volume(v), veh/h	179	0	158	39	0	175	235	0	278	51	0	177
Grp Sat Flow(s),veh/h/ln	1830	0	1602	1076	0	1933	1248	0	1603	1078	0	1829
Q Serve(g_s), s	0.0	0.0	6.4	2.5	0.0	5.9	12.6	0.0	10.3	2.9	0.0	5.2
Cycle Q Clear(g_c), s	5.9	0.0	6.4	8.9	0.0	5.9	17.8	0.0	10.3	13.2	0.0	5.2
Prop In Lane	0.17		0.62	1.00		0.14	1.00		0.42	1.00		0.31
Lane Grp Cap(c), veh/h	677	0	552	374	0	666	576	0	730	448	0	833
V/C Ratio(X)	0.26	0.00	0.29	0.10	0.00	0.26	0.41	0.00	0.38	0.11	0.00	0.21
Avail Cap(c_a), veh/h	677	0	552	374	0	666	576	0	730	448	0	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	21.4	24.7	0.0	21.3	20.1	0.0	16.1	20.5	0.0	14.8
Incr Delay (d2), s/veh	1.0	0.0	1.3	0.6	0.0	1.0	2.1	0.0	1.5	0.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	2.6	0.7	0.0	2.8	3.9	0.0	4.0	0.8	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	0.0	22.7	25.2	0.0	22.2	22.3	0.0	17.6	21.0	0.0	15.3
LnGrp LOS	C	A	C	C	A	C	C	A	B	C	A	B
Approach Vol, veh/h		337			214			513			228	
Approach Delay, s/veh		22.5			22.8			19.8			16.6	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0		40.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		41.0		31.0		41.0		31.0				
Max Q Clear Time (g_c+I1), s		19.8		10.9		15.2		8.4				
Green Ext Time (p_c), s		2.6		1.1		1.3		2.1				
Intersection Summary												
HCM 6th Ctrl Delay				20.4								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2021 Existing Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	32	420	224	10
Future Vol, veh/h	1	3	32	420	224	10
Conflicting Peds, #/hr	9	0	23	0	0	23
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	84	84	92	92
Heavy Vehicles, %	0	0	3	3	1	1
Mvmt Flow	2	5	38	500	243	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	857	272	277	0	-	0
Stage 1	272	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	330	772	1280	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	755	1252	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	549	-	-	-	-	-

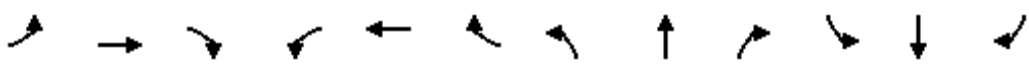
Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1252	-	549	-	-
HCM Lane V/C Ratio	0.03	-	0.012	-	-
HCM Control Delay (s)	8	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

HCM 6th Signalized Intersection Summary

3: Pierce St & W Brown St/E Brown St

2021 Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	17	288	27	20	148	32	34	44	39	36	29	10
Future Volume (veh/h)	17	288	27	20	148	32	34	44	39	36	29	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1969	1969	1969	2000	2000	2000	1875	1875	1875
Adj Flow Rate, veh/h	20	343	32	27	197	43	47	61	54	40	32	11
Peak Hour Factor	0.84	0.84	0.84	0.75	0.75	0.75	0.72	0.72	0.72	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	8	8	8
Cap, veh/h	67	782	71	109	756	157	132	158	116	196	140	41
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	36	1455	131	111	1406	291	310	665	488	545	589	173
Grp Volume(v), veh/h	395	0	0	267	0	0	162	0	0	83	0	0
Grp Sat Flow(s),veh/h/ln	1622	0	0	1808	0	0	1463	0	0	1307	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.7	0.0	0.0	6.0	0.0	0.0	7.2	0.0	0.0	3.6	0.0	0.0
Prop In Lane	0.05		0.08	0.10		0.16	0.29		0.33	0.48		0.13
Lane Grp Cap(c), veh/h	919	0	0	1021	0	0	405	0	0	377	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.26	0.00	0.00	0.40	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	919	0	0	1021	0	0	405	0	0	377	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	0.0	9.9	0.0	0.0	25.9	0.0	0.0	24.6	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.6	0.0	0.0	2.9	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	2.5	0.0	0.0	2.9	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	0.0	0.0	10.6	0.0	0.0	28.8	0.0	0.0	25.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		395			267			162			83	
Approach Delay, s/veh		12.7			10.6			28.8			25.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		28.0		52.0		28.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		43.0		19.0		43.0		19.0				
Max Q Clear Time (g_c+I1), s		13.7		9.2		8.0		5.6				
Green Ext Time (p_c), s		2.8		0.6		1.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				16.2								
HCM 6th LOS				B								

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	126	144	68	164	120	200	75	153
Average Queue (ft)	67	70	22	68	81	98	25	62
95th Queue (ft)	113	125	56	127	131	185	60	122
Link Distance (ft)	298	298		227		172		392
Upstream Blk Time (%)				0		2		
Queuing Penalty (veh)				0		9		
Storage Bay Dist (ft)			90		75		150	
Storage Blk Time (%)			0	4	18	11		1
Queuing Penalty (veh)			0	1	41	21		0

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	25	114	46
Average Queue (ft)	4	20	2
95th Queue (ft)	19	73	18
Link Distance (ft)	545	373	172
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	244	165	135	128
Average Queue (ft)	103	62	54	36
95th Queue (ft)	193	133	108	87
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				




















Zone Summary

Zone wide Queuing Penalty: 72

HCM 6th Signalized Intersection Summary




1: S Old Woodward Ave & E Brown St

2021 Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	291	154	23	179	41	122	252	42	60	206	56
Future Volume (veh/h)	55	291	154	23	179	41	122	252	42	60	206	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.99		0.97	0.99		0.96	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1984	1984	1984	2048	2048	2048	1938	1938	1938
Adj Flow Rate, veh/h	65	346	183	25	197	45	137	283	47	71	242	66
Peak Hour Factor	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	153	780	400	304	603	138	405	594	99	355	599	163
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	270	2005	1029	872	1552	354	1107	1445	240	1026	1457	397
Grp Volume(v), veh/h	316	0	278	25	0	242	137	0	330	71	0	308
Grp Sat Flow(s),veh/h/ln	1739	0	1564	872	0	1906	1107	0	1685	1026	0	1854
Q Serve(g_s), s	3.6	0.0	11.9	2.0	0.0	8.0	9.0	0.0	12.9	4.9	0.0	10.6
Cycle Q Clear(g_c), s	11.6	0.0	11.9	13.9	0.0	8.0	19.5	0.0	12.9	17.8	0.0	10.6
Prop In Lane	0.21		0.66	1.00		0.19	1.00		0.14	1.00		0.21
Lane Grp Cap(c), veh/h	725	0	608	304	0	741	405	0	693	355	0	762
V/C Ratio(X)	0.44	0.00	0.46	0.08	0.00	0.33	0.34	0.00	0.48	0.20	0.00	0.40
Avail Cap(c_a), veh/h	725	0	608	304	0	741	405	0	693	355	0	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	20.4	25.6	0.0	19.2	25.6	0.0	19.4	25.9	0.0	18.7
Incr Delay (d2), s/veh	1.9	0.0	2.5	0.5	0.0	1.2	2.3	0.0	2.3	1.3	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	4.7	0.5	0.0	3.7	2.6	0.0	5.4	1.3	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	22.9	26.1	0.0	20.4	27.9	0.0	21.7	27.2	0.0	20.3
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		594			267			467			379	
Approach Delay, s/veh		22.5			21.0			23.5			21.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.0		44.0		46.0		44.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		37.0		35.0		37.0		35.0				
Max Q Clear Time (g_c+I1), s		21.5		15.9		19.8		13.9				
Green Ext Time (p_c), s		2.4		1.5		2.1		4.1				
Intersection Summary												
HCM 6th Ctrl Delay				22.3								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2021 Existing Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	17	39	409	363	20
Future Vol, veh/h	7	17	39	409	363	20
Conflicting Peds, #/hr	10	0	21	0	0	21
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	91	91	85	85
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	9	23	43	449	427	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1005	460	472	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	270	605	1090	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	245	593	1068	-	-	-
Mov Cap-2 Maneuver	245	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	573	-	-	-	-	-

















Approach	EB	NB	SB
HCM Control Delay, s	14.3	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1068	-	419	-	-
HCM Lane V/C Ratio	0.04	-	0.076	-	-
HCM Control Delay (s)	8.5	0	14.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

HCM 6th Signalized Intersection Summary

3: Pierce St & W Brown St/E Brown St

2021 Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	300	32	21	276	50	31	60	44	36	67	43
Future Volume (veh/h)	27	300	32	21	276	50	31	60	44	36	67	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.98		0.97	0.98		0.95
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1953	1953	1953	2000	2000	2000
Adj Flow Rate, veh/h	33	366	39	24	321	58	44	86	63	43	81	52
Peak Hour Factor	0.82	0.82	0.82	0.86	0.86	0.86	0.70	0.70	0.70	0.83	0.83	0.83
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	0	0	0
Cap, veh/h	83	746	76	76	843	146	107	181	113	115	191	105
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	64	1387	142	53	1568	272	217	761	474	247	804	441
Grp Volume(v), veh/h	438	0	0	403	0	0	193	0	0	176	0	0
Grp Sat Flow(s),veh/h/ln	1593	0	0	1893	0	0	1451	0	0	1493	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.3	0.0	0.0	9.7	0.0	0.0	8.7	0.0	0.0	7.5	0.0	0.0
Prop In Lane	0.08		0.09	0.06		0.14	0.23		0.33	0.24		0.30
Lane Grp Cap(c), veh/h	905	0	0	1065	0	0	400	0	0	411	0	0
V/C Ratio(X)	0.48	0.00	0.00	0.38	0.00	0.00	0.48	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	905	0	0	1065	0	0	400	0	0	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	10.8	0.0	0.0	26.6	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	1.0	0.0	0.0	4.1	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	4.2	0.0	0.0	3.6	0.0	0.0	3.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.0	0.0	11.8	0.0	0.0	30.7	0.0	0.0	29.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		438			403			193			176	
Approach Delay, s/veh		13.5			11.8			30.7			29.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		28.0		52.0		28.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		43.0		19.0		43.0		19.0				
Max Q Clear Time (g_c+I1), s		15.3		10.7		11.7		9.5				
Green Ext Time (p_c), s		3.2		0.7		3.0		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				18.0								
HCM 6th LOS				B								

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	196	212	91	207	120	192	124	211
Average Queue (ft)	102	110	18	92	74	124	37	103
95th Queue (ft)	170	189	55	166	132	203	88	189
Link Distance (ft)	298	298		227		172		392
Upstream Blk Time (%)				0		4		
Queuing Penalty (veh)				0		15		
Storage Bay Dist (ft)			90		75		150	
Storage Blk Time (%)			0	9	13	22		3
Queuing Penalty (veh)			0	2	38	27		2

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	35	145	74
Average Queue (ft)	15	34	5
95th Queue (ft)	37	100	33
Link Distance (ft)	545	373	172
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	241	241	165	153
Average Queue (ft)	109	103	68	61
95th Queue (ft)	199	194	133	122
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary




















Zone wide Queuing Penalty: 85

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St




2021 Existing Conditions

Sat Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	183	118	25	96	84	114	272	59	80	181	83
Future Volume (veh/h)	55	183	118	25	96	84	114	272	59	80	181	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.90	0.97		0.92	0.99		0.91	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	2048	2048	2048	1984	1984	1984
Adj Flow Rate, veh/h	67	223	144	29	113	99	134	320	69	84	191	87
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.85	0.85	0.85	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	1	1	1
Cap, veh/h	191	610	394	357	356	312	417	574	124	324	454	207
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	369	1614	1043	996	944	827	1133	1359	293	998	1076	490
Grp Volume(v), veh/h	229	0	205	29	0	212	134	0	389	84	0	278
Grp Sat Flow(s),veh/h/ln	1540	0	1486	996	0	1770	1133	0	1653	998	0	1565
Q Serve(g_s), s	3.6	0.0	9.0	1.9	0.0	7.6	8.5	0.0	16.0	6.2	0.0	11.2
Cycle Q Clear(g_c), s	11.2	0.0	9.0	10.9	0.0	7.6	19.7	0.0	16.0	22.3	0.0	11.2
Prop In Lane	0.29		0.70	1.00		0.47	1.00		0.18	1.00		0.31
Lane Grp Cap(c), veh/h	634	0	561	357	0	669	417	0	698	324	0	661
V/C Ratio(X)	0.36	0.00	0.37	0.08	0.00	0.32	0.32	0.00	0.56	0.26	0.00	0.42
Avail Cap(c_a), veh/h	634	0	561	357	0	669	417	0	698	324	0	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	20.2	24.2	0.0	19.8	25.2	0.0	19.6	28.1	0.0	18.3
Incr Delay (d2), s/veh	1.6	0.0	1.8	0.4	0.0	1.2	2.0	0.0	3.2	1.9	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	3.4	0.5	0.0	3.3	2.5	0.0	6.6	1.7	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	22.0	24.6	0.0	21.0	27.2	0.0	22.8	30.0	0.0	20.2
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		434			241			523			362	
Approach Delay, s/veh		22.1			21.5			24.0			22.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		43.0		47.0		43.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		38.0		34.0		38.0		34.0				
Max Q Clear Time (g_c+I1), s		21.7		12.9		24.3		13.2				
Green Ext Time (p_c), s		2.9		1.4		1.8		2.9				
Intersection Summary												
HCM 6th Ctrl Delay				22.7								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2021 Existing Conditions
Sat Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	20	440	298	26
Future Vol, veh/h	5	10	20	440	298	26
Conflicting Peds, #/hr	0	0	68	0	0	68
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	88	88	95	95
Heavy Vehicles, %	8	8	1	1	1	1
Mvmt Flow	8	17	23	500	314	27

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	942	396	409	0	-	0
Stage 1	396	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.11	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.209	-	-	-
Pot Cap-1 Maneuver	285	640	1155	-	-	-
Stage 1	667	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	242	599	1080	-	-	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	532	-	-	-	-	-

















Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1080	-	402	-	-
HCM Lane V/C Ratio	0.021	-	0.062	-	-
HCM Control Delay (s)	8.4	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

HCM 6th Signalized Intersection Summary

3: Pierce St & W Brown St/E Brown St

2021 Existing Conditions
Sat Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	243	25	16	174	95	14	53	41	69	45	24
Future Volume (veh/h)	35	243	25	16	174	95	14	53	41	69	45	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.95	0.97		0.95
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	2000	2000	2000	2000	2000	2000
Adj Flow Rate, veh/h	41	286	29	19	207	113	16	62	48	78	51	27
Peak Hour Factor	0.85	0.85	0.85	0.84	0.84	0.84	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	0	0	0
Cap, veh/h	109	683	66	70	602	313	75	221	151	226	137	62
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	115	1332	128	44	1176	610	93	842	575	603	523	236
Grp Volume(v), veh/h	356	0	0	339	0	0	126	0	0	156	0	0
Grp Sat Flow(s),veh/h/ln	1576	0	0	1830	0	0	1510	0	0	1361	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	10.5	0.0	0.0	8.7	0.0	0.0	5.2	0.0	0.0	6.6	0.0	0.0
Prop In Lane	0.12		0.08	0.06		0.33	0.13		0.38	0.50		0.17
Lane Grp Cap(c), veh/h	858	0	0	985	0	0	447	0	0	425	0	0
V/C Ratio(X)	0.41	0.00	0.00	0.34	0.00	0.00	0.28	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	858	0	0	985	0	0	447	0	0	425	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.1	0.0	0.0	11.6	0.0	0.0	23.7	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	1.0	0.0	0.0	1.6	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	3.6	0.0	0.0	2.1	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	0.0	12.6	0.0	0.0	25.2	0.0	0.0	26.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h	356			339			126			156		
Approach Delay, s/veh	13.6			12.6			25.2			26.5		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	50.0			30.0			50.0			30.0		
Change Period (Y+Rc), s	9.0			9.0			9.0			9.0		
Max Green Setting (Gmax), s	41.0			21.0			41.0			21.0		
Max Q Clear Time (g_c+I1), s	12.5			7.2			10.7			8.6		
Green Ext Time (p_c), s	2.5			0.5			2.4			0.7		
Intersection Summary												
HCM 6th Ctrl Delay	16.8											
HCM 6th LOS	B											

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	152	161	111	156	120	192	141	202
Average Queue (ft)	76	76	21	71	70	125	53	93
95th Queue (ft)	130	134	65	134	129	200	116	173
Link Distance (ft)	298	298		227		172		392
Upstream Blk Time (%)						4		
Queuing Penalty (veh)						20		
Storage Bay Dist (ft)			90		75		150	
Storage Blk Time (%)			0	4	12	26	0	2
Queuing Penalty (veh)			1	1	42	30	0	2

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	39	234
Average Queue (ft)	11	29
95th Queue (ft)	33	122
Link Distance (ft)	545	373
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	199	185	118	154
Average Queue (ft)	98	78	47	52
95th Queue (ft)	173	147	94	107
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

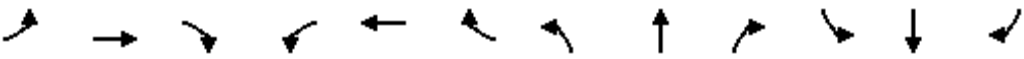
Zone wide Queuing Penalty: 95

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St






2024 Background Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	28	193	89	32	127	20	196	134	97	48	116	51
Future Volume (veh/h)	28	193	89	32	127	20	196	134	97	48	116	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1984	1984	1984	2048	2048	2048	1938	1938	1938
Adj Flow Rate, veh/h	31	212	98	39	153	24	239	163	118	52	125	55
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.82	0.82	0.82	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	120	770	339	372	576	90	573	424	307	445	579	255
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	213	2236	985	1072	1672	262	1244	930	673	1075	1270	559
Grp Volume(v), veh/h	182	0	159	39	0	177	239	0	281	52	0	180
Grp Sat Flow(s),veh/h/ln	1832	0	1602	1072	0	1934	1244	0	1603	1075	0	1829
Q Serve(g_s), s	0.0	0.0	6.5	2.5	0.0	5.9	12.9	0.0	10.4	3.0	0.0	5.3
Cycle Q Clear(g_c), s	6.0	0.0	6.5	9.0	0.0	5.9	18.3	0.0	10.4	13.4	0.0	5.3
Prop In Lane	0.17		0.61	1.00		0.14	1.00		0.42	1.00		0.31
Lane Grp Cap(c), veh/h	678	0	552	372	0	666	573	0	730	445	0	833
V/C Ratio(X)	0.27	0.00	0.29	0.10	0.00	0.27	0.42	0.00	0.38	0.12	0.00	0.22
Avail Cap(c_a), veh/h	678	0	552	372	0	666	573	0	730	445	0	833
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	21.5	24.7	0.0	21.3	20.3	0.0	16.2	20.6	0.0	14.8
Incr Delay (d2), s/veh	1.0	0.0	1.3	0.6	0.0	1.0	2.2	0.0	1.5	0.5	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	2.6	0.7	0.0	2.9	4.0	0.0	4.0	0.8	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	22.8	25.3	0.0	22.3	22.5	0.0	17.7	21.1	0.0	15.4
LnGrp LOS	C	A	C	C	A	C	C	A	B	C	A	B
Approach Vol, veh/h		341			216			520			232	
Approach Delay, s/veh		22.5			22.8			19.9			16.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0		40.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		41.0		31.0		41.0		31.0				
Max Q Clear Time (g_c+I1), s		20.3		11.0		15.4		8.5				
Green Ext Time (p_c), s		2.7		1.1		1.3		2.1				
Intersection Summary												
HCM 6th Ctrl Delay				20.5								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2024 Background Conditions
AM Peak Hour

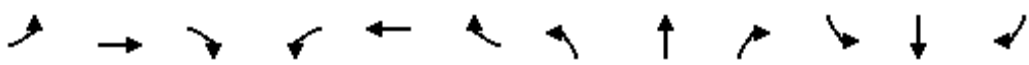
Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	32	426	227	10
Future Vol, veh/h	1	3	32	426	227	10
Conflicting Peds, #/hr	9	0	23	0	0	23
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	84	84	92	92
Heavy Vehicles, %	0	0	3	3	1	1
Mvmt Flow	2	5	38	507	247	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	868	276	281	0	-	0
Stage 1	276	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	325	768	1276	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	751	1248	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.7	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1248	-	548	-	-	
HCM Lane V/C Ratio	0.031	-	0.012	-	-	
HCM Control Delay (s)	8	-	11.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th Signalized Intersection Summary

3: Pierce St & W Brown St/E Brown St




2024 Background Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	18	292	27	21	150	32	35	45	40	37	30	10
Future Volume (veh/h)	18	292	27	21	150	32	35	45	40	37	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1969	1969	1969	2000	2000	2000	1875	1875	1875
Adj Flow Rate, veh/h	21	348	32	28	200	43	49	62	56	41	33	11
Peak Hour Factor	0.84	0.84	0.84	0.75	0.75	0.75	0.72	0.72	0.72	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	8	8	8
Cap, veh/h	68	781	70	111	755	154	133	156	116	196	140	40
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	38	1453	129	114	1404	286	314	656	490	542	589	168
Grp Volume(v), veh/h	401	0	0	271	0	0	167	0	0	85	0	0
Grp Sat Flow(s),veh/h/ln	1621	0	0	1805	0	0	1460	0	0	1300	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.9	0.0	0.0	6.1	0.0	0.0	7.5	0.0	0.0	3.8	0.0	0.0
Prop In Lane	0.05		0.08	0.10		0.16	0.29		0.34	0.48		0.13
Lane Grp Cap(c), veh/h	919	0	0	1020	0	0	405	0	0	375	0	0
V/C Ratio(X)	0.44	0.00	0.00	0.27	0.00	0.00	0.41	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	919	0	0	1020	0	0	405	0	0	375	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	0.0	10.0	0.0	0.0	26.0	0.0	0.0	24.6	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.6	0.0	0.0	3.1	0.0	0.0	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	2.6	0.0	0.0	3.0	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	0.0	10.6	0.0	0.0	29.1	0.0	0.0	26.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		401			271			167			85	
Approach Delay, s/veh		12.8			10.6			29.1			26.0	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		28.0		52.0		28.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		43.0		19.0		43.0		19.0				
Max Q Clear Time (g_c+I1), s		13.9		9.5		8.1		5.8				
Green Ext Time (p_c), s		2.9		0.6		1.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				16.3								
HCM 6th LOS				B								

HCM 6th TWSC
4: Daines St & RH Driveway

2024 Background Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	42	0	0	0
Future Vol, veh/h	0	4	42	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	46	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	46	0	-	0	50	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1562	-	-	-	959	1023
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	1019	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1562	-	-	-	959	1023
Mov Cap-2 Maneuver	-	-	-	-	959	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	1019	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1562	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	122	142	90	153	180	167	79	143
Average Queue (ft)	63	66	27	68	88	81	25	59
95th Queue (ft)	106	122	67	124	158	148	60	113
Link Distance (ft)	298	298		228	169	169		392
Upstream Blk Time (%)					2	0		
Queuing Penalty (veh)					4	1		
Storage Bay Dist (ft)			90				150	
Storage Blk Time (%)			0	4				0
Queuing Penalty (veh)			0	1				0

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	32	40	121	44
Average Queue (ft)	4	8	11	3
95th Queue (ft)	21	32	68	21
Link Distance (ft)	72	373	373	169
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	189	134	137	100
Average Queue (ft)	104	58	56	34
95th Queue (ft)	176	116	106	79
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Daines St & RH Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary




















Zone wide Queuing Penalty: 7

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St





2024 Background Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	298	168	25	186	42	124	258	43	61	213	57
Future Volume (veh/h)	56	298	168	25	186	42	124	258	43	61	213	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.99		0.97	0.99		0.96	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1984	1984	1984	2048	2048	2048	1938	1938	1938
Adj Flow Rate, veh/h	67	355	200	27	204	46	139	290	48	72	251	67
Peak Hour Factor	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	150	761	416	292	605	136	397	594	98	348	602	161
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	262	1956	1071	852	1556	351	1097	1446	239	1019	1465	391
Grp Volume(v), veh/h	332	0	290	27	0	250	139	0	338	72	0	318
Grp Sat Flow(s),veh/h/ln	1735	0	1555	852	0	1907	1097	0	1685	1019	0	1855
Q Serve(g_s), s	4.2	0.0	12.6	2.2	0.0	8.3	9.3	0.0	13.3	5.0	0.0	11.0
Cycle Q Clear(g_c), s	12.5	0.0	12.6	14.8	0.0	8.3	20.2	0.0	13.3	18.3	0.0	11.0
Prop In Lane	0.20		0.69	1.00		0.18	1.00		0.14	1.00		0.21
Lane Grp Cap(c), veh/h	723	0	605	292	0	742	397	0	693	348	0	763
V/C Ratio(X)	0.46	0.00	0.48	0.09	0.00	0.34	0.35	0.00	0.49	0.21	0.00	0.42
Avail Cap(c_a), veh/h	723	0	605	292	0	742	397	0	693	348	0	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.4	0.0	20.7	26.2	0.0	19.3	26.0	0.0	19.5	26.3	0.0	18.8
Incr Delay (d2), s/veh	2.1	0.0	2.7	0.6	0.0	1.2	2.4	0.0	2.4	1.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	5.0	0.5	0.0	3.9	2.7	0.0	5.6	1.3	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	23.4	26.9	0.0	20.6	28.4	0.0	22.0	27.6	0.0	20.5
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		622			277			477			390	
Approach Delay, s/veh		22.9			21.2			23.9			21.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.0		44.0		46.0		44.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		37.0		35.0		37.0		35.0				
Max Q Clear Time (g_c+I1), s		22.2		16.8		20.3		14.6				
Green Ext Time (p_c), s		2.4		1.6		2.2		4.3				
Intersection Summary												
HCM 6th Ctrl Delay				22.7								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2024 Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	17	40	421	375	27
Future Vol, veh/h	7	17	40	421	375	27
Conflicting Peds, #/hr	10	0	21	0	0	21
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	91	91	85	85
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	9	23	44	463	441	32

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1039	478	494	0	-	0
Stage 1	478	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	258	591	1070	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	237	579	1049	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.7	0
HCM LOS	B		

















Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1049	-	407	-	-
HCM Lane V/C Ratio	0.042	-	0.079	-	-
HCM Control Delay (s)	8.6	-	14.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

HCM 6th Signalized Intersection Summary

3: Pierce St & W Brown St/E Brown St




2024 Background Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	319	33	21	284	51	32	61	45	37	68	43
Future Volume (veh/h)	28	319	33	21	284	51	32	61	45	37	68	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.98		0.97	0.98		0.95
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1953	1953	1953	2000	2000	2000
Adj Flow Rate, veh/h	34	389	40	24	330	59	46	87	64	45	82	52
Peak Hour Factor	0.82	0.82	0.82	0.86	0.86	0.86	0.70	0.70	0.70	0.83	0.83	0.83
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	0	0	0
Cap, veh/h	82	749	74	75	844	145	109	179	112	118	190	103
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	64	1393	138	52	1570	270	226	754	472	259	802	434
Grp Volume(v), veh/h	463	0	0	413	0	0	197	0	0	179	0	0
Grp Sat Flow(s),veh/h/ln	1594	0	0	1893	0	0	1452	0	0	1495	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.4	0.0	0.0	10.0	0.0	0.0	8.9	0.0	0.0	7.6	0.0	0.0
Prop In Lane	0.07		0.09	0.06		0.14	0.23		0.32	0.25		0.29
Lane Grp Cap(c), veh/h	905	0	0	1065	0	0	400	0	0	411	0	0
V/C Ratio(X)	0.51	0.00	0.00	0.39	0.00	0.00	0.49	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	905	0	0	1065	0	0	400	0	0	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	0.0	0.0	10.9	0.0	0.0	26.6	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.1	0.0	0.0	4.3	0.0	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.0	4.3	0.0	0.0	3.7	0.0	0.0	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.0	0.0	11.9	0.0	0.0	30.9	0.0	0.0	29.5	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		463			413			197			179	
Approach Delay, s/veh		13.9			11.9			30.9			29.5	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		28.0		52.0		28.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		43.0		19.0		43.0		19.0				
Max Q Clear Time (g_c+I1), s		16.4		10.9		12.0		9.6				
Green Ext Time (p_c), s		3.4		0.7		3.1		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				18.2								
HCM 6th LOS				B								

HCM 6th TWSC
4: Daines St & RH Driveway

2024 Background Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	60	7	0	4
Future Vol, veh/h	0	24	60	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	65	8	0	4
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	73	0	-	0	95	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1527	-	-	-	905	994
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1527	-	-	-	905	994
Mov Cap-2 Maneuver	-	-	-	-	905	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	997	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.6		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1527	-	-	-	994	
HCM Lane V/C Ratio	-	-	-	-	0.004	
HCM Control Delay (s)	0	-	-	-	8.6	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	180	228	96	182	156	181	160	203
Average Queue (ft)	99	108	20	92	71	119	42	105
95th Queue (ft)	158	184	60	158	135	188	101	186
Link Distance (ft)	298	298		228	168	168		392
Upstream Blk Time (%)					1	3		
Queuing Penalty (veh)					3	6		
Storage Bay Dist (ft)			90				150	
Storage Blk Time (%)				10				3
Queuing Penalty (veh)				2				2

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	41	45	175	70
Average Queue (ft)	15	15	19	5
95th Queue (ft)	39	42	97	33
Link Distance (ft)	66	373	373	168
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	253	205	162	140
Average Queue (ft)	132	107	67	58
95th Queue (ft)	224	186	126	115
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Daines St & RH Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	119
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary




















Zone wide Queuing Penalty: 13

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St






2024 Background Conditions

Sat Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	189	134	29	101	85	115	282	60	81	193	84
Future Volume (veh/h)	56	189	134	29	101	85	115	282	60	81	193	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.90	0.97		0.92	0.99		0.91	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	2048	2048	2048	1984	1984	1984
Adj Flow Rate, veh/h	68	230	163	34	119	100	135	332	71	85	203	88
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.85	0.85	0.85	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	1	1	1
Cap, veh/h	183	593	419	344	364	306	406	575	123	313	462	200
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	348	1569	1108	975	964	810	1121	1362	291	987	1095	475
Grp Volume(v), veh/h	245	0	216	34	0	219	135	0	403	85	0	291
Grp Sat Flow(s),veh/h/ln	1559	0	1466	975	0	1775	1121	0	1653	987	0	1569
Q Serve(g_s), s	3.9	0.0	9.7	2.4	0.0	7.9	8.7	0.0	16.8	6.5	0.0	11.8
Cycle Q Clear(g_c), s	11.7	0.0	9.7	12.0	0.0	7.9	20.6	0.0	16.8	23.2	0.0	11.8
Prop In Lane	0.28		0.76	1.00		0.46	1.00		0.18	1.00		0.30
Lane Grp Cap(c), veh/h	640	0	554	344	0	670	406	0	698	313	0	663
V/C Ratio(X)	0.38	0.00	0.39	0.10	0.00	0.33	0.33	0.00	0.58	0.27	0.00	0.44
Avail Cap(c_a), veh/h	640	0	554	344	0	670	406	0	698	313	0	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	20.4	24.8	0.0	19.9	25.7	0.0	19.9	28.7	0.0	18.4
Incr Delay (d2), s/veh	1.7	0.0	2.1	0.6	0.0	1.3	2.2	0.0	3.5	2.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	3.6	0.6	0.0	3.5	2.6	0.0	6.9	1.7	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	22.5	25.4	0.0	21.2	27.9	0.0	23.3	30.9	0.0	20.6
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		461			253			538			376	
Approach Delay, s/veh		22.4			21.7			24.5			22.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		43.0		47.0		43.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		38.0		34.0		38.0		34.0				
Max Q Clear Time (g_c+I1), s		22.6		14.0		25.2		13.7				
Green Ext Time (p_c), s		2.9		1.5		1.8		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				23.1								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2024 Background Conditions
Sat Peak Hour

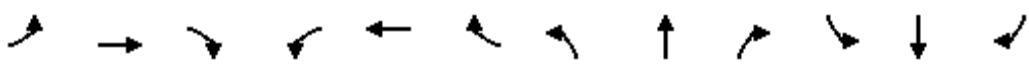
Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	20	456	314	33
Future Vol, veh/h	5	10	20	456	314	33
Conflicting Peds, #/hr	0	0	68	0	0	68
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	88	88	95	95
Heavy Vehicles, %	8	8	1	1	1	1
Mvmt Flow	8	17	23	518	331	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	981	417	434	0	-	0
Stage 1	417	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.11	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.209	-	-	-
Pot Cap-1 Maneuver	270	623	1131	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	231	583	1058	-	-	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	596	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.9	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1058	-	387	-	-	
HCM Lane V/C Ratio	0.021	-	0.065	-	-	
HCM Control Delay (s)	8.5	-	14.9	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

HCM 6th Signalized Intersection Summary

3: Pierce St & W Brown St/E Brown St




2024 Background Conditions

Sat Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	36	265	25	16	179	96	14	53	42	70	46	24
Future Volume (veh/h)	36	265	25	16	179	96	14	53	42	70	46	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.95	0.97		0.95
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	2000	2000	2000	2000	2000	2000
Adj Flow Rate, veh/h	42	312	29	19	213	114	16	62	49	79	52	27
Peak Hour Factor	0.85	0.85	0.85	0.84	0.84	0.84	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	0	0	0
Cap, veh/h	105	695	61	70	607	309	75	219	153	226	138	61
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	108	1356	120	43	1184	603	92	835	582	603	526	233
Grp Volume(v), veh/h	383	0	0	346	0	0	127	0	0	158	0	0
Grp Sat Flow(s),veh/h/ln	1583	0	0	1830	0	0	1509	0	0	1362	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	11.6	0.0	0.0	8.9	0.0	0.0	5.2	0.0	0.0	6.7	0.0	0.0
Prop In Lane	0.11		0.08	0.05		0.33	0.13		0.39	0.50		0.17
Lane Grp Cap(c), veh/h	861	0	0	985	0	0	447	0	0	425	0	0
V/C Ratio(X)	0.44	0.00	0.00	0.35	0.00	0.00	0.28	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	861	0	0	985	0	0	447	0	0	425	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	11.7	0.0	0.0	23.7	0.0	0.0	24.1	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.0	0.0	0.0	1.6	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	3.7	0.0	0.0	2.1	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	0.0	12.7	0.0	0.0	25.3	0.0	0.0	26.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		383			346			127			158	
Approach Delay, s/veh		14.0			12.7			25.3			26.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0		30.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		41.0		21.0		41.0		21.0				
Max Q Clear Time (g_c+I1), s		13.6		7.2		10.9		8.7				
Green Ext Time (p_c), s		2.7		0.5		2.5		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

HCM 6th TWSC
4: Daines St & RH Driveway

2024 Background Conditions
Sat Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	47	6	0	9
Future Vol, veh/h	0	15	47	6	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	51	7	0	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	58	0	-	0	71	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1546	-	-	-	933	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1546	-	-	-	933	1012
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.6		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1546	-	-	-	1012	
HCM Lane V/C Ratio	-	-	-	-	0.01	
HCM Control Delay (s)	0	-	-	-	8.6	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	138	162	69	143	142	182	134	214
Average Queue (ft)	73	76	20	74	69	121	49	99
95th Queue (ft)	125	135	54	127	123	191	106	178
Link Distance (ft)	298	298		228	167	167		392
Upstream Blk Time (%)					0	3		
Queuing Penalty (veh)					0	6		
Storage Bay Dist (ft)			90				150	
Storage Blk Time (%)				5				2
Queuing Penalty (veh)				1				2

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	44	31	92	17
Average Queue (ft)	10	7	7	1
95th Queue (ft)	34	29	49	10
Link Distance (ft)	61	374	374	167
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	234	179	125	143
Average Queue (ft)	100	80	44	56
95th Queue (ft)	184	150	90	112
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Daines St & RH Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	34
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	112
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary




















Zone wide Queuing Penalty: 10

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St






2024 Future Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	197	92	32	134	20	216	135	97	48	118	60
Future Volume (veh/h)	30	197	92	32	134	20	216	135	97	48	118	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1984	1984	1984	2048	2048	2048	1938	1938	1938
Adj Flow Rate, veh/h	33	216	101	39	161	24	263	165	118	52	127	65
Peak Hour Factor	0.91	0.91	0.91	0.83	0.83	0.83	0.82	0.82	0.82	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	124	762	340	367	580	87	562	426	305	444	548	280
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	224	2213	988	1065	1685	251	1231	935	669	1073	1203	616
Grp Volume(v), veh/h	186	0	164	39	0	185	263	0	283	52	0	192
Grp Sat Flow(s),veh/h/ln	1823	0	1602	1065	0	1936	1231	0	1604	1073	0	1818
Q Serve(g_s), s	0.0	0.0	6.7	2.5	0.0	6.2	14.9	0.0	10.5	3.0	0.0	5.8
Cycle Q Clear(g_c), s	6.2	0.0	6.7	9.2	0.0	6.2	20.7	0.0	10.5	13.5	0.0	5.8
Prop In Lane	0.18		0.62	1.00		0.13	1.00		0.42	1.00		0.34
Lane Grp Cap(c), veh/h	675	0	552	367	0	667	562	0	731	444	0	828
V/C Ratio(X)	0.28	0.00	0.30	0.11	0.00	0.28	0.47	0.00	0.39	0.12	0.00	0.23
Avail Cap(c_a), veh/h	675	0	552	367	0	667	562	0	731	444	0	828
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	21.5	24.9	0.0	21.4	21.2	0.0	16.2	20.7	0.0	14.9
Incr Delay (d2), s/veh	1.0	0.0	1.4	0.6	0.0	1.0	2.8	0.0	1.5	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	2.7	0.7	0.0	3.0	4.6	0.0	4.1	0.8	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	22.9	25.5	0.0	22.4	24.0	0.0	17.7	21.2	0.0	15.6
LnGrp LOS	C	A	C	C	A	C	C	A	B	C	A	B
Approach Vol, veh/h		350			224			546			244	
Approach Delay, s/veh		22.6			23.0			20.8			16.8	
Approach LOS		C			C			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		40.0		50.0		40.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		41.0		31.0		41.0		31.0				
Max Q Clear Time (g_c+I1), s		22.7		11.2		15.5		8.7				
Green Ext Time (p_c), s		2.7		1.2		1.4		2.2				
Intersection Summary												
HCM 6th Ctrl Delay				20.9								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2024 Future Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	32	447	232	10
Future Vol, veh/h	1	3	32	447	232	10
Conflicting Peds, #/hr	9	0	23	0	0	23
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	84	84	92	92
Heavy Vehicles, %	0	0	3	3	1	1
Mvmt Flow	2	5	38	532	252	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	898	281	286	0	-	0
Stage 1	281	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.227	-	-	-
Pot Cap-1 Maneuver	312	763	1270	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	289	746	1242	-	-	-
Mov Cap-2 Maneuver	289	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	530	-	-	-	-	-


Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1242	-	535	-	-
HCM Lane V/C Ratio	0.031	-	0.012	-	-
HCM Control Delay (s)	8	-	11.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

HCM 6th Signalized Intersection Summary




3: Pierce St & W Brown St/E Brown St

2024 Future Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	18	308	27	22	152	33	35	45	45	41	30	10
Future Volume (veh/h)	18	308	27	22	152	33	35	45	45	41	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1969	1969	1969	2000	2000	2000	1875	1875	1875
Adj Flow Rate, veh/h	21	367	32	29	203	44	49	62	62	45	33	11
Peak Hour Factor	0.84	0.84	0.84	0.75	0.75	0.75	0.72	0.72	0.72	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	0	8	8	8
Cap, veh/h	67	786	66	112	750	154	129	152	124	201	131	37
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	37	1463	124	117	1395	287	299	638	523	561	552	157
Grp Volume(v), veh/h	420	0	0	276	0	0	173	0	0	89	0	0
Grp Sat Flow(s),veh/h/ln	1623	0	0	1798	0	0	1460	0	0	1270	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.6	0.0	0.0	6.2	0.0	0.0	7.8	0.0	0.0	4.1	0.0	0.0
Prop In Lane	0.05		0.08	0.11		0.16	0.28		0.36	0.51		0.12
Lane Grp Cap(c), veh/h	920	0	0	1016	0	0	405	0	0	369	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.27	0.00	0.00	0.43	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	920	0	0	1016	0	0	405	0	0	369	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	10.0	0.0	0.0	26.1	0.0	0.0	24.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.7	0.0	0.0	3.3	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	2.6	0.0	0.0	3.1	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	0.0	10.7	0.0	0.0	29.4	0.0	0.0	26.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		420			276			173			89	
Approach Delay, s/veh		13.1			10.7			29.4			26.3	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		28.0		52.0		28.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		43.0		19.0		43.0		19.0				
Max Q Clear Time (g_c+I1), s		14.6		9.8		8.2		6.1				
Green Ext Time (p_c), s		3.0		0.6		2.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				16.6								
HCM 6th LOS				B								

HCM 6th TWSC
4: Daines St & RH Driveway

2024 Future Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	42	0	0	0
Future Vol, veh/h	0	4	42	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	46	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	46	0	-	0	50	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1562	-	-	-	959	1023
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	1019	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1562	-	-	-	959	1023
Mov Cap-2 Maneuver	-	-	-	-	959	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	1019	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1562	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th TWSC
5: Site Driveway & E Brown St

2024 Future Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	316	5	7	403	1	3
Future Vol, veh/h	316	5	7	403	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	343	5	8	438	1	3
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	348	0	800	174
Stage 1	-	-	-	-	346	-
Stage 2	-	-	-	-	454	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1209	-	338	840
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1209	-	335	840
Mov Cap-2 Maneuver	-	-	-	-	335	-
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	633	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		10.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	610	-	-	1209	-	
HCM Lane V/C Ratio	0.007	-	-	0.006	-	
HCM Control Delay (s)	10.9	-	-	8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	122	129	97	170	186	176	89	134
Average Queue (ft)	64	64	27	71	97	77	28	59
95th Queue (ft)	109	114	69	131	168	144	66	115
Link Distance (ft)	124	124		228	169	169		392
Upstream Blk Time (%)	0	0		0	1	1		
Queuing Penalty (veh)	1	1		0	2	1		
Storage Bay Dist (ft)			90				150	
Storage Blk Time (%)			0	5				0
Queuing Penalty (veh)			0	2				0

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	22	35	95	58
Average Queue (ft)	3	7	8	4
95th Queue (ft)	16	29	47	26
Link Distance (ft)	72	373	373	169
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	223	145	130	118
Average Queue (ft)	99	59	56	42
95th Queue (ft)	177	119	113	88
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Daines St & RH Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Site Driveway & E Brown St

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	34	30
Average Queue (ft)	2	4
95th Queue (ft)	16	20
Link Distance (ft)	124	145
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary




















Zone wide Queuing Penalty: 6

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St






2024 Future Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	314	183	25	192	42	129	265	43	61	219	60
Future Volume (veh/h)	68	314	183	25	192	42	129	265	43	61	219	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.99		0.97	0.99		0.96	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1969	1969	1969	1984	1984	1984	2048	2048	2048	1938	1938	1938
Adj Flow Rate, veh/h	81	374	218	27	211	46	145	298	48	72	258	71
Peak Hour Factor	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	161	702	415	271	609	133	389	597	96	342	598	164
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	288	1806	1067	825	1567	342	1087	1452	234	1012	1454	400
Grp Volume(v), veh/h	355	0	318	27	0	257	145	0	346	72	0	329
Grp Sat Flow(s),veh/h/ln	1605	0	1556	825	0	1909	1087	0	1686	1012	0	1854
Q Serve(g_s), s	8.0	0.0	14.1	2.3	0.0	8.6	9.9	0.0	13.7	5.1	0.0	11.4
Cycle Q Clear(g_c), s	16.6	0.0	14.1	16.5	0.0	8.6	21.4	0.0	13.7	18.8	0.0	11.4
Prop In Lane	0.23		0.69	1.00		0.18	1.00		0.14	1.00		0.22
Lane Grp Cap(c), veh/h	673	0	605	271	0	742	389	0	693	342	0	762
V/C Ratio(X)	0.53	0.00	0.53	0.10	0.00	0.35	0.37	0.00	0.50	0.21	0.00	0.43
Avail Cap(c_a), veh/h	673	0	605	271	0	742	389	0	693	342	0	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	21.1	27.4	0.0	19.4	26.6	0.0	19.6	26.6	0.0	19.0
Incr Delay (d2), s/veh	2.9	0.0	3.2	0.7	0.0	1.3	2.7	0.0	2.6	1.4	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	5.6	0.5	0.0	4.0	2.8	0.0	5.7	1.4	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	0.0	24.4	28.2	0.0	20.7	29.3	0.0	22.2	28.0	0.0	20.8
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		673			284			491			401	
Approach Delay, s/veh		24.5			21.4			24.3			22.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.0		44.0		46.0		44.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		37.0		35.0		37.0		35.0				
Max Q Clear Time (g_c+I1), s		23.4		18.5		20.8		18.6				
Green Ext Time (p_c), s		2.4		1.6		2.2		4.3				
Intersection Summary												
HCM 6th Ctrl Delay				23.4								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2024 Future Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	17	40	433	394	29
Future Vol, veh/h	7	17	40	433	394	29
Conflicting Peds, #/hr	10	0	21	0	0	21
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	91	91	85	85
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	9	23	44	476	464	34

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1076	502	519	0	-	0
Stage 1	502	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	245	573	1047	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	225	562	1026	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	556	-	-	-	-	-

















Approach	EB	NB	SB
HCM Control Delay, s	15	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1026	-	391	-	-
HCM Lane V/C Ratio	0.043	-	0.082	-	-
HCM Control Delay (s)	8.7	-	15	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

HCM 6th Signalized Intersection Summary




3: Pierce St & W Brown St/E Brown St

2024 Future Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	328	33	26	297	57	32	61	48	41	68	43
Future Volume (veh/h)	28	328	33	26	297	57	32	61	48	41	68	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	0.98		0.97	0.98		0.95
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	1953	1953	1953	2000	2000	2000
Adj Flow Rate, veh/h	34	400	40	30	345	66	46	87	69	49	82	52
Peak Hour Factor	0.82	0.82	0.82	0.86	0.86	0.86	0.70	0.70	0.70	0.83	0.83	0.83
Percent Heavy Veh, %	1	1	1	0	0	0	3	3	3	0	0	0
Cap, veh/h	82	751	72	83	821	151	108	175	118	124	186	101
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	62	1397	134	66	1528	281	221	736	496	283	784	423
Grp Volume(v), veh/h	474	0	0	441	0	0	202	0	0	183	0	0
Grp Sat Flow(s),veh/h/ln	1594	0	0	1875	0	0	1453	0	0	1490	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.8	0.0	0.0	10.9	0.0	0.0	9.2	0.0	0.0	7.8	0.0	0.0
Prop In Lane	0.07		0.08	0.07		0.15	0.23		0.34	0.27		0.28
Lane Grp Cap(c), veh/h	905	0	0	1056	0	0	400	0	0	411	0	0
V/C Ratio(X)	0.52	0.00	0.00	0.42	0.00	0.00	0.50	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	905	0	0	1056	0	0	400	0	0	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	0.0	11.1	0.0	0.0	26.7	0.0	0.0	26.3	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.0	1.2	0.0	0.0	4.5	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	0.0	4.7	0.0	0.0	3.8	0.0	0.0	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	0.0	0.0	12.3	0.0	0.0	31.2	0.0	0.0	29.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		474			441			202			183	
Approach Delay, s/veh		14.2			12.3			31.2			29.7	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		28.0		52.0		28.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		43.0		19.0		43.0		19.0				
Max Q Clear Time (g_c+I1), s		16.8		11.2		12.9		9.8				
Green Ext Time (p_c), s		3.5		0.7		3.3		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

HCM 6th TWSC
4: Daines St & RH Driveway

2024 Future Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	62	7	0	4
Future Vol, veh/h	0	24	62	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	67	8	0	4
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	75	0	-	0	97	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1524	-	-	-	902	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1524	-	-	-	902	991
Mov Cap-2 Maneuver	-	-	-	-	902	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	997	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.6		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1524	-	-	-	991	
HCM Lane V/C Ratio	-	-	-	-	0.004	
HCM Control Delay (s)	0	-	-	-	8.6	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
5: Site Driveway & E Brown St

2024 Future Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	554	4	4	377	5	11
Future Vol, veh/h	554	4	4	377	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	602	4	4	410	5	12
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	606	0	1022	303
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	970	-	246	694
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	663	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	970	-	245	694
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	660	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		13.5	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	441	-	-	970	-	
HCM Lane V/C Ratio	0.039	-	-	0.004	-	
HCM Control Delay (s)	13.5	-	-	8.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	174	188	124	226	172	182	161	244
Average Queue (ft)	107	109	26	108	77	112	42	111
95th Queue (ft)	167	179	78	195	139	187	107	198
Link Distance (ft)	127	127		228	168	168		392
Upstream Blk Time (%)	5	6		1	1	2		
Queuing Penalty (veh)	13	17		0	2	6		
Storage Bay Dist (ft)			90				150	
Storage Blk Time (%)			0	13				3
Queuing Penalty (veh)			0	3				2

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	40	48	153	91
Average Queue (ft)	16	16	17	9
95th Queue (ft)	41	43	84	50
Link Distance (ft)	66	373	373	168
Upstream Blk Time (%)	0			0
Queuing Penalty (veh)	0			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	312	245	186	157
Average Queue (ft)	121	122	68	61
95th Queue (ft)	236	221	135	121
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Daines St & RH Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	119
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Site Driveway & E Brown St

Movement	EB	EB	WB	NB
Directions Served	T	TR	LT	LR
Maximum Queue (ft)	33	38	56	34
Average Queue (ft)	2	3	3	13
95th Queue (ft)	19	20	24	37
Link Distance (ft)	114	114	127	133
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary




















Zone wide Queuing Penalty: 44

HCM 6th Signalized Intersection Summary

1: S Old Woodward Ave & E Brown St






2024 Future Conditions

Sat Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	196	136	29	106	85	119	292	60	81	201	88
Future Volume (veh/h)	60	196	136	29	106	85	119	292	60	81	201	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.90	0.97		0.92	0.99		0.91	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	2000	2000	2000	2048	2048	2048	1984	1984	1984
Adj Flow Rate, veh/h	73	239	166	34	125	100	140	344	71	85	212	93
Peak Hour Factor	0.82	0.82	0.82	0.85	0.85	0.85	0.85	0.85	0.85	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	0	0	0	2	2	2	1	1	1
Cap, veh/h	186	586	411	336	374	299	393	579	120	304	460	202
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	356	1551	1087	965	989	791	1108	1372	283	978	1090	478
Grp Volume(v), veh/h	253	0	225	34	0	225	140	0	415	85	0	305
Grp Sat Flow(s),veh/h/ln	1521	0	1472	965	0	1780	1108	0	1656	978	0	1568
Q Serve(g_s), s	4.7	0.0	10.1	2.4	0.0	8.1	9.3	0.0	17.4	6.6	0.0	12.6
Cycle Q Clear(g_c), s	12.8	0.0	10.1	12.5	0.0	8.1	21.9	0.0	17.4	24.0	0.0	12.6
Prop In Lane	0.29		0.74	1.00		0.44	1.00		0.17	1.00		0.30
Lane Grp Cap(c), veh/h	626	0	556	336	0	672	393	0	699	304	0	662
V/C Ratio(X)	0.40	0.00	0.40	0.10	0.00	0.33	0.36	0.00	0.59	0.28	0.00	0.46
Avail Cap(c_a), veh/h	626	0	556	336	0	672	393	0	699	304	0	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	20.6	25.2	0.0	19.9	26.5	0.0	20.0	29.3	0.0	18.6
Incr Delay (d2), s/veh	1.9	0.0	2.2	0.6	0.0	1.3	2.5	0.0	3.7	2.3	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	3.8	0.6	0.0	3.6	2.7	0.0	7.2	1.7	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	22.7	25.8	0.0	21.3	29.0	0.0	23.7	31.6	0.0	20.9
LnGrp LOS	C	A	C	C	A	C	C	A	C	C	A	C
Approach Vol, veh/h		478			259			555			390	
Approach Delay, s/veh		22.9			21.9			25.1			23.3	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		43.0		47.0		43.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		38.0		34.0		38.0		34.0				
Max Q Clear Time (g_c+I1), s		23.9		14.5		26.0		14.8				
Green Ext Time (p_c), s		2.9		1.5		1.9		3.2				
Intersection Summary												
HCM 6th Ctrl Delay				23.5								
HCM 6th LOS				C								

HCM 6th TWSC
2: S Old Woodward Ave & Daines St

2024 Future Conditions
Sat Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	20	470	324	33
Future Vol, veh/h	5	10	20	470	324	33
Conflicting Peds, #/hr	0	0	68	0	0	68
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	88	88	95	95
Heavy Vehicles, %	8	8	1	1	1	1
Mvmt Flow	8	17	23	534	341	35

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1007	427	444	0	-	0
Stage 1	427	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.11	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.209	-	-	-
Pot Cap-1 Maneuver	260	615	1121	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	575	1048	-	-	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	512	-	-	-	-	-

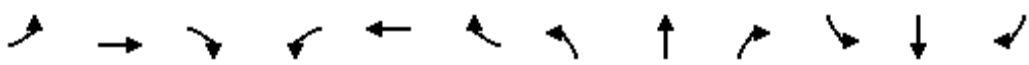
Approach	EB	NB	SB
HCM Control Delay, s	15.3	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1048	-	376	-	-
HCM Lane V/C Ratio	0.022	-	0.066	-	-
HCM Control Delay (s)	8.5	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

HCM 6th Signalized Intersection Summary




3: Pierce St & W Brown St/E Brown St

2024 Future Conditions
Sat Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	36	272	25	17	183	100	14	53	46	74	46	24
Future Volume (veh/h)	36	272	25	17	183	100	14	53	46	74	46	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.95	0.97		0.95
Parking Bus, Adj	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2000	2000	2000	1984	1984	1984	2000	2000	2000	2000	2000	2000
Adj Flow Rate, veh/h	42	320	29	20	218	119	16	62	53	83	52	27
Peak Hour Factor	0.85	0.85	0.85	0.84	0.84	0.84	0.86	0.86	0.86	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	0	0	0
Cap, veh/h	103	698	60	71	601	312	73	212	160	231	134	59
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	104	1363	118	45	1173	609	87	809	609	620	512	226
Grp Volume(v), veh/h	391	0	0	357	0	0	131	0	0	162	0	0
Grp Sat Flow(s),veh/h/ln	1584	0	0	1827	0	0	1505	0	0	1359	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	11.9	0.0	0.0	9.2	0.0	0.0	5.5	0.0	0.0	6.9	0.0	0.0
Prop In Lane	0.11		0.07	0.06		0.33	0.12		0.40	0.51		0.17
Lane Grp Cap(c), veh/h	862	0	0	984	0	0	446	0	0	425	0	0
V/C Ratio(X)	0.45	0.00	0.00	0.36	0.00	0.00	0.29	0.00	0.00	0.38	0.00	0.00
Avail Cap(c_a), veh/h	862	0	0	984	0	0	446	0	0	425	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	11.8	0.0	0.0	23.8	0.0	0.0	24.2	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	1.0	0.0	0.0	1.7	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.0	3.9	0.0	0.0	2.2	0.0	0.0	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	0.0	0.0	12.8	0.0	0.0	25.4	0.0	0.0	26.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		391			357			131			162	
Approach Delay, s/veh		14.1			12.8			25.4			26.8	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0		30.0				
Change Period (Y+Rc), s		9.0		9.0		9.0		9.0				
Max Green Setting (Gmax), s		41.0		21.0		41.0		21.0				
Max Q Clear Time (g_c+I1), s		13.9		7.5		11.2		8.9				
Green Ext Time (p_c), s		2.8		0.5		2.6		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				17.1								
HCM 6th LOS				B								

HCM 6th TWSC
4: Daines St & RH Driveway

2024 Future Conditions
Sat Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	47	6	0	9
Future Vol, veh/h	0	15	47	6	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	51	7	0	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	58	0	-	0	71	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1546	-	-	-	933	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1546	-	-	-	933	1012
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.6		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1546	-	-	-	1012	
HCM Lane V/C Ratio	-	-	-	-	0.01	
HCM Control Delay (s)	0	-	-	-	8.6	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	387	3	5	308	2	5
Future Vol, veh/h	387	3	5	308	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	421	3	5	335	2	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	424	0	768	212
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	345	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1133	-	354	794
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1133	-	352	794
Mov Cap-2 Maneuver	-	-	-	-	352	-
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	712	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1133	-
HCM Lane V/C Ratio	0.013	-	-	0.005	-
HCM Control Delay (s)	11.2	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection: 1: S Old Woodward Ave & E Brown St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	153	163	87	158	144	181	164	205
Average Queue (ft)	75	78	20	74	68	131	52	106
95th Queue (ft)	130	141	56	137	127	196	110	184
Link Distance (ft)	125	125		228	167	167		392
Upstream Blk Time (%)	1	2			1	4		
Queuing Penalty (veh)	2	3			2	9		
Storage Bay Dist (ft)			90				150	
Storage Blk Time (%)				6				3
Queuing Penalty (veh)				2				2

Intersection: 2: S Old Woodward Ave & Daines St

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	60	38	168	12
Average Queue (ft)	13	6	20	0
95th Queue (ft)	39	26	97	6
Link Distance (ft)	61	374	374	167
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Pierce St & W Brown St/E Brown St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	270	198	118	141
Average Queue (ft)	111	82	47	60
95th Queue (ft)	205	154	92	120
Link Distance (ft)	576	288	326	384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Daines St & RH Driveway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	112
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Site Driveway & E Brown St

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	6	23	35
Average Queue (ft)	0	2	6
95th Queue (ft)	4	16	26
Link Distance (ft)	117	125	144
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 20

CRASH ANALYSIS

Crash Data October 1, 2016 - October 1, 2021

ID #	Date	Crash Type	Road Conditions	Light	Injury	Alcohol/ Drugs	Ped/ Bike	Cause
2016271482	11/12/2016	Rear End	Dry	Daylight	O	No	No	Failed to stop for slowing traffic.
2016288156	11/28/2016	Angle	Dry	Dark Lighted	O	No	No	Attempted to turn right from the left lane.
2017283147	1/26/2017	Rear End	Dry	Dark Lighted	O	No	No	Failed to stop for stopped traffic.
2017315020	3/6/2017	Rear End	Wet	Daylight	O	No	No	Failed to stop for stopped traffic.
2017317122	3/9/2017	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to turn right and struck parked vehicle.
2017319587	3/12/2017	Angle	Dry	Daylight	O	No	No	Attempted a U-turn.
20173842	3/26/2017	Backing	Wet	Daylight	O	No	No	Attempted to exit a parking space without assured clear distance.
20177238	3/31/2017	Head On Left Turn	Wet	Daylight	O	No	No	Attempted to turn left without assured clear distance.
201760484	6/4/2017	Sideswipe Same Direction	Dry	Dark Lighted	O	No	No	Attempted to park and struck a vehicle stopped in the roadway.
201797273	7/20/2017	Single Motor Vehicle	Dry	Dark Lighted	C	No	Yes	Attempted to turn right without checking crosswalk.
2017104280	7/29/2017	Rear End	Dry	Dark Lighted	O	No	No	Failed to stop for stopped traffic.
2017115932	8/13/2017	Other	Dry	Daylight	C	No	Yes	Attempted to turn left without checking crosswalk.
2017135913	9/7/2017	Other	Dry	Daylight	O	No	No	Bus struck a parked vehicle.
2017138297	9/10/2017	Angle	Dry	Daylight	B	No	No	Disregarded the red light.
2017185857	10/28/2017	Angle	Wet	Dark Lighted	C	Yes	No	Attempted to drive north in the southbound parking spaces.
2017222479	11/29/2017	Head On	Dry	Dark Lighted	B	No	No	Attempted to go straight in the left turn lane.
2017230957	12/7/2017	Sideswipe Same Direction	Snow	Daylight	O	No	No	Attempted to turn right from the left lane.
2017233278	12/8/2017	Rear End	Dry	Daylight	O	No	No	Failed to stop for stopped traffic.
201816087	1/6/2018	Angle	Dry	Daylight	C	No	No	Attempted a U-turn.
201827429	1/18/2018	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to turn left without assured clear distance.
201830758	1/21/2018	Angle	Wet	Daylight	O	No	No	Attempted to turn left without assured clear distance.
201837157	1/27/2018	Other	Dry	Dark Lighted	O	No	No	Disregarded the red light.
201864050	2/28/2018	Other	Dry	Daylight	O	No	No	Parked vehicle was struck by unknown vehicle.
201873792	3/12/2018	Angle	Wet	Daylight	O	No	No	Bus attempted to turn right from the left lane.
2018205687	8/29/2018	Head On Left Turn	Dry	Daylight	O	No	No	Attempted to turn left without assured clear distance.
2018213565	8/29/2018	Rear End	Dry	Daylight	O	No	No	Failed to stop for slowing traffic.
2018262184	10/26/2018	Other	Dry	Daylight	O	No	No	Attempted a U-turn and stuck vehicle exiting a parking space.
2018269506	11/1/2018	Rear End	Wet	Daylight	O	No	No	Failed to stop for stopped traffic.
2018297538	11/27/2018	Sideswipe Same Direction	Wet	Dark Lighted	O	No	No	Attempted to exit a parking space without assured clear distance.
2018310657	12/13/2018	Backing	Dry	Dark Lighted	O	No	No	Attempted to exit a parking space without assured clear distance.
201916836	1/10/2019	Backing	Dry	Dark Lighted	C	No	No	Attempted to exit a parking space without assured clear distance.
201944803	2/7/2019	Sideswipe Same Direction	Wet	Daylight	O	No	No	Struck a parked vehicle.
201966478	3/3/2019	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to change lanes without assured clear distance.
201982957	3/26/2019	Angle	Dry	Daylight	O	No	No	Attempted a U-turn.
201986836	3/30/2019	Angle	Snow	Dark Lighted	C	No	No	Attempted to turn left without assured clear distance.
2019103647	4/25/2019	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to pass a vehicle stopped in the roadway.
2019105534	4/26/2019	Angle	Dry	Daylight	O	No	No	Attempted to turn left without assured clear distance.
2019108721	4/29/2019	Sideswipe Same Direction	Wet	Daylight	O	No	No	Attempted to turn left from the right lane.

Crash Data October 1, 2016 - October 1, 2021

ID #	Date	Crash Type	Road Conditions	Light	Injury	Alcohol/ Drugs	Ped/ Bike	Cause
2019135370	5/8/2019	Other	Dry	Daylight	C	No	Yes	Attempted to turn right without checking crosswalk.
2019144861	6/14/2019	Rear End	Dry	Daylight	O	No	No	Failed to stop for stopped traffic.
2019165516	7/9/2019	Rear End	Dry	Daylight	O	No	No	Failed to stop for slowing traffic.
2019170665	7/16/2019	Rear End	Dry	Daylight	O	No	No	Failed to stop for stopped traffic.
2019185054	8/3/2019	Angle	Dry	Daylight	O	No	No	Disregarded the red light.
2019189588	8/6/2019	Angle	Dry	Daylight	O	No	No	Attempted to turn left without assured clear distance.
2019194143	8/14/2019	Rear End	Dry	Daylight	C	No	No	Failed to stop for stopped traffic.
2019197284	8/19/2019	Single Motor Vehicle	Dry	Daylight	O	No	No	Attempted to turn right and stuck fire hydrant.
2019204149	8/27/2019	Angle	Dry	Dark Lighted	O	No	No	Attempted to go straight without assured clear distance.
2019252009	10/17/2019	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to turn right from the left lane.
2019255896	10/22/2019	Sideswipe Opposite Direction	Dry	Daylight	O	No	No	Failed to stop for stopped traffic.
2019276070	11/6/2019	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to turn right without assured clear distance.
2019283996	11/14/2019	Head On Left Turn	Wet	Daylight	O	No	No	Attempted to turn left without assured clear distance.
2019297759	11/25/2019	Angle	Dry	Daylight	O	No	No	Attempted to turn left from the right lane.
2019304458	12/4/2019	Other	Wet	Dark Lighted	O	No	No	Attempted to pass stopped vehicle without assured clear distance.
2019308210	12/7/2019	Backing	Dry	Dark Lighted	O	No	No	Parked vehicle was struck by unknown vehicle.
202022510	1/19/2020	Angle	Snow	Dark Lighted	O	No	No	Attempted a U-turn.
202040251	2/8/2020	Rear End	Snow	Daylight	O	No	No	Failed to stop for stopped traffic.
202042192	2/10/2020	Backing	Dry	Daylight	O	No	No	Attempted to park without assured clear distance.
202059924	3/6/2020	Backing	Dry	Daylight	O	No	No	Attempted to exit a parking space without assured clear distance.
2020134944	7/26/2020	Angle	Dry	Daylight	O	No	No	Attempted a U-turn.
2020147543	8/16/2020	Angle	Dry	Daylight	O	No	No	Disregarded the red light.
2020148396	8/17/2020	Single Motor Vehicle	Dry	Daylight	O	No	Yes	Attempted to park without assured clear distance.
2020183006	9/16/2020	Sideswipe Same Direction	Dry	Daylight	O	No	No	Attempted to exit a parking space and struck a parked vehicle.
2020189632	10/7/2020	Single Motor Vehicle	Dry	Dark Lighted	O	Yes	No	Attempted to turn left and lost control of vehicle.
210003753	3/14/2021	Head On	Dry	Daylight	C	No	No	Driver had a medical emergency.
210005145	4/7/2021	Head On Left Turn	Dry	Daylight	O	No	No	Attempted to turn left without assured clear distance.
210005733	4/18/2021	Rear End	Dry	Dark Lighted	O	Yes	No	Struck a parked vehicle.
210008590	6/10/2021	Head On Left Turn	Dry	Daylight	C	No	No	Attempted to turn left without assured clear distance.
210010942	7/16/2021	Rear End	Wet	Dark Lighted	O	No	No	Failed to stop for stopped traffic.
210013012	8/23/2021	Rear End	Dry	Daylight	O	No	No	Failed to stop for slowing traffic.
210013256	8/27/2021	Single Motor Vehicle	Dry	Dark Lighted	O	Yes	No	Struck a handicap sign while attempting to park.

TRANSIT SCHEDULES



450/460 WOODWARD LOCAL Northbound for Weekday

ROUTE	WOODWARD & STATE FAIRGROUND DS	WOODWARD & 9 MILE RD.	ROYAL OAK TRANSIT CENTER	WOODWARD & 11 MILE RD.	WOODWARD & 13 MILE RD.	WOODWARD & DAINES	SOMERSET COLLECTION	WOODWARD & CHARLES LANE	PHOENIX CENTER
460	4:50AM	4:55AM	5:01AM	5:03AM	5:08AM	5:14AM	5:24AM	-	-
450	5:20AM	5:24AM	-	5:29AM	5:34AM	5:40AM	-	5:51AM	6:00AM
460	5:50AM	5:55AM	6:01AM	6:03AM	6:08AM	6:14AM	6:24AM	-	-
450	6:20AM	6:24AM	-	6:29AM	6:34AM	6:40AM	-	6:51AM	7:00AM
460	6:50AM	6:55AM	7:01AM	7:03AM	7:08AM	7:14AM	7:24AM	-	-
450	7:20AM	7:25AM	-	7:30AM	7:35AM	7:41AM	-	7:53AM	8:02AM
460	7:50AM	7:56AM	8:03AM	8:06AM	8:11AM	8:17AM	8:27AM	-	-
450	8:20AM	8:26AM	-	8:32AM	8:38AM	8:44AM	-	8:56AM	9:05AM
460	8:50AM	8:56AM	9:03AM	9:06AM	9:12AM	9:18AM	9:28AM	-	-
450	9:20AM	9:26AM	-	9:32AM	9:38AM	9:45AM	-	9:58AM	10:07AM
460	9:50AM	9:56AM	10:03AM	10:06AM	10:12AM	10:19AM	10:29AM	-	-
450	10:20AM	10:26AM	-	10:32AM	10:38AM	10:45AM	-	10:58AM	11:07AM
460	10:50AM	10:56AM	11:03AM	11:06AM	11:12AM	11:19AM	11:29AM	-	-
450	11:20AM	11:26AM	-	11:32AM	11:39AM	11:46AM	-	11:59AM	12:10PM
460	11:50AM	11:56AM	12:03PM	12:06PM	12:13PM	12:20PM	12:32PM	-	-
450	12:20PM	12:26PM	-	12:33PM	12:40PM	12:47PM	-	1:00PM	1:11PM
460	12:50PM	12:56PM	1:03PM	1:06PM	1:13PM	1:20PM	1:32PM	-	-
450	1:20PM	1:26PM	-	1:33PM	1:40PM	1:47PM	-	2:00PM	2:11PM
460	1:50PM	1:56PM	2:03PM	2:06PM	2:13PM	2:20PM	2:32PM	-	-
450	2:20PM	2:26PM	-	2:33PM	2:40PM	2:47PM	-	3:00PM	3:11PM
460	2:50PM	2:56PM	3:03PM	3:06PM	3:13PM	3:20PM	3:32PM	-	-
450	3:20PM	3:26PM	-	3:33PM	3:39PM	3:46PM	-	3:59PM	4:09PM
460	3:50PM	3:56PM	4:03PM	4:06PM	4:12PM	4:19PM	4:30PM	-	-
450	4:20PM	4:26PM	-	4:32PM	4:38PM	4:45PM	-	4:58PM	5:08PM
460	4:50PM	4:56PM	5:03PM	5:06PM	5:12PM	5:19PM	5:30PM	-	-
450	5:20PM	5:26PM	-	5:32PM	5:38PM	5:45PM	-	5:58PM	6:08PM
460	5:50PM	5:56PM	6:03PM	6:06PM	6:12PM	6:19PM	6:30PM	-	-
450	6:20PM	6:26PM	-	6:32PM	6:38PM	6:45PM	-	6:58PM	7:08PM
460	6:50PM	6:56PM	7:03PM	7:06PM	7:12PM	7:19PM	7:30PM	-	-
450	7:20PM	7:25PM	-	7:31PM	7:37PM	7:44PM	-	7:56PM	8:06PM
460	7:50PM	7:55PM	8:02PM	8:05PM	8:10PM	8:17PM	8:27PM	-	-
450	8:20PM	8:25PM	-	8:31PM	8:37PM	8:44PM	-	8:56PM	9:06PM
460	8:50PM	8:55PM	9:02PM	9:05PM	9:10PM	9:17PM	9:27PM	-	-
450	9:20PM	9:25PM	-	9:31PM	9:37PM	9:44PM	-	9:56PM	10:06PM
460	9:50PM	9:55PM	10:02PM	10:05PM	10:10PM	10:17PM	10:27PM	-	-
450	10:20PM	10:25PM	-	10:31PM	10:37PM	10:44PM	-	10:56PM	11:06PM
460	10:50PM	10:55PM	11:02PM	11:04PM	11:09PM	11:14PM	11:23PM	-	-
450	11:20PM	11:25PM	-	11:31PM	11:37PM	11:44PM	-	11:56PM	12:06AM



450/460 WOODWARD LOCAL Southbound for Weekday

ROUTE	PHOENIX CENTER	WOODWARD & CHARLES LANE	SOMERSET COLLECTION	WOODWARD & DAINES	WOODWARD & 13 MILE RD.	WOODWARD & 11 MILE RD.	ROYAL OAK TRANSIT CENTER	WOODWARD & 9 MILE RD.	WOODWARD & STATE FAIRGROUND DS
450	4:31AM	4:39AM	-	4:50AM	4:55AM	5:00AM	-	5:05AM	5:10AM
460	-	-	5:10AM	5:17AM	5:22AM	5:27AM	5:29AM	5:35AM	5:40AM
450	5:31AM	5:39AM	-	5:50AM	5:55AM	6:00AM	-	6:05AM	6:10AM
460	-	-	6:05AM	6:15AM	6:20AM	6:25AM	6:28AM	6:35AM	6:40AM
450	6:30AM	6:39AM	-	6:50AM	6:55AM	7:00AM	-	7:05AM	7:10AM
460	-	-	7:05AM	7:15AM	7:20AM	7:25AM	7:28AM	7:35AM	7:40AM
450	7:28AM	7:37AM	-	7:48AM	7:53AM	8:00AM	-	8:05AM	8:10AM
460	-	-	8:00AM	8:12AM	8:18AM	8:25AM	8:28AM	8:35AM	8:40AM
450	8:26AM	8:36AM	-	8:47AM	8:53AM	9:00AM	-	9:05AM	9:10AM
460	-	-	9:00AM	9:12AM	9:18AM	9:25AM	9:28AM	9:35AM	9:40AM
450	9:26AM	9:36AM	-	9:47AM	9:53AM	10:00AM	-	10:05AM	10:10AM
460	-	-	10:00AM	10:12AM	10:18AM	10:25AM	10:28AM	10:35AM	10:40AM
450	10:26AM	10:36AM	-	10:47AM	10:53AM	11:00AM	-	11:05AM	11:10AM
460	-	-	11:00AM	11:12AM	11:18AM	11:25AM	11:28AM	11:35AM	11:40AM
450	11:25AM	11:35AM	-	11:46AM	11:52AM	11:59AM	-	12:05PM	12:10PM
460	-	-	11:57AM	12:11PM	12:17PM	12:24PM	12:27PM	12:35PM	12:40PM
450	12:21PM	12:33PM	-	12:46PM	12:52PM	12:59PM	-	1:05PM	1:10PM
460	-	-	12:58PM	1:11PM	1:17PM	1:24PM	1:27PM	1:35PM	1:40PM
450	1:21PM	1:33PM	-	1:46PM	1:52PM	1:59PM	-	2:05PM	2:10PM
460	-	-	1:58PM	2:11PM	2:17PM	2:24PM	2:27PM	2:35PM	2:40PM
450	2:21PM	2:33PM	-	2:46PM	2:52PM	2:59PM	-	3:05PM	3:10PM
460	-	-	2:58PM	3:11PM	3:17PM	3:24PM	3:27PM	3:35PM	3:40PM
450	3:21PM	3:33PM	-	3:46PM	3:52PM	3:59PM	-	4:05PM	4:10PM
460	-	-	3:58PM	4:11PM	4:17PM	4:24PM	4:27PM	4:35PM	4:40PM
450	4:21PM	4:33PM	-	4:46PM	4:52PM	4:59PM	-	5:05PM	5:10PM
460	-	-	4:58PM	5:11PM	5:17PM	5:24PM	5:27PM	5:35PM	5:40PM
450	5:21PM	5:33PM	-	5:46PM	5:52PM	5:59PM	-	6:05PM	6:10PM
460	-	-	5:58PM	6:11PM	6:17PM	6:24PM	6:27PM	6:35PM	6:40PM
450	6:21PM	6:33PM	-	6:46PM	6:52PM	6:59PM	-	7:05PM	7:10PM
460	-	-	6:58PM	7:11PM	7:17PM	7:24PM	7:27PM	7:35PM	7:40PM
450	7:24PM	7:35PM	-	7:48PM	7:54PM	8:00PM	-	8:05PM	8:10PM
460	-	-	8:00PM	8:12PM	8:18PM	8:24PM	8:27PM	8:35PM	8:40PM
450	8:26PM	8:37PM	-	8:50PM	8:56PM	9:02PM	-	9:07PM	9:12PM
460	-	-	9:01PM	9:13PM	9:19PM	9:25PM	9:28PM	9:35PM	9:40PM
450	9:26PM	9:37PM	-	9:50PM	9:56PM	10:02PM	-	10:07PM	10:12PM
460	-	-	10:03PM	10:13PM	10:19PM	10:25PM	10:28PM	10:35PM	10:40PM
450	10:24PM	10:35PM	-	10:48PM	10:54PM	11:00PM	-	11:05PM	11:10PM
460	-	-	11:05PM	11:15PM	11:20PM	11:26PM	11:28PM	11:35PM	11:40PM



450/460 WOODWARD LOCAL Northbound for Saturday

ROUTE	WOODWARD & STATE FAIRGROUN DS	WOODWARD & 9 MILE RD.	ROYAL OAK TRANSIT CENTER	WOODWARD & 11 MILE RD.	WOODWARD & 13 MILE RD.	WOODWARD & DAINES	SOMERSET COLLECTION	WOODWARD & CHARLES LANE	PHOENIX CENTER
460	4:50AM	4:55AM	5:01AM	5:03AM	5:08AM	5:14AM	5:24AM	-	-
450	5:20AM	5:24AM	-	5:29AM	5:34AM	5:40AM	-	5:51AM	6:00AM
460	5:50AM	5:55AM	6:01AM	6:03AM	6:08AM	6:14AM	6:24AM	-	-
450	6:20AM	6:24AM	-	6:29AM	6:34AM	6:40AM	-	6:51AM	7:00AM
460	6:50AM	6:55AM	7:01AM	7:03AM	7:08AM	7:14AM	7:24AM	-	-
450	7:20AM	7:25AM	-	7:30AM	7:35AM	7:41AM	-	7:53AM	8:02AM
460	7:50AM	7:56AM	8:03AM	8:06AM	8:11AM	8:17AM	8:27AM	-	-
450	8:20AM	8:26AM	-	8:32AM	8:38AM	8:44AM	-	8:56AM	9:05AM
460	8:50AM	8:56AM	9:03AM	9:06AM	9:12AM	9:18AM	9:28AM	-	-
450	9:20AM	9:26AM	-	9:32AM	9:38AM	9:45AM	-	9:58AM	10:07AM
460	9:50AM	9:56AM	10:03AM	10:06AM	10:12AM	10:19AM	10:29AM	-	-
450	10:20AM	10:26AM	-	10:32AM	10:38AM	10:45AM	-	10:58AM	11:07AM
460	10:50AM	10:56AM	11:03AM	11:06AM	11:12AM	11:19AM	11:29AM	-	-
450	11:20AM	11:26AM	-	11:32AM	11:39AM	11:46AM	-	11:59AM	12:10PM
460	11:50AM	11:56AM	12:03PM	12:06PM	12:13PM	12:20PM	12:32PM	-	-
450	12:20PM	12:26PM	-	12:33PM	12:40PM	12:47PM	-	1:00PM	1:11PM
460	12:50PM	12:56PM	1:03PM	1:06PM	1:13PM	1:20PM	1:32PM	-	-
450	1:20PM	1:26PM	-	1:33PM	1:40PM	1:47PM	-	2:00PM	2:11PM
460	1:50PM	1:56PM	2:03PM	2:06PM	2:13PM	2:20PM	2:32PM	-	-
450	2:20PM	2:26PM	-	2:33PM	2:40PM	2:47PM	-	3:00PM	3:11PM
460	2:50PM	2:56PM	3:03PM	3:06PM	3:13PM	3:20PM	3:32PM	-	-
450	3:20PM	3:26PM	-	3:33PM	3:39PM	3:46PM	-	3:59PM	4:09PM
460	3:50PM	3:56PM	4:03PM	4:06PM	4:12PM	4:19PM	4:30PM	-	-
450	4:20PM	4:26PM	-	4:32PM	4:38PM	4:45PM	-	4:58PM	5:08PM
460	4:50PM	4:56PM	5:03PM	5:06PM	5:12PM	5:19PM	5:30PM	-	-
450	5:20PM	5:26PM	-	5:32PM	5:38PM	5:45PM	-	5:58PM	6:08PM
460	5:50PM	5:56PM	6:03PM	6:06PM	6:12PM	6:19PM	6:30PM	-	-
450	6:20PM	6:26PM	-	6:32PM	6:38PM	6:45PM	-	6:58PM	7:08PM
460	6:50PM	6:56PM	7:03PM	7:06PM	7:12PM	7:19PM	7:30PM	-	-
450	7:20PM	7:25PM	-	7:31PM	7:37PM	7:44PM	-	7:56PM	8:06PM
460	7:50PM	7:55PM	8:02PM	8:05PM	8:10PM	8:17PM	8:27PM	-	-
450	8:20PM	8:25PM	-	8:31PM	8:37PM	8:44PM	-	8:56PM	9:06PM
460	8:50PM	8:55PM	9:02PM	9:05PM	9:10PM	9:17PM	9:27PM	-	-
450	9:20PM	9:25PM	-	9:31PM	9:37PM	9:44PM	-	9:56PM	10:06PM
460	9:50PM	9:55PM	10:02PM	10:05PM	10:10PM	10:17PM	10:27PM	-	-
450	10:20PM	10:25PM	-	10:31PM	10:37PM	10:44PM	-	10:56PM	11:06PM
460	10:50PM	10:55PM	11:02PM	11:04PM	11:09PM	11:14PM	11:23PM	-	-
450	11:20PM	11:25PM	-	11:31PM	11:37PM	11:44PM	-	11:56PM	12:06AM



450/460 WOODWARD LOCAL Southbound for Saturday

ROUTE	PHOENIX CENTER	WOODWARD & CHARLES LANE	SOMERSET COLLECTION	WOODWARD & DAINES	WOODWARD & 13 MILE RD.	WOODWARD & 11 MILE RD.	ROYAL OAK TRANSIT CENTER	WOODWARD & 9 MILE RD.	WOODWARD & STATE FAIRGROUND DS
450	4:31AM	4:39AM	-	4:50AM	4:55AM	5:00AM	-	5:05AM	5:10AM
460	-	-	5:10AM	5:17AM	5:22AM	5:27AM	5:29AM	5:35AM	5:40AM
450	5:31AM	5:39AM	-	5:50AM	5:55AM	6:00AM	-	6:05AM	6:10AM
460	-	-	6:05AM	6:15AM	6:20AM	6:25AM	6:28AM	6:35AM	6:40AM
450	6:30AM	6:39AM	-	6:50AM	6:55AM	7:00AM	-	7:05AM	7:10AM
460	-	-	7:05AM	7:15AM	7:20AM	7:25AM	7:28AM	7:35AM	7:40AM
450	7:28AM	7:37AM	-	7:48AM	7:53AM	8:00AM	-	8:05AM	8:10AM
460	-	-	8:00AM	8:12AM	8:18AM	8:25AM	8:28AM	8:35AM	8:40AM
450	8:26AM	8:36AM	-	8:47AM	8:53AM	9:00AM	-	9:05AM	9:10AM
460	-	-	9:00AM	9:12AM	9:18AM	9:25AM	9:28AM	9:35AM	9:40AM
450	9:26AM	9:36AM	-	9:47AM	9:53AM	10:00AM	-	10:05AM	10:10AM
460	-	-	10:00AM	10:12AM	10:18AM	10:25AM	10:28AM	10:35AM	10:40AM
450	10:26AM	10:36AM	-	10:47AM	10:53AM	11:00AM	-	11:05AM	11:10AM
460	-	-	11:00AM	11:12AM	11:18AM	11:25AM	11:28AM	11:35AM	11:40AM
450	11:25AM	11:35AM	-	11:46AM	11:52AM	11:59AM	-	12:05PM	12:10PM
460	-	-	11:57AM	12:11PM	12:17PM	12:24PM	12:27PM	12:35PM	12:40PM
450	12:21PM	12:33PM	-	12:46PM	12:52PM	12:59PM	-	1:05PM	1:10PM
460	-	-	12:58PM	1:11PM	1:17PM	1:24PM	1:27PM	1:35PM	1:40PM
450	1:21PM	1:33PM	-	1:46PM	1:52PM	1:59PM	-	2:05PM	2:10PM
460	-	-	1:58PM	2:11PM	2:17PM	2:24PM	2:27PM	2:35PM	2:40PM
450	2:21PM	2:33PM	-	2:46PM	2:52PM	2:59PM	-	3:05PM	3:10PM
460	-	-	2:58PM	3:11PM	3:17PM	3:24PM	3:27PM	3:35PM	3:40PM
450	3:21PM	3:33PM	-	3:46PM	3:52PM	3:59PM	-	4:05PM	4:10PM
460	-	-	3:58PM	4:11PM	4:17PM	4:24PM	4:27PM	4:35PM	4:40PM
450	4:21PM	4:33PM	-	4:46PM	4:52PM	4:59PM	-	5:05PM	5:10PM
460	-	-	4:58PM	5:11PM	5:17PM	5:24PM	5:27PM	5:35PM	5:40PM
450	5:21PM	5:33PM	-	5:46PM	5:52PM	5:59PM	-	6:05PM	6:10PM
460	-	-	5:58PM	6:11PM	6:17PM	6:24PM	6:27PM	6:35PM	6:40PM
450	6:21PM	6:33PM	-	6:46PM	6:52PM	6:59PM	-	7:05PM	7:10PM
460	-	-	6:58PM	7:11PM	7:17PM	7:24PM	7:27PM	7:35PM	7:40PM
450	7:24PM	7:35PM	-	7:48PM	7:54PM	8:00PM	-	8:05PM	8:10PM
460	-	-	8:00PM	8:12PM	8:18PM	8:24PM	8:27PM	8:35PM	8:40PM
450	8:26PM	8:37PM	-	8:50PM	8:56PM	9:02PM	-	9:07PM	9:12PM
460	-	-	9:01PM	9:13PM	9:19PM	9:25PM	9:28PM	9:35PM	9:40PM
450	9:26PM	9:37PM	-	9:50PM	9:56PM	10:02PM	-	10:07PM	10:12PM
460	-	-	10:03PM	10:13PM	10:19PM	10:25PM	10:28PM	10:35PM	10:40PM
450	10:24PM	10:35PM	-	10:48PM	10:54PM	11:00PM	-	11:05PM	11:10PM
460	-	-	11:05PM	11:15PM	11:20PM	11:26PM	11:28PM	11:35PM	11:40PM



450/460 WOODWARD LOCAL Northbound for Sunday

ROUTE	WOODWARD & STATE FAIRGROUN DS	WOODWARD & 9 MILE RD.	ROYAL OAK TRANSIT CENTER	WOODWARD & 11 MILE RD.	WOODWARD & 13 MILE RD.	WOODWARD & DAINES	SOMERSET COLLECTION	WOODWARD & CHARLES LANE	PHOENIX CENTER
460	6:50AM	6:55AM	7:01AM	7:03AM	7:08AM	7:14AM	7:24AM	-	-
450	7:50AM	7:56AM	-	8:02AM	8:07AM	8:13AM	-	8:25AM	8:34AM
460	8:50AM	8:56AM	9:03AM	9:06AM	9:12AM	9:18AM	9:28AM	-	-
450	9:50AM	9:56AM	-	10:02AM	10:08AM	10:15AM	-	10:28AM	10:37AM
460	10:50AM	10:56AM	11:03AM	11:06AM	11:12AM	11:19AM	11:29AM	-	-
450	11:54AM	12:00PM	-	12:07PM	12:14PM	12:21PM	-	12:34PM	12:45PM
460	12:50PM	12:56PM	1:03PM	1:06PM	1:13PM	1:20PM	1:32PM	-	-
450	1:50PM	1:56PM	-	2:03PM	2:10PM	2:17PM	-	2:30PM	2:41PM
460	2:50PM	2:56PM	3:03PM	3:06PM	3:13PM	3:20PM	3:32PM	-	-
450	3:50PM	3:56PM	-	4:02PM	4:08PM	4:15PM	-	4:28PM	4:38PM
460	4:50PM	4:56PM	5:03PM	5:06PM	5:12PM	5:19PM	5:30PM	-	-
450	5:50PM	5:56PM	-	6:02PM	6:08PM	6:15PM	-	6:28PM	6:38PM
460	6:50PM	6:56PM	7:03PM	7:06PM	7:12PM	7:19PM	7:30PM	-	-
450	7:44PM	7:49PM	-	7:55PM	8:01PM	8:08PM	-	8:20PM	8:30PM
460	8:50PM	8:55PM	9:02PM	9:05PM	9:10PM	9:17PM	9:27PM	-	-
450	9:50PM	9:55PM	-	10:01PM	10:07PM	10:14PM	-	10:26PM	10:36PM
460	10:50PM	10:55PM	11:02PM	11:04PM	11:09PM	11:14PM	11:23PM	-	-



450/460 WOODWARD LOCAL Southbound for Sunday

ROUTE	PHOENIX CENTER	WOODWARD & CHARLES LANE	SOMERSET COLLECTION	WOODWARD & DAINES	WOODWARD & 13 MILE RD.	WOODWARD & 11 MILE RD.	ROYAL OAK TRANSIT CENTER	WOODWARD & 9 MILE RD.	WOODWARD & STATE FAIRGROUN DS
460	-	-	5:50AM	5:57AM	6:02AM	6:07AM	6:10AM	6:17AM	6:22AM
450	6:50AM	6:59AM	-	7:10AM	7:15AM	7:20AM	-	7:25AM	7:30AM
460	-	-	7:50AM	8:00AM	8:06AM	8:13AM	8:16AM	8:23AM	8:28AM
450	8:50AM	9:00AM	-	9:11AM	9:17AM	9:24AM	-	9:29AM	9:34AM
460	-	-	9:50AM	10:02AM	10:08AM	10:15AM	10:18AM	10:25AM	10:30AM
450	10:50AM	11:00AM	-	11:11AM	11:17AM	11:24AM	-	11:29AM	11:34AM
460	-	-	11:50AM	12:02PM	12:08PM	12:15PM	12:18PM	12:26PM	12:31PM
450	12:50PM	1:02PM	-	1:15PM	1:21PM	1:28PM	-	1:34PM	1:39PM
460	-	-	1:50PM	2:03PM	2:09PM	2:16PM	2:19PM	2:27PM	2:32PM
450	2:50PM	3:02PM	-	3:15PM	3:21PM	3:28PM	-	3:34PM	3:39PM
460	-	-	3:50PM	4:03PM	4:09PM	4:16PM	4:19PM	4:27PM	4:32PM
450	4:50PM	5:02PM	-	5:15PM	5:21PM	5:28PM	-	5:34PM	5:39PM
460	-	-	5:50PM	6:03PM	6:09PM	6:16PM	6:19PM	6:27PM	6:32PM
450	6:50PM	7:02PM	-	7:15PM	7:21PM	7:28PM	-	7:34PM	7:39PM
460	-	-	7:50PM	8:03PM	8:09PM	8:15PM	8:18PM	8:26PM	8:31PM
450	8:50PM	9:01PM	-	9:14PM	9:20PM	9:26PM	-	9:31PM	9:36PM
460	-	-	9:50PM	10:02PM	10:08PM	10:14PM	10:17PM	10:24PM	10:29PM
450	10:56PM	11:07PM	-	11:20PM	11:26PM	11:32PM	-	11:37PM	11:42PM
460	-	-	11:25PM	11:35PM	11:39PM	11:44PM	11:46PM	11:52PM	11:57PM

Section 3.5

Phase I Environmental Site Assessment



Environmental & Engineering Services Nationwide



ENVIRONMENTAL SERVICES

BUILDING ARCHITECTURE,
ENGINEERING & SCIENCE

INDUSTRIAL HYGIENE SERVICES

BROWNFIELDS & ECONOMIC
INCENTIVES CONSULTING

BASELINE ENVIRONMENTAL ASSESSMENT

Commercial Properties

300-394 South Old Woodward Avenue and
294 East Brown Street | Birmingham, Michigan
PM Project Number 01-12660-0-0002

Prepared for:

Boji Group, LLC

124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

Prepared by:

PM Environmental, Inc.

4080 West Eleven Mile Road
Berkley, Michigan 48072

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Michigan Locations
Berkley Bay City
Grand Rapids Lansing
Chesterfield Oak Park

September 14, 2021

District Supervisor
Michigan Department of Environment, Great Lakes, and Energy
Warren District Office
27700 Donald Court
Warren, Michigan 48092

**Re: Baseline Environmental Assessment of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Environmental, Inc. Project No. 01-12660-0-0002**

Dear District Supervisor:

Enclosed is a copy of the Baseline Environmental Assessment (BEA) prepared for the above referenced subject property in accordance with Section 20126(1)(c)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

If you have any questions regarding the information in this report, please contact our office at 800-313-2966.

**REPORT PREPARED BY:
PM ENVIRONMENTAL, INC.**

Aaron Snow
Staff Scientist

**REPORT REVIEWED BY:
PM ENVIRONMENTAL, INC.**

Jennifer Ritchie, CPG
National Manager – Site Investigation Services



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Michigan Locations
Berkley Bay City
Grand Rapids Lansing
Chesterfield Oak Park

September 14, 2021

Mr. John Hindo
Boji Group, LLC
124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

**Re: Baseline Environmental Assessment of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Environmental, Inc. Project No. 01-12660-0-0002**

Dear Mr. Hindo:

Enclosed is a copy of the Baseline Environmental Assessment (BEA) prepared for the above referenced subject property in accordance with Section 20126(1)(c)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

THIS BASELINE ENVIRONMENTAL ASSESSMENT WAS PERFORMED FOR THE EXCLUSIVE USE OF BOJI GROUP, LLC, RESTORATION HARDWARE, INC., AND WOODWARD DEVELOPMENT, LLC, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

If you have any questions regarding the information in this report, please contact our office at 800-313-2966.

**REPORT PREPARED BY:
PM ENVIRONMENTAL, INC.**

Aaron Snow
Staff Scientist

**REPORT REVIEWED BY:
PM ENVIRONMENTAL, INC.**

Jennifer Ritchie, CPG
National Manager – Site Investigation Services

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APPENDICES

- Appendix A: Phase I ESA
Appendix B: Photographic Log from GPR Survey
Appendix C: Soil Boring/Temporary Monitoring Well Logs
Appendix D: Laboratory Analytical Reports
Appendix E: Assessing Information
Appendix F: Professional Qualification Statements

1.0 INTRODUCTION AND DISCUSSION

PM Environmental, Inc. (PM) completed a Baseline Environmental Assessment (BEA) of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan 48009 (hereafter referred to as the “subject property”) in accordance with Section 20126(1)(c) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

The subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) totaling 1.25 acres located on the west side of South Old Woodward Avenue, south of East Brown Street, and north of Daines Street in Birmingham, Oakland County, Michigan (Figure 1). The subject property is currently developed with one 4,300 square foot single-story building with a partial basement (300 South Old Woodward Avenue), one 7,913 square foot single story building with a partial basement (360-394 South Old Woodward Avenue), and one 13,290 square foot single story building with a basement (294 East Brown Street). The remainder of the subject property consists of asphalt paved driveways and parking areas, concrete sidewalks, and groomed grass landscaping areas. Operations on the northeastern and western parcels consist of general office activities while operations on the southeastern parcel consist of retail sales and shoe repair activities.

1.1 Owner/Operator Information

Woodward Development, LLC, having an office at 15 Koch Road, Corte Madera, California 94925, purchased the subject property on September 28, 2021.

1.2 Intended Use of the Subject Property

Woodward Development, LLC, intends demolish the current subject buildings and redevelop subject property for mixed use purposes, including the construction of a mixed use building with underground parking.

The subject property is currently zoned B-1: Neighborhood Business. The zoning is consistent with a Nonresidential property use as defined under Part 201, however, the subject property will be redeveloped for mixed Residential and Nonresidential use in the future.

The subject property is currently connected to municipal water, municipal sewer, natural gas, electrical, and telecommunications utilities.

1.3 Summary of All Appropriate Inquiry Phase I Environmental Site Assessment

PM completed a Phase I Environmental Site Assessment (ESA) Update for the subject property dated September 14, 2021, in conformance with the scope and limitations of ASTM Practice E 1527-13. A copy of the September 2021 Phase I ESA Update, including photographs of the subject property, is included in Appendix A. The purpose of the September 2021 Phase I ESA Update report was to update the information included in the Phase I ESA report completed by PM dated December 11, 2020. The December 2020 Phase I ESA is summarized in Section 1.4 below.

The following onsite recognized environmental condition (REC) was identified within the Phase I ESA Update:

- The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service and gasoline dispensing station operations between at least 1929 and 1967, and potentially until 1988. Based on review of a previous site investigation completed between 2020 and 2021, soil contamination exists on-site above the current Part 201 Residential and Nonresidential Generic Cleanup Criteria. Based on these analytical results, the subject property would be classified as a "facility," as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended. Additionally, based on documented exceedances, a potential vapor intrusion concern exists at the property.

No adjoining and/or nearby RECs were identified.

1.3.1 Phase I ESA Exceptions or Deletions

During the completion of PM's December 2020 Phase I ESA, there were no exceptions or deletions from the Federal All Appropriate Inquiry Rule under 40 CFR 312, or the ASTM Standard. To the best of PM's knowledge, no special terms or conditions applied to the preparation of the Phase I ESA.

1.3.2 Phase I ESA Data Gaps

PM did not identify any significant data gaps during the completion of the December 2020 Phase I ESA.

1.4 Summary of Previous Site Investigations

PM reviewed the following previous environmental report for the subject property. Relevant portions of the report are included in Appendix C of PM's September 2021 Phase I ESA Update (Appendix A).

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	12-11-2020	PM

2020 Phase I ESA

At the time of the Phase I ESA, the subject buildings were occupied by similar office, retail, and shoe repair operations as this current assessment. Standard and other historical sources document that the northeastern parcel, identified as 300 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and shed structure. A small storefront building was constructed in the eastern portion of the parcel between 1926 and 1931. The dwelling and shed structure were demolished by 1945 when the northern portion of the current building was constructed in the same area of the parcel. The small storefront building was demolished by 1949. The southern addition of the current building was completed in 1954 and additional southeastern addition was completed in 1994. The building was labeled as a storefront in the 1949 Sanborn map, with a used car sales operation depicted south of the building. Based on local street directories documenting the southeastern parcel being occupied by a dealership, it is likely that

the used car sales operations were for the dealership / surface lot and not associated with the current building. The building has been occupied by various professional offices since at least 1951.

PM was unable to determine the occupants of the former small storefront building (constructed between 1926 and 1931 and demolished by 1949) or the occupants of the current building from construction in 1945 until 1951 when first known office use was identified. Based on the relatively small scale and short timeframe of former operations, PM did not identify the unknown operations as a REC. Additionally, PM did not identify the former automotive sales lot on the property as a REC.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and garage structure. The former dwelling was converted to a storefront by 1926. PM was unable to confirm the operations of the former storefront building on the property between at least 1926 and 1929. However, based on the small scale and short timeframe of operations, PM did not identify the unknown operations as a REC.

The southeastern parcel was redeveloped in approximately 1929 with a majority of the current building, occupied by an automotive service operation and gasoline dispensing station, with at least four underground storage tanks (USTs) located along South Old Woodward Avenue. Gasoline dispensing operations ceased at some time between 1960 and 1970 and an addition to the service building was completed in the area of former dispensing operations between 1967 and 1974. The building was occupied by automotive service operations until at least 1967. The building was divided into multiple tenant spaces during at least the late-1960s and occupied by a theater between at least 1966 and 1986, automotive sales with potential service operations between at least 1980 and 1988, a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976, automotive sales in the mid-2000s, and Frank's Shoe Service and additional retail operations since at least 1969. Cobbler activities (Frank's Shoe Service) include shoe repair, painting, leather conditioning, and polishing. Based on the small scale of operations and lack of waste generated, PM did not identify the cobbler activities as a REC.

The western parcel, identified as 294 East Brown Street, was developed prior to 1921 with two dwellings in the western portion and a former roadway (Ann Street), transecting the parcel from north to south. An additional dwelling was constructed in the northeastern portion of the parcel between 1926 and 1931. A former dwelling in the northwestern portion was demolished and a majority of the current building was constructed in 1956. The former northeastern and remaining western dwellings were converted for office use. The former converted dwellings / office buildings were demolished, the southern addition was completed on the current building, and the former roadway was closed between 1967 and 1974. The current building was occupied by various offices, retail sales, or salons between 1958 and 1971, Chudik's Furs between at least 1970 and 1991, and various professional offices since at least 1998.

The following onsite RECs were identified within the Phase I ESA:

- The current building on the southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted

of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.

- Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property.
- The southeastern parcel was historically occupied by a gasoline dispensing station between at least 1929 and the 1960s. Review of available records document at least four USTs associated with these operations. A gasoline tank was also depicted east of this parcel, in the South Old Woodward Avenue right of way in the 1926 Sanborn map. Available City of Birmingham Fire Department records document the removal of five abandoned USTs from the property in 1970. No additional information on the condition of the USTs upon removal or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s).
- The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations.
- The current building on the western parcel, identified as 294 East Brown Street, was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning operations between at least 1970 and 1991. In PM's experience, fur retailers commonly have repair and cleaning operations that involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Reasonably ascertainable City of Birmingham Fire Department records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted onsite. A significant portion of this time period preceded major

environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination.

No adjoining and/or nearby RECs were identified.

1.5 Summary of Current Site Investigation

Prior to the commencement of field activities, MissDig, a utility locating service, was contacted to locate utilities on or adjacent to the subject property. Utilities were marked by the respective utility companies where they entered or were located adjacent to the subject property. In addition, PM and Ground Penetrating Radar Systems (GPRS) utilized ground penetrating radar (GPR) and a utility wand to clear the soil boring locations of private subsurface utilities.

1.5.1 Geophysical Survey Investigation

On December 21, 2020, PM completed a geophysical survey investigation utilizing GPR to determine the potential presence of orphan USTs and in-ground hoists on the exterior portion of the subject property and the interior of the northern portion of southeastern subject building.

On January 21, 2021, PM oversaw the completion of a geophysical survey investigation by GPRS, who utilized GPR to determine the potential presence of orphan USTs and in-ground hoists within the southern portion of the southeastern subject building.

The geophysical surveys were completed using a GSSI® SIR-4000 radar control unit equipped with a 400 megahertz (MHz) antenna utilizing a 2-dimensional scanning method in a 2 foot surface grid pattern (i.e., in north-south and east-west directions) and non-grid patterns, to a maximum depth of 3.5 feet below ground surface (bgs).

PM encountered parked vehicles located north and west of the southeastern subject building that limited its ability to assess the entire survey area. General storage and current operations within the southeastern subject building limited the GPR survey within the southeastern subject building interior to a non-grid pattern scan.

No anomalies consistent with the presence of orphan USTs or in-ground hoists were identified during the geophysical survey investigations. Other anomalies not consistent with orphan USTs and in-ground hoists (i.e., those consistent with subsurface utilities, rebar, etc.) may have been observed; however, they are not included within this report. The GPR survey area is depicted on Figure 2. Photographs from the geophysical survey investigation are included in Appendix B.

1.5.2 Subsurface Investigation

On December 21, 2020 and January 21 and February 22, 2021, PM completed subsurface investigation activities at the subject property that consisted of advancing 12 soil borings (SB-1 through SB-12), installing two temporary monitoring wells (SB/TMW-6 and SB/TMW-9), and collecting 17 soil samples and two groundwater samples for laboratory analysis to assess the RECs identified in PM's December 2020 Phase I ESA. The soil and groundwater samples were submitted to Merit Laboratories, Inc. in East Lansing, Michigan for laboratory analysis of volatile

organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or polynuclear aromatic hydrocarbons (PNAs), PCBs, and Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), or some combination thereof.

The soil boring/temporary monitoring well locations are depicted on Figure 3.

1.5.3 Subsurface Investigations Techniques and QA/QC Procedures

The soil borings were advanced to the desired depth using either a direct push drill rig (SB-3, SB-4, SB-6, SB-8, and SB-9) and/or a hand auger equipped with a stainless steel bucket (SB-1, SB-2, SB-5, SB-7, SB-10, SB-11, and SB-12). Soil sampling was performed for soil classification, verification of subsurface geologic conditions, and for investigating the potential and/or extent of soil and/or groundwater contamination at the subject property. Soil samples were generally collected on a continuous basis using a stainless steel bucket in the case of the hand auger or a 5-foot long macro-core sampler in the case of the direct push drill rig.

Before drilling and between each soil boring, the drilling and sampling equipment was cleaned to minimize the possibility of cross contamination. These procedures included cleaning equipment with a phosphate free solution (i.e., Alconox®) and rinsing with distilled water after each sample collection. Drilling and sampling equipment were also cleaned in this manner prior to initiating field activities.

Soil collected from 1-foot sample intervals was screened using a photoionization detector (PID) to determine if VOCs were present. Soil from specific depths was placed in plastic bags and allowed to volatilize. The headspace within each bag was then screened with the PID, which is able to detect trace levels of organic compounds in the air space within the plastic bag. Soil samples were collected from the soil boring based upon the highest PID reading, visual/olfactory evidence, a change in geology, surficial soil, and/or directly above saturated soil.

Soil samples for VOC analysis were preserved with methanol in accordance with United States Environmental Protection Agency (USEPA) method 5035.

Temporary monitoring wells (SB/TMW-6 and SB/TMW-9) were installed for groundwater sample collection. At each monitoring well location, a new well assembly, consisting of a 5-foot long, 0.010-inch slot, schedule 40, poly-vinyl chloride (PVC) screen and PVC casing was lowered into the borehole to intersect the water table. After the screen for the well was set to the desired depth, an artificial sand pack was installed or the natural sands in the formation were utilized as the sand pack around the well screen. The groundwater samples were generally collected from the temporary monitoring wells in accordance with the MDEQ Operational Memorandum No. 2 "Sampling and Analysis," October 22, 2004, Revised July 5, 2007, using low flow sampling methods and a peristaltic pump equipped with new, chemically inert, 3/8-inch diameter polyethylene and silicon tubing. The samples were collected directly from the tubing into preserved vials/bottles or within unpreserved bottles/jars, as applicable for the analyte and/or method.

The soil and groundwater samples were placed in laboratory provided, pre-cleaned and appropriately labeled containers with Teflon® lined lids and/or sanitized glass jars, then placed in

an ice-packed cooler and transported under chain of custody procedures for laboratory analysis within applicable holding times to Merit Laboratories, Inc. in East Lansing, Michigan.

Upon completion of the investigation, the soil borings and temporary monitoring wells were abandoned by removing the temporary monitoring well materials, then placing the soil cuttings back into the borehole, filling the void with bentonite chips, hydrating the chips, resurfacing and returning the area to its pre-drilling condition.

1.6 Geology and Hydrogeology

Based on a review of PM's soil boring logs, the soil stratigraphy at the subject property primarily consists of sandy clay to a depth of at least 13.0 feet bgs underlain by clay to 20.0 feet bgs, the maximum depth explored.

Saturated sand seams were encountered in two soil borings advanced at the subject property (SB/TMW-6 and SB/TMW-9) at a depth of approximately 4.0 feet bgs.. No groundwater and/or saturation was encountered in the remaining soil borings advanced on the subject property.

The soil boring/temporary monitoring well logs are included in Appendix C, which summarize site-specific geology, sample depths, temporary monitoring well construction diagrams, and PID readings.

2.0 LOCATION OF CONTAMINATED MEDIA ON THE SUBJECT PROPERTY

PM compared the analytical results of the soil and groundwater samples collected from the subject property with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity", in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria.

PM also compared the analytical results of the soil and groundwater samples collected from the subject property with the EGLE Volatilization to Indoor Air Pathway (VIAP) screening levels (September 4, 2020). Although not an enforceable standard or a standard by which documentation of due care compliance may be demonstrated, the available VIAP screening levels are consistent with EGLE provided site specific values and are a means to discuss risk and potential due care requirements for a property.

The soil and groundwater sample locations and analytical summaries are included on Figure 3 and in Tables 1 and 2. The laboratory analytical reports and associated chain of custody documentation are included in Appendix D.

2.1 Soil Analytical Results

Concentrations of various petroleum VOCs were detected in soil sample SB-12 (4.0-5.0 feet bgs) above the Part 201 Residential and Nonresidential Drinking Water Protection (DWP) and Groundwater Surface Water Interface Protection (GSIP) cleanup criteria, and the Residential and Nonresidential VIAP screening levels. Concentrations of various petroleum VOCs were detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 GSIP cleanup criteria and/or the Residential VIAP screening levels. No concentrations of VOCs were detected in any of the

remaining soil samples analyzed from the subject property above laboratory method detection limits (MDLs).

Concentrations of various SVOCs/PNAs were detected in soil samples SB-6 (2.0-3.0 feet bgs), SB-8 (2.0-3.0 feet bgs), and SB-12 (4.0-5.0 feet bgs) above the laboratory MDLs, but below the most restrictive Part 201 Residential cleanup criteria. No concentrations of SVOCs/PNAs were detected in any of the remaining soil samples analyzed from the subject property above laboratory MDLs.

No concentrations of PCBs were detected in any of the soil samples analyzed from the subject property above laboratory MDLs.

A concentration of lead was detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 Residential Direct Contact (DC) cleanup criteria. No concentrations of other metals were detected in any of the soil samples analyzed from the subject property above laboratory MDLs, the Statewide Default Background Levels (SDBLs), and/or the most restrictive Part 201 Residential cleanup criteria.

2.2 Groundwater Analytical Results

No concentrations of VOCs, PNAs, and/or metals (cadmium, chromium, and lead) were detected in either of the groundwater samples analyzed from the subject property above laboratory MDLs.

2.3 Subject Property Facility Status

A location where a hazardous substance is present in excess of the concentrations, which satisfy the requirements of subsection 20120a(1)(a) or (17), is a facility pursuant to Part 201. Section 20120a(1)(a) requirements are the Cleanup Criteria for unrestricted residential usage.

Current subsurface investigations conducted at the subject property document soil contamination present at concentrations that exceed the current Part 201 Residential and Nonresidential DWP, GSIP, and Residential DC cleanup criteria established under section 20120a(1)(a) and (b) of NREPA, as revised by EGLE on December 30, 2013. Therefore, the subject property is considered a "facility" under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

3.0 PROPERTY INFORMATION

3.1 Legal Description of Subject Property

As indicated in Section 1.0, the subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) totaling 1.25 acres. Copies of available assessment records and the current legal description for the subject property are included in Appendix E.

3.2 Survey Map of Subject Property

A map of the subject property that depicts the property/parcel boundaries is included as Figure 2.

3.3 Subject Location and Analytical Summary Maps

Figure 2 provides a scaled map of the site features and Figure 3 provide scaled maps of the site features and sampling locations along with a summary of the analytical results from PM's December 2020 and January/February 2021 site investigation.

3.4 Subject Property Location Map

Figure 1 provides a scaled area map depicting the subject property location in relation to the surrounding area. Figure 2 provides a scaled map of the subject property with site features.

3.5 Subject Property Address

As indicated in Section 1.0, the subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) located at 300-394 Old Woodward Avenue and 294 Brown Street, Birmingham, Oakland County, Michigan 48009 (Figures 1 and 2).

3.6 Subject Property Spatial Data

As depicted in Figure 1, the subject property is located in Township two north (T.02N), Range eight east (R.10E), Section 36, northeast quarter, northwest quarter-quarter in Birmingham, Oakland County, Michigan.

According to the EGLE GeoWebFace Website, the subject property is located at latitude 42.544 north and a longitude of -83.212 west.

4.0 FACILITY STATUS OF SUBJECT PROPERTY

As indicated in Section 2.3, based upon the documented soil exceedances of the Part 201 Residential and Nonresidential DWP, GSIP, and Residential DC cleanup criteria, the subject property is considered a Facility under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

4.1 Summary Data Tables

The soil and groundwater sample analytical results are summarized in Tables 1 and 2.

4.2 Laboratory Reports and Chain of Custody Documentation

The laboratory analytical reports and associated laboratory chain of custody documentation for the soil and groundwater samples collected during PM's December 2020, January 2021, and February 2021 site investigations are included in Appendix D.

5.0 IDENTIFICATION OF BEA AUTHOR

This BEA was conducted on September 14, 2021, Mr. Aaron Snow, Staff Scientist, and reviewed by Ms. Jennifer Ritchie, CPG, National Manager – Site Investigation Services, PM Environmental, Inc., which is within 45 days of purchase. Qualification statements are provided as Appendix F.

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.

Report Prepared By:
PM Environmental, Inc.



Aaron Snow
Staff Scientist

Report Reviewed By:
PM Environmental, Inc.



Jennifer Ritchie, CPG
National Manager – Site Investigation Services

6.0 AAI REPORT OR ASTM PHASE I ESA

As indicated in Section 1.3, PM completed a Phase I ESA Update dated September 14, 2021 in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) located at 300-394 South Old Woodward Avenue and 294 Brown Street, Birmingham, Oakland County, Michigan 48009. The scope of the Phase I ESA included consideration of hazardous substances as defined in Section 20101(1)(x) and regulated substances as defined in Section 21303(h) of P.A 451 of 1994, as amended, and constituted the performance of an All Appropriate Inquiry in conformance with the standards and practices set forth in 40 CFR Part 312.

A copy of the September 2021 Phase I ESA is included in Appendix A.

7.0 REFERENCES

- Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM, ASTM Designation E 1527-13, Published November 2013;
- Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels,” Revised December 30, 2013;
- EGLE Operational Memorandum No. 2 “Sampling and Analysis,” October 22, 2004, Revised July 5, 2007;
- EGLE Guidance Document for The Vapor Intrusion Pathway, May 2013, including revisions to Appendix C.7 Checklist for Determining if the VIAP Screening Levels Apply and Appendix D.1 VIAP Screening Levels with Residential and Nonresidential VIAP Screening Levels Tables, September 4, 2020);
- EGLE Baseline Environmental Assessment Submittal Form EQP 4025 (Rev4/2021);
- Phase I ESA, December 11, 2020, PM; and
- Phase I ESA Update, September 14, 2021, PM.

Figures

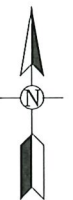


OAKLAND COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
BIRMINGHAM, MI QUADRANGLE, 1968. PHOTO REVISED 1981.



PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE
AND 294 EAST BROWN STREET
BIRMINGHAM, MI

THIS IS NOT A LEGAL
SURVEY

VERIFY SCALE

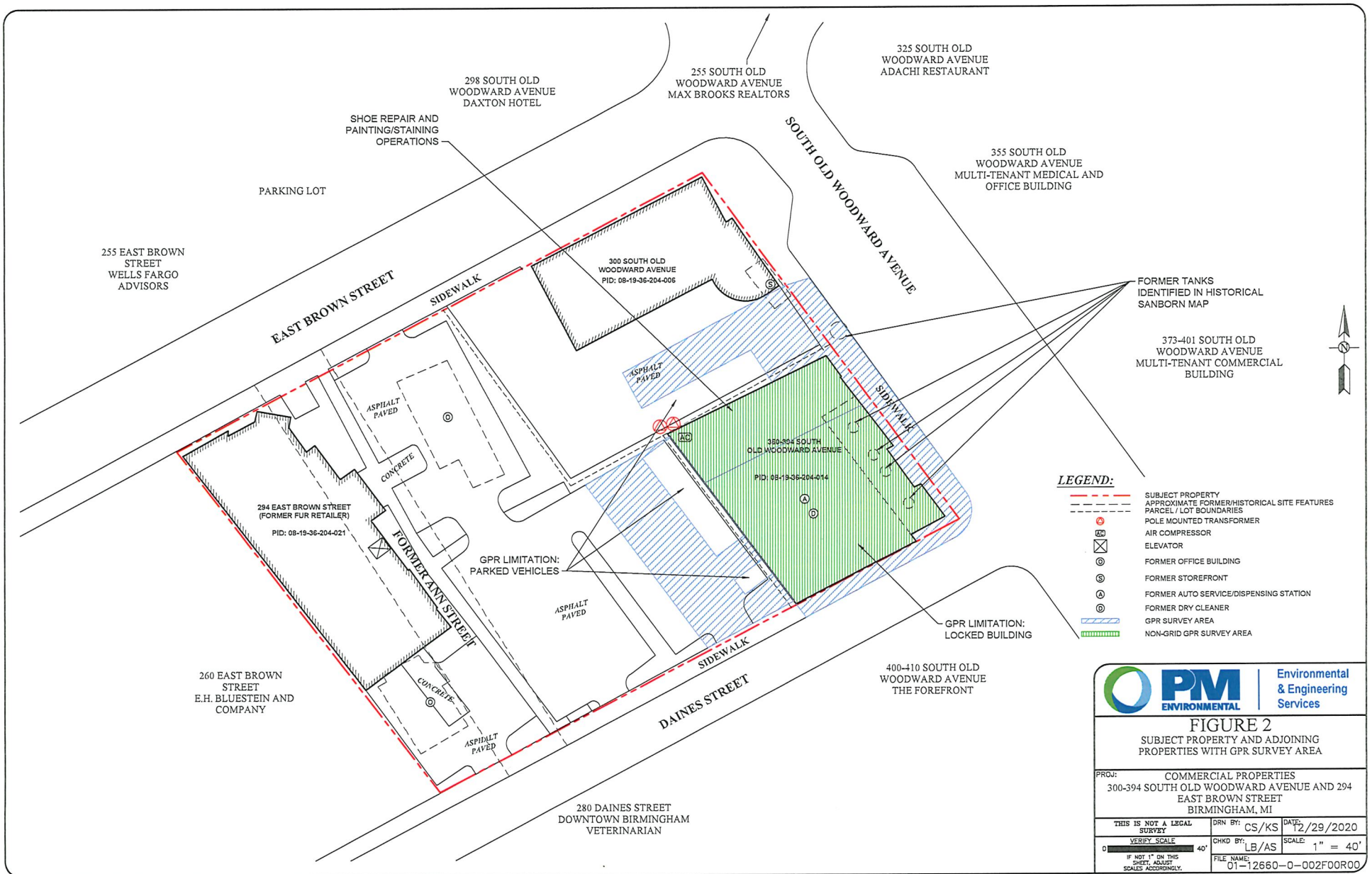
0 2,000'

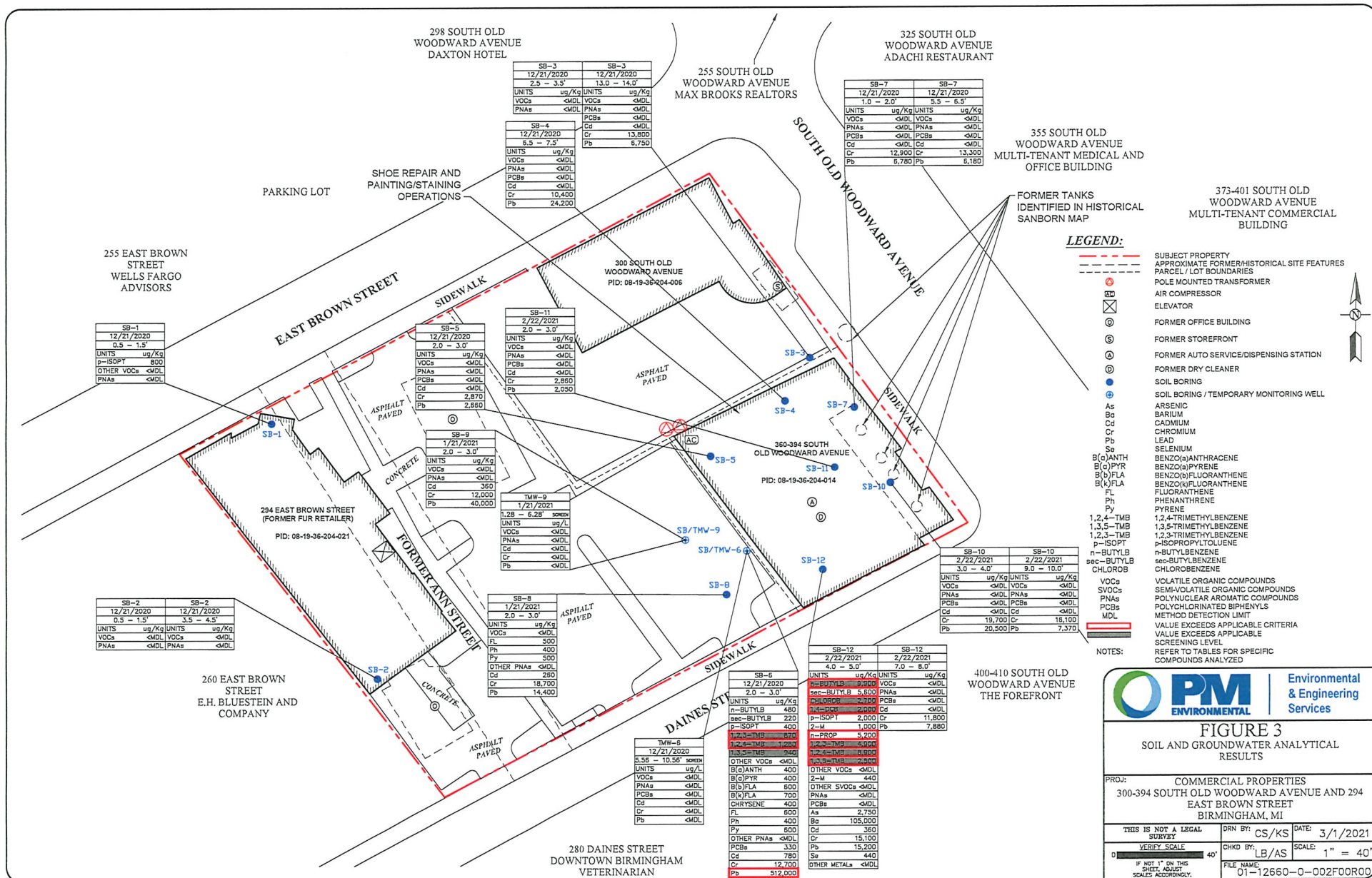
IF NOT 1" ON THIS
SHEET, ADJUST
SCALES ACCORDINGLY.

DRN BY: CS DATE: 12/1/2020

CHKD BY: LB SCALE: 1" = 2,000'

FILE NAME: 01-12660-0-002F00R00





Tables

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS: VOCs, SVOCs/PNA's, PCBs, AND METALS
306-394 SOUTH OLD WOODWARD AVENUE AND 284 EAST BROWN STREET, BIRMINGHAM, MICHIGAN
PM PROJECT # 01-12680-0-0002

Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Polynuclear Aromatic Hydrocarbons (PNA's), Polychlorinated Biphenyls (PCBs), and Metals			n-Butylbenzene	sec-Butylbenzene	Chlorobenzene	1,4-Dichlorobenzene	p-Nitrochlorobenzene	2-Nitrochlorobenzene	n-Propylbenzene	1,2,3-Trimethylbenzene*	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	2-Methylnaphthalene	Benzobiphenylene	Benzodiphenylene	Benzophenanthrene	Benzofluoranthene	Chrysene	Fluoranthene	Phenanthrene	Pyrene	Other SVOC/PNA's	PCBs	Arsenic	Boron	Calcium	Chromium	Copper	Lead	Manganese	Selenium	Silver		
(µg/Kg)			104518	135988	108807	108467	99876	91576	103651	526738	95636	108678	Various	91576	56553	50338	205992	207089	218019	206440	85018	129000	Various	1336363	7440282	7440383	7440439	16095831	7439921	7439976	7782492	7440204			
Chemical Abstract Service Number (CAS#)			104518	135988	108807	108467	99876	91576	103651	526738	95636	108678	Various	91576	56553	50338	205992	207089	218019	206440	85018	129000	Various	1336363	7440282	7440383	7440439	16095831	7439921	7439976	7782492	7440204			
Sample ID	Sample Date	Sample Depth (feet bgs)	VOCs											SVOCs/PNA's											PCBs										
SB-1	12/21/2020	0.5-1.5	<70	<70	<70	<100	800	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
		0.5-1.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
		3.5-4.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
SB-3	12/21/2020	2.5-3.5	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
		13.0-14.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	<200	13,800	6,750	N/A	N/A	N/A	N/A		
		6.5-7.5	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	<200	10,400	24,200	N/A	N/A	N/A	N/A	
SB-5	12/21/2020	2.0-3.0	<50	<50	<50	<100	<100	<100	<50	<50	<50	<50	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	<200	2,870	2,660	N/A	N/A	N/A	N/A		
SB-6	12/21/2020	2.0-3.0	480	220	<70	<100	400	<100	<70	870	1,280	940	<MDL	N/A	400	400	600	700	400	600	400	600	400	<MDL	<330	N/A	N/A	<200	12,800	6,780	N/A	N/A	N/A	N/A	
SB-7	12/21/2020	1.0-2.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	<200	12,800	6,780	N/A	N/A	N/A	N/A		
		5.5-6.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	<200	13,300	6,180	N/A	N/A	N/A	N/A		
SB-8	01/21/2021	2.0-3.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<260	16,700	14,400	N/A	N/A	N/A	N/A	
SB-9	01/21/2021	2.0-3.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<360	12,000	40,000	N/A	N/A	N/A	N/A	
SB-10	02/22/2021	3.0-4.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	16,700	32,500	N/A	N/A	N/A	N/A	
		9.0-10.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	16,100	7,370	N/A	N/A	N/A	N/A	
SB-11	02/22/2021	2.0-3.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	2,880	2,050	N/A	N/A	N/A	N/A	
SB-12	03/22/2021	4.0-5.0	9,900	5,600	2,700	2,000	2,000	1,000	5,200	4,900	8,900	2,500	<MDL	440	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	2,750	105,000	360	15,100	15,200	<50	440	<200		
		7.0-8.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	11,800	7,880	N/A	N/A	N/A	N/A	

Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, June 25, 2019
EGLLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020

			Residential (µg/Kg)																														
Statewide Default Background Levels	NA	NA	NA	NA	NL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Drinking Water Protection (Res DWPI)	1,600	1,600	2,200	1,700	NL	57,000	1,500	1,700	2,100	1,500	Various	57,000	NLL	NLL	NLL	NLL	NLL	NLL	7,30E+05	56,000	4,80E+05	Various	NLL	4,600	1,30E+05	6,000	38,000	7,30E+05	1,700	4,800	4,500		
Groundwater Surface Water Interface Protection (GSIP)	ID	ID	580	320	NL	4,200	ID	570	570	5,100	Various	4,200	NLL	NLL	NLL	NLL	NLL	NLL	5,500	2,100	ID	Various	NLL	4,600	(D)	2,600 (D, V)	2,10E+09 (D, V)	1,80E+05 (D, V)	50 (M), 1.2	400	100 (M), 27		
Soil Volatilization to Indoor Air Inhalation (Res SVII)	ID	ID	1,20E+05	19,000	NL	2,70E+05	ID	2,6E+05 (C)	4,3E+05 (C)	2,6E+05 (C)	Various	2,70E+05	NLV	NLV	ID	NLV	ID	1,8E+05 (D)	2,6E+05	1,8E+05 (D)	Various	1,2E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	46,000	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)	ID	ID	7,70E+05	77,000	NL	1,50E+05	ID	1,60E+07	3,10E+07	1,60E+07	Various	1,50E+05	NLV	NLV	ID	NLV	ID	7,40E+05	1,60E+05	6,50E+05	Various	2,40E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness	ID	ID	8,90E+05	77,000	NL	1,50E+05	ID	3,80E+06	5,00E+06	3,80E+06	Various	1,50E+05	NLV	NLV	ID	NLV	ID	7,4E+05	1,60E+05	6,50E+05	Various	7,90E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness	ID	ID	2,10E+06	1,10E+05	NL	1,50E+05	ID	3,80E+08	5,00E+08	3,80E+08	Various	1,50E+05	NLV	NLV	ID	NLV	ID	7,4E+05	1,60E+05	6,50E+05	Various	7,90E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV
Ambient Air Particulate Soil Inhalation (Res PSI)	2,00E+09	4,00E+09	4,70E+09	4,00E+08	NL	8,70E+09	1,30E+09	8,20E+10	8,20E+10	8,20E+10	Various	8,70E+09	ID	1,30E+09	ID	ID	ID	9,30E+09	8,7E+09	8,7E+09	Various	5,2E+09	7,30E+09	3,30E+09	1,70E+09	2,80E+09	1,6E+09	2,00E+07	1,20E+08	6,70E+08			
Direct Contact (Res DC)	2,50E+09	2,50E+09	4,30E+09 (C)	4,00E+05	NL	8,10E+09	2,50E+09	3,2E+07 (C)	3,2E+07 (C)	3,2E+07 (C)	Various	8,10E+09	20,000	2,000	20,000	2,00E+05	2,0E+05	4,8E+07	1,6E+06	2,50E+07	Various	(T)	7,000	3,70E+07	5,30E+05	2,30E+06	4,80E+05	1,60E+05	2,60E+06	2,50E+06			
			Nonresidential (up/Kg)																														
Drinking Water Protection (Nonres DWPI)	4,600	4,600	2,800	1,700	NL	1,70E+05	4,600	1,800	2,100	1,800	Various	1,70E+05	NLL	NLL	NLL	NLL	NLL	NLL	7,30E+05	1,60E+05	4,80E+05	Various	NLL	4,600	1,30E+05	6,000	38,000	7,30E+05	1,700	4,800	4,500		
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)	ID	ID	2,30E+05	1,90E+05	NL	4,90E+05	ID	4,8E+05 (C)	8,2E+05 (C)	4,8E+05 (C)	Various	4,90E+05	NLV	NLV	ID	NLV	ID	1,6E+05 (D)	5,1E+05	1,6E+05 (D)	Various	1,6E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	83,000	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)	ID	ID	9,30E+05	2,80E+05	NL	1,80E+05	ID	1,90E+07	2,20E+07	1,90E+07	Various	1,80E+05	NLV	NLV	ID	NLV	ID	8,90E+05	1,90E+05	7,8E+05	Various	8,10E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness	ID	ID	1,10E+06	2,80E+05	NL	1,80E+05	ID	4,60E+06	8,00E+06	4,60E+06	Various	1,80E+05	NLV	NLV	ID	NLV	ID	8,8E+05	1,90E+05	7,8E+05	Various	2,8E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness	ID	ID	2,10E+06	3,40E+05	NL	1,80E+05	ID	4,60E+08	8,00E+08	4,60E+08	Various	1,80E+05	NLV	NLV	ID	NLV	ID	8,8E+05	1,90E+05	7,8E+05	Various	2,8E+05	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV
Ambient Air Particulate Soil Inhalation (Nonres PSI)	8,00E+09	4,00E+09	1,4E+09	5,70E+08	NL	2,00E+08	3,60E+08	3,60E+10	3,60E+10	3,60E+10	Various	2,00E+08	ID	1,8E+08	ID	ID	ID	4,1E+08	2,8E+08	2,8E+08	Various	6,5E+08	6,10E+08	1,50E+08	2,3E+08	2,40E+08	4,4E+07	8,80E+08	5,00E+07	2,00E+08			
Direct Contact (Nonres DC)	8,00E+09	4,00E+09	1,4E+09 (C)	1,00E+06	NL	2,60E+07	8,00E+09	1,0E+09 (C)	1,6E+09 (C)	1,6E+09 (C)	Various	2,60E+07	80,000	8,000	80,000	8,00E+05	8,0E+06	1,3E+08	5,2E+08	8,4E+07	Various	(T)	37,000	1,30E+08	2,1E+06	9,20E+06	5,60E+05 (D)	5,80E+05	9,60E+08	9,60E+08			
			Screening Levels (µg/Kg)																														
Soil Saturation Concentration Screening Levels (Coat)	1,00E+07	1,00E+07	2,60E+05	NA	NL	NA	1,00E+07	94,000	1,10E+05	94,000	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)	0.220	3,800	82	23 (M)	NL	1,700	1,800 (D)	27E+J1	15E+J1	100E+J1	Various	1,700	1,60E+05	NA	NA	NA	NA	NA	NA	NA	NA	Various	ID	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)	0.220	66,000 (C)	1,495	690	NL	30,000	21,000 (D)	4,90E+J1	2,60E+J1	1,80E+J1	Various	30,000	1,10E+07	NA	NA	NA	NA	NA	NA	NA	NA	ID	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS: VOCs, PNAs, CADMIUM, CHROMIUM, AND LEAD
300-394 SOUTH OLD WOODWARD AVENUE AND 294 EAST BROWN STREET, BIRMINGHAM, MICHIGAN
PM PROJECT # 01-12660-0-0002

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Cadmium, Chromium, and Lead (µg/L)				VOCs	PNAs	Cadmium	Chromium	Lead
Chemical Abstract Service Number (CAS#)				Various	Various	7440439	16065831	7439921
Sample ID	Sample Date	Screen Depth (bgs)	Depth to Groundwater (bgs)	VOCs	PNAs	Metals		
TMW-6	12/21/2020	5.56-10.56	4.66	<MDL	<MDL	<0.5	<5	<3
TMW-9	01/21/2021	1.28-6.28	3.46	<MDL	<MDL	<0.5	<5	<3
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk- Based Screening Levels, August 3, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020								
Residential/Nonresidential (µg/L)								
Residential Drinking Water (Res DW)				Various	Various	5.0 {A}	100 {A}	4.0 {L}
Residential Health Based Drinking Water Values				Various	Various	NL	NL	NL
Nonresidential Drinking Water (Nonres DW)				Various	Various	5.0 {A}	100 {A}	4.0 {L}
Nonresidential Health Based Drinking Water Values				Various	Various	NL	NL	NL
Groundwater Surface Water Interface (GSI)				Various	Various	44 {G,X}	1500	200 {G,X}
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) ¹				Various	Various	NLV	NLV	NLV
Nonresidential Groundwater Volatilization to Indoor Air Inhalation (Nonres GVII) ¹				Various	Various	NLV	NLV	NLV
Screening Levels (µg/L)								
Residential Shallow Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Nonresidential Shallow Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Water Solubility				Various	Various	NA	NA	NA
Flammability and Explosivity Screening Level				Various	Various	ID	ID	ID

	Criteria Exceeded	(G) Metal GSI Criteria for Surface Water Not Protected for Drinking Water Use based on
BOLD	Value Exceeds Criteria	100 mg/L CaCO3 Hardness: Station ID 821270, Detroit River, near Ecorse, MI.
	Value Exceeds Screening Level	
<u>underline</u>	Screening Level Exceeded	
µg/L	Micrograms Per Liter	
bgs	Below Ground Surface (feet)	
<MDL	Not detected at levels above the laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)	
¹	Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth	
NA	Not Applicable	
NL	Not Listed	
NLV	Not Likely to Volatilize	
ID	Insufficient Data	
5.0 {A}	Other Alpha notation, please refer to MDEQ Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 30, 2013	

September 14, 2021

Mr. John Hindo
Boji Group, LLC
124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

**Re: Phase I Environmental Site Assessment Update of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan
PM Environmental, Inc. Project No. 01-12660-0-0004**

Dear Mr. Hindo:

PM Environmental, Inc. (PM) has completed the Phase I Environmental Site Assessment (ESA) Update of the above referenced property. This Phase I ESA Update was conducted in general accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) Section 4.6 of the guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

The purpose of the Phase I ESA Update was to gather sufficient information to develop an independent professional opinion about the environmental condition of the property.

The Phase I ESA Update for the above referenced property represents the product of PM's professional expertise and judgment in the environmental consulting industry, and it is reasonable for **BOJI GROUP, LLC AND RESTORATION HARDWARE, INC.** to rely on PM's Phase I ESA Update report.

If you have any questions related to this report, please do not hesitate to contact our office at 248.336.9988.

Sincerely,
PM ENVIRONMENTAL, INC.



Lauren Babuska
Project Consultant



Beth Sexton
Chief Operating Officer

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FIGURES

- Figure 1: Property Vicinity Map
Figure 2: Generalized Diagram of the Subject Property and Adjoining Properties

APPENDICES

- Appendix A: Property Photographs from Site Reconnaissance
Appendix B: Previous Site Investigation(s)
Appendix C: Correspondence and Supporting Documentation
Appendix D: Regulatory Database and File Review Correspondence
Appendix E: Professional Resumes
Appendix F: Acronyms and Terminology, Scope of Work, ASTM Reference Document, and User's Continuing Obligations under CERCLA

1.0 INTRODUCTION

PM Environmental, Inc., (PM) was retained to conduct a Phase I Environmental Site Assessment (ESA) Update of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan (hereafter referred to as the “subject property”). This Phase I ESA Update was conducted in general accordance with guidelines established by the American Society for Testing and Materials (ASTM) International in Section 4.6 of the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF BOJI GROUP, LLC AND RESTORATION HARDWARE, INC., EACH OF WHOM MAY RELY ON THE REPORT’S CONTENTS.

The purpose of this report is to update the information included in the Phase I ESA report completed by PM in December 2020. The previous report was completed in general accordance with the scope and limitations of the ASTM Standard Practice for Environmental Site Assessments: Phase I ESA Process (Designation: E 1527-13). The information provided in the previous Phase I ESA report sufficiently addressed conditions of the subject property from 2020 to 1921, at which time data failure occurred. In accordance with Section 4.6 of the ASTM Practice E 1527-13, the information provided in the previous report has been adopted for use in this update.

In accordance with Section 4.6 of the ASTM Practice E 1527-13, the minimum requirements for an update of a Phase I ESA include: 1) interviews with owners, operators, and occupants, 2) searches for recorded environmental cleanup liens, 3) review of federal, tribal, state, and local government records, 4) visual inspection of the subject property and of adjoining properties, and 5) the declaration by the environmental professional responsible for the update.

1.1: Limitations, Deviations, and Special Terms and Conditions

There are no deviations from the ASTM Standard. Any physical limitations identified during the completion of this report are referenced in Section 6.0.

Due to changing environmental regulatory conditions and potential on-site or adjacent activities occurring after this assessment, the client may not presume the continuing applicability to the subject property of the conclusions in this assessment for more than 180 days after the report’s issuance date, per ASTM Standard Practice E 1527-13.

To the best of PM’s knowledge, no special terms or conditions apply to the preparation of this Phase I ESA that would deviate the scope of work from the ASTM Standard Practice E 1527-13.

PM was not provided with a copy of the recorded land title records for subject property by the client and was not requested to complete a title search. Therefore, PM cannot comment on any potential relevant information that may have been obtained through review of these records.

2.0 SUBJECT PROPERTY OVERVIEW

Subject Property Location/Address	300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan		
Number of Parcels and Acreage	Three parcels totaling 1.25 acres		
Parcel Identifier in this report, Parcel Address, and Number of Building(s) and Square Footage per Parcel	Northeastern Parcel	300 South Old Woodward Avenue	4,300 square foot single-story building with partial basement
	Southeastern Parcel	360-394 South Old Woodward Avenue	7,913 square foot single-story building with partial basement
	Western Parcel	294 East Brown Street	13,290 square foot two-story building with basement
Current Property Use	Operations on the northeastern and western parcels consist of general office activities. Operations on the southeastern parcel consist of retail sales and shoe repair (cobbler) activities.		
Current Zoning	B-1: Neighborhood Business		

The subject property location is depicted on Figure 1, Property Vicinity Map. A diagram of the subject property and adjoining properties is included as Figure 2, Generalized Diagram of the Subject Property and Adjoining Properties. Photographs taken during the site reconnaissance are included in Appendix A.

3.0 PREVIOUS SITE INVESTIGATION(S)

PM reviewed the following previous environmental reports for the subject property. Relevant portions of the reports are included in Appendix B.

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	12-11-2020	PM
Baseline Environmental Assessment (BEA) and Documentation of Due Care Compliance (DDCC)	3-25-2021	PM

2020 Phase I ESA

At the time of the Phase I ESA, the subject buildings were occupied by similar office, retail, and shoe repair operations as this current assessment. Standard and other historical sources document that the northeastern parcel, identified as 300 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and shed structure. A small storefront building was constructed in the eastern portion of the parcel between 1926 and 1931. The dwelling and shed structure were demolished by 1945 when the northern portion of the current building was constructed in the same area of the parcel. The small storefront building was demolished by 1949. The southern addition of the current building was completed in 1954 and additional southeastern addition was completed in 1994. The building was labeled as a storefront in the 1949 Sanborn map, with a used car sales operation depicted south of the building. Based on local street directories documenting the southeastern parcel being occupied by a dealership, it is likely that the used car sales operations were for the dealership / surface lot and not associated with the current building. The building has been occupied by various professional offices since at least 1951.

PM was unable to determine the occupants of the former small storefront building (constructed between 1926 and 1931 and demolished by 1949) or the occupants of the current building from construction in 1945 until 1951 when first known office use was identified. Based on the relatively small scale and short timeframe of former operations, PM did not identify the unknown operations as a recognized environmental condition (REC). Additionally, PM did not identify the former automotive sales lot on the property as a REC.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and garage structure. The former dwelling was converted to a storefront by 1926. PM was unable to confirm the operations of the former storefront building on the property between at least 1926 and 1929. However, based on the small scale and short timeframe of operations, PM did not identify the unknown operations as a REC.

The southeastern parcel was redeveloped in approximately 1929 with a majority of the current building, occupied by an automotive service operation and gasoline dispensing station, with at least four underground storage tanks (USTs) located along South Old Woodward Avenue. Gasoline dispensing operations ceased at some time between 1960 and 1970 and an addition to the service building was completed in the area of former dispensing operations between 1967 and 1974. The building was occupied by automotive service operations until at least 1967. The building was divided into multiple tenant spaces during at least the late-1960s and occupied by a theater between at least 1966 and 1986, automotive sales with potential service operations between at least 1980 and 1988, a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976, automotive sales in the mid-2000s, and Frank's Shoe Service and additional retail operations since at least 1969. Cobbler activities (Frank's Shoe Service) include shoe repair, painting, leather conditioning, and polishing. Based on the small scale of operations and lack of waste generated, PM did not identify the cobbler activities as a REC.

The western parcel, identified as 294 East Brown Street, was developed prior to 1921 with two dwellings in the western portion and a former roadway (Ann Street), transecting the parcel from north to south. An additional dwelling was constructed in the northeastern portion of the parcel between 1926 and 1931. A former dwelling in the northwestern portion was demolished and a majority of the current building was constructed in 1956. The former northeastern and remaining western dwellings were converted for office use. The former converted dwellings / office buildings were demolished, the southern addition was completed on the current building, and the former roadway was closed between 1967 and 1974. The current building was occupied by various offices, retail sales, or salons between 1958 and 1971, Chudik's Furs between at least 1970 and 1991, and various professional offices since at least 1998.

The following onsite RECs were identified within the Phase I ESA:

- The current building on the southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.

- Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property.
- The southeastern parcel was historically occupied by a gasoline dispensing station between at least 1929 and the 1960s. Review of available records document at least four USTs associated with these operations. A gasoline tank was also depicted east of this parcel, in the South Old Woodward Avenue right of way in the 1926 Sanborn map. Available City of Birmingham Fire Department records document the removal of five abandoned USTs from the property in 1970. No additional information on the condition of the USTs upon removal or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s).
- The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations.
- The current building on the western parcel, identified as 294 East Brown Street, was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning operations between at least 1970 and 1991. In PM's experience, fur retailers commonly have repair and cleaning operations that involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Reasonably ascertainable City of Birmingham Fire Department records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted on-site. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination.

No adjoining and/or nearby RECs were identified.

2021 BEA and DDCC

As part of the 2021 BEA and DDCC, PM completed a subsurface investigation between December 2020 and February 2021 to assess the RECs identified in the 2020 Phase I ESA.

In December 2020 and January 2021, PM completed a ground penetrating radar (GPR) survey to assess the potential for orphan USTs and in-ground hoists in the exterior portion and northern and southern interior portions of the southeastern building. No anomalies consistent with the presence of orphan USTs or in-ground hoists were identified.

PM advanced 12 soil borings (SB-1 through SB-12) to 20.0 feet below ground surface (bgs), installed two temporary monitoring wells (SB/TMW-6 and SB/TMW-9), and collected 17 soil and two groundwater samples at the property between December 2020 and February 2021. Soil and groundwater samples were submitted for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PNAs), PCBs, and various metals, or some combination thereof.

Concentrations of various petroleum VOCs were detected in soil samples SB-6 and SB-12 (2.0-3.0 and 4.0-5.0 feet bgs) above the Part 201 Residential and/or Nonresidential Drinking Water Protection (DWP) and Groundwater Surface Water Interface Protection (GSIP) cleanup criteria, and the Residential and Nonresidential Volatilization to Indoor Air Pathway (VIAP) screening levels. No concentrations of additional VOCs were detected in any of the remaining soil samples analyzed from the subject property above laboratory method detection limits (MDLs) and/or the most restrictive Part 201 Residential cleanup criteria.

Concentrations of various SVOCs/PNAs were detected in soil samples SB-6 (2.0-3.0 feet bgs), SB-8 (2.0-3.0 feet bgs), and SB-12 (4.0-5.0 feet bgs) above the laboratory MDLs, but below the most restrictive Part 201 cleanup criteria. No concentrations of additional SVOCs/PNAs were detected in any of the remaining soil samples analyzed from the subject property above laboratory MDLs.

A concentration of lead was detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 Residential Direct Contact (DC) cleanup criteria. No concentrations of other metals were detected in any of the soil samples analyzed from the subject property above laboratory MDLs, the Statewide Default Background Levels (SDBLs), and/or the most restrictive Part 201 Residential cleanup criteria.

No concentrations of PCBs were detected above laboratory MDLs and/or the most restrictive Part 201 Residential cleanup criteria.

No concentrations of VOCs, PNAs, or metals (cadmium, chromium, and lead) were detected in either of the groundwater samples above laboratory MDLs.

A BEA and DDCC were completed for Boji Group, LLC. The BEA has not been submitted to Michigan Department of Environment, Great Lakes, and Energy (EGLE), but has been provided to the client with the necessary information for submittal.

Conclusions

The RECs identified during the 2020 Phase I ESA have been adequately assessed.

Based on review of the previous site investigation, soil contamination exists on-site above the current Part 201 Residential and Nonresidential Generic Cleanup Criteria. **Based on these analytical results, the subject property would be classified as a “facility,” as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended. Additionally, based on the VIAP exceedances, a potential vapor intrusion concern exists at the property.**

4.0 INTERVIEWS

Section 4.6 of the ASTM Practice E 1527-13 requires new interviews be completed with the owner, operators, and occupants of the subject property. The objective of completing interviews with knowledgeable site contacts is to obtain information about the uses and physical characteristics of the property.

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner, Key Site Manager, and Current Occupant – 300 South Old Woodward Avenue	Yes	Mr. Adam Lutz, Chief Executive Officer of Lutz Financial Services and representative of the current owner (BRB Equities LLC)	Nine years	Mr. Lutz provided access to the northeastern and southeastern subject buildings. PM previously interviewed Mr. Lutz, who has leased the 300 South Old Woodward Avenue building since 2011 and completed a full interior renovation of the building. Mr. Lutz indicated the building has historically been occupied by professional offices. Mr. Lutz was unaware of any aboveground storage tanks (ASTs) or USTs associated with the subject property. Mr. Lutz also indicated the southeastern parcel subject building (360-394 South Old Woodward Avenue) has been occupied by various retail or the current shoe repair operations since at least 2011. No additional information was reported that would be considered material to identifying RECs associated with the property.

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner – 360-394 South Old Woodward Avenue	No	Frank Konjarevich Trust	Since at least 2000	PM requested contact information for the current owner of the southeastern subject parcel; however, information was not received within the time constraints of this report. Current occupant and representative of the current owner on the northeastern parcel provided access and relevant information. Refer above for additional information.
Current Property Owner, Key Site Manager, and Current Occupant – 294 East Brown Street	Yes	Mr. John North, Chief Executive Officer of Coldwell Banker and representative of the current owner (Trott Properties, 294 LLC)	Ten years	PM previously interviewed Mr. North, who indicated he has leased the 294 East Brown Street building since 2010 and completed a full interior renovation in 2010. Mr. North was unaware of any ASTs or USTs associated with the subject property. No additional information was reported that would be considered material to identifying RECs associated with the subject property.
Former Property Owner	No	Not applicable	Not applicable	Contact information for the former owner was not reasonably ascertainable or provided by the User.
Former Occupant(s)	No	Not applicable	Not applicable	Contact information for the former occupants was not reasonably ascertainable or provided by the User.
Other(s)	No	Not applicable	Not applicable	No other relevant interviews were conducted as part of this Phase I ESA.

5.0 USER PROVIDED INFORMATION

The ASTM Standard defines a User as “the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager.” The User has specific obligations for completing a successful application of this practice as outlined in Section 6 of the ASTM Standard Practice E 1527-13.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the User must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

The following responses were provided by the User. A copy of the completed User Questionnaire is included in Appendix B.

Question	Response
Name of Preparer and User Entity	Mr. John Hindo; Boji Group, LLC
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?	No
Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	No
As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	No
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?	Yes
If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	Not applicable
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user:	
Do you know the past uses of the property?	No
Do you know of specific chemicals that are present or once were present at the property?	No
Do you know of spills or other chemical releases that have taken place at the property?	No
Do you know of any environmental cleanups that have taken place at the property?	No
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?	No

6.0 SUBJECT PROPERTY RECONNAISSANCE

Reconnaissance Information	
PM Field Personnel:	Ms. Devon Nagengast
Site Reconnaissance Date:	September 10, 2021
Escort:	No escort
Limitations:	PM was not provided access to portions of the subject building on the southeastern parcel (360-394 South Old Woodward Avenue) or the subject building located on the western parcel (294 East Brown Street) within the time constraints of this report. However, based on the known office and retail use, previous interior observations from the November 2020 site reconnaissance, and observations made through exterior windows, PM has not identified the lack of access as a data failure that represents a significant data gap.

6.1: Subject Property Observations

The northeastern parcel, 300 South Old Woodward Avenue, is developed with 4,300 square foot building, which is divided into lobby area, offices, open workspaces, conference rooms, breakrooms, mechanical/storage areas, restroom, and partial basement.

The southeastern parcel, 360-394 South Old Woodward Avenue, is developed with a 7,913 square foot building, which is divided into two tenant spaces. The tenant spaces are further divided into retail areas, offices, mechanical/storage areas, break room, cobbler repair area, restrooms, and partial basement.

The western parcel, 294 East Brown Street, is developed with a two-story, 13,290 square foot building. PM was not provided access to the building within the time constraints of this report. However, previous site reconnaissance observations document the building is divided into lobby area, offices, open workspaces, conference rooms, breakrooms, mechanical/storage areas, restroom, and full basement.

Interior finish materials generally include carpeting, ceramic floor tiles, 12 inch by 12 inch vinyl floor tiles, poured concrete floors, wood paneling walls, concrete block walls, drywall walls and ceilings, wood frame ceilings, metal deck ceilings, and suspended acoustical ceiling tiles.

Exterior pavement is present surrounding the subject buildings with paved parking areas in the central and eastern-central portions of the property. The remainder of the property contains groomed grass and landscaped areas.

The following table summarizes the site observations. Affirmative responses are discussed in more detail following the table.

Category	Feature	Observed
Interior Equipment	Elevators	Yes
	Air Compressors	Yes
	Incinerators	No
	Waste Treatment Systems	No
	Presses/Stamping Equipment	No
	Press Pits	No

**Phase I ESA Update of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan
PM Project No. 01-12660-0-0004; September 14, 2021**

Category	Feature	Observed
	Hydraulic Lifts or In-ground hoists	No
	Paint Booth	Yes
	Plating Tanks	No
	Lathes, Screw Machines, etc.	No
Aboveground Chemical or Other Waste Storage or Waste Streams	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > 5 gallons	No
	Chip Hoppers	No
	Hazardous or Petroleum Waste Streams	No
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground Storage Tanks	No
	Fuel Dispensers	No
	Sumps or Cisterns	Yes
	Dry Wells	No
	Oil/Water Separators	No
	Floor Drains, Trench Drains, etc.	Yes
	Pipeline Markers	No
Exterior Observations	Stressed Vegetation	No
	Stained Soil or Pavement	No
	Monitoring Wells	No
	Pad or Pole Mounted Transformers and/or Capacitors	Yes
	Soil Piles of Unknown Origin	No
	Exterior Dumpsters with Staining	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	No
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Storm water retention or detention ponds	No
	Pits, Ponds, Lagoons	No
	Oil and Gas Wells	No

Elevators: PM did not observe any elevators during the current site reconnaissance. However, PM previously observed one hydraulic lift elevator in the western building (294 East Brown Street) during the 2020 site reconnaissance, which was installed prior to 2010. PM was unable to determine the date of original installation. No visual indication of leakage was observed in the area of the elevator operating equipment. PM observed the most recent inspection logs dated from 2020, which documented no major leaks or equipment failures. The hydraulic elevator unit should be inspected periodically for leakage as part of the on-going maintenance activities. If leakage is identified, the unit should be repaired, and any fluid or fluid-soaked waste should be disposed of in accordance with applicable federal, state, and local regulations.

Air Compressors: PM observed an air compressor in the northern tenant space of the southeastern building (360-394 South Old Woodward Avenue), adjacent to cobbler and painting activities. The air compressor was in fair condition and staged on concrete that appeared to be in generally good condition. PM was unable to determine the age of the air compressor. No significant staining or evidence of poor waste management practices was observed associated with the air compressor. Based on the observed site conditions, PM has not identified the air compressor as a REC.

Paint Booths: PM observed painting, leather conditioning, and polishing activities conducted within make-shift tabletop paint booths in the northern tenant space of the southeastern building (360-394 South Old Woodward Avenue). Materials utilized during cobbler activities were stored within containers of less than five-gallon adjoining to the paint booths. PM observed limited staining near the paint booths; however, the floors within the vicinity appeared to be in generally good condition with no significant cracking and/or pitting observed. Based on the relatively small scale of painting activities and location aboveground/tabletop, PM has not identified the painting, leather conditioning, and polishing activities as a REC.

Sumps or Cisterns: PM observed sump pumps in the mechanical/storage areas in the basements of 300 and 360 South Old Woodward Avenue. Additionally, PM previously observed a sump pump in the basement in 294 East Brown Street. The sumps are reportedly utilized to prevent flooding. The sumps were observed to be covered with no evidence of poor waste management practices or staining. Based on the observed site conditions, PM has not identified the sumps as a REC.

Floor Drains, Trench Drains, etc.: PM observed circular floor drains in each basement of the subject buildings. No staining or evidence of poor waste management practices was observed associated with the drains. The drains likely discharge to the municipal sewer system.

Pad or Pole Mounted Transformers and/or Capacitors: The subject property is supplied with overhead secondary electrical service from two pole-mounted electrical transformers located northwest of the southeastern parcel (360-394 Old Woodward Avenue). The transformers are likely the property of the public utility and were not labeled regarding PCB content. No leakage of the transformers was observed at the time of the site reconnaissance.

6.2: Current Operations

The northeastern building, 300 South Old Woodward Avenue, is occupied by Lutz Financial Services and Gemini Risk Partners, and the western building, 294 East Brown Street, is occupied by Coldwell Banker Weir Manuel. Operations consist of general office activities. The southeastern building, 360-394 South Old Woodward Avenue, is occupied by Frank's Shoe Service and Roche Bobois (furniture store). Operations consist of retail sales and shoe repair (cobbler) activities.

6.3: Adjoining Property Observations

PM also completed a visual inspection of the adjoining properties from the subject property and public thoroughfares during the November 2020 site reconnaissance. A summary of the historical usages of the adjoining properties is included in the previous Phase I ESA.

The adjoining properties are generally occupied by various commercial, office, restaurant, and/or hotel operations. These observations of the adjoining properties concur with observations described within the December 2020 Phase I ESA report.

7.0 UPDATE OF RECORDS REVIEW

PM reviewed the following records to fill in data gaps and confirm no significant changes have been made on the subject property since the previous Phase I ESA was completed.

7.1: Local Assessing Department

Reasonably ascertainable assessment information provided by the City of Birmingham Assessing Department was obtained and reviewed. Assessing records document that the subject property consists of three parcels containing a total of 1.25 acres.

Assessing records document the northeastern parcel, identified as 300 South Old Woodward Avenue, contains 0.30 acres, and is developed with a 4,300 square foot building with partial basement, constructed in 1968. However, a historical field card and building sketch documents a portion of the building was constructed in 1945 with additions completed in 1954 and 1994. Records indicate the current building has been occupied by Lutz Real Estate Investments since at least 2012.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, contains 0.19 acres, and is developed with a 7,913 square foot building with partial basement, constructed in 1956. However, review of additional historical sources documents a portion of the current building was constructed in approximately 1929, with a southeastern addition completed between 1967 and 1974. A historical field card documents extensive interior renovation in 1993, including the removal of a false second story, and that the building was previously occupied by a theater.

The western parcel, identified as 294 East Brown Street, contains 0.76 acres, and is developed with a two-story, 13,290 square foot building with full basement, constructed in 1956. A historical field card documents extensive interior renovation in 1993 for professional offices.

Copies of available assessment records for the subject property and the current legal description are included in Appendix C.

7.2: Local Building Department

PM submitted a Freedom of Information Act (FOIA) request to the City of Birmingham Building Department to review records for the property since 2020. PM did not receive a response within the time constraints of this report. If a response is received and it changes the findings of this report, the client will be notified.

7.3: Local Fire Department

PM submitted a FOIA request to the City of Birmingham Fire Department to review records for the property since 2020. PM did not receive a response within the time constraints of this report. If a response is received and it changes the findings of this report, the client will be notified.

7.4: Environmental Liens, Activity and Use Limitations, and Government Institutional and Engineering Controls

PM has not identified any record of environmental liens, activity and use limitations, or institutional controls or engineering controls associated with the subject property through review of reasonable ascertainable records.

7.5: Regulatory File Review

PM retained EDR to provide current regulatory database information compiled by a variety of federal and state regulatory agencies. A copy of the complete database is included in Appendix D. The following information was obtained.

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	National Priority List (NPL) Sites	1 mile	0
Federal	Delisted National Priority List (DNPL) Sites	½ mile	0
Federal	Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Sites	½ mile	0
Federal	CERCLIS No Further Remediation Action Planned (NFRAP) Sites	subject property and adjoining properties	0
Federal	Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Sites	1 mile	0
Federal	RCRA non-CORRACTS Treatment, Storage or Disposal (TSD) Sites	½ mile	0
Federal	RCRA Large Quantity Generators (LQG) Sites	subject property and adjoining properties	0
Federal	RCRA Small Quantity Generators (SQG) Sites	subject property and adjoining properties	0
Federal	RCRA Very Small Quantity Generators (VSQG) Sites	subject property and adjoining properties	1
Federal	RCRA Non-Generators (NON-GEN) Sites	subject property and adjoining properties	0
Federal	US Brownfield Sites	½ mile	0
Federal	Institutional Control / Engineering Control Registries	subject property	0
Federal	Environmental Response and Notification System (ERNS)	subject property	0
State & Tribal	Hazardous Waste Sites (HWS) (equivalents to NPL and CERCLIS)	1 mile	0
State & Tribal	Delisted Hazardous Waste Sites (HWS)	1 mile	0
State & Tribal	Solid Waste Facilities/Landfill Sites (SWLF)	½ mile	0
State & Tribal	Historical Landfill Sites (HIST LF)	½ mile	0
State & Tribal	Leaking Underground Storage Tank (LUST) Sites	½ mile	17
State & Tribal	Registered Underground Storage Tank (UST) Sites	subject property and adjoining properties	1
State & Tribal	Institutional Control / Engineering Control Registries	subject property	0
State & Tribal	Brownfield Sites	½ mile	3
State	Michigan Inventory of Facilities (Includes Part 201 Sites and Baseline Environmental Assessment (BEA) Sites)	½ mile	58
Either	Unmappable Database Listings (a.k.a. Orphan Sites)	database-dependent	4

7.5.1: Subject Property and Occupant Listings

The subject property or its known occupants are not identified in the referenced databases.

7.5.2: Adjoining and Nearby Sites

PM's review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present an environmental risk to the subject property, PM considered the following criteria:

- The type of database on which the site is identified.
- The topographic position of the identified site relative to the subject property.
- The direction and distance of the identified site from the subject property.
- Local soil conditions in the subject property area.
- The known or inferred groundwater flow direction in the subject property area.
- The status of the respective regulatory agency-required investigation(s) of the identified site, if any.
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) located between the identified site and the subject property.

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional clarification are further evaluated. Using the referenced criteria, and based upon a review of readily available information contained within the regulatory database report, PM did not identify adjoining (i.e., bordering) or nearby sites (e.g., properties within a ¼-mile radius) listed in the regulatory database report that were judged to present a potential environmental risk to the subject property, with the exception of the following:

Essco of Birmingham LLC – This property is identified as 255 South Old Woodward Avenue and is the northeast adjoining property. Review of the regulatory database documents an occupant is a RCRA-VSQQ of hazardous waste with no reported violations. Review of available EGLE records document the occupant has generated waste since at least 2015 related to real estate property. No additional relevant information was documented. Based on the lack of reported violations, insufficient groundwater to act as a transport mechanism, and the distance of operations from the subject property (over 140 feet across East Brown Street and South Old Woodward Avenue), PM has not identified this property as a REC.

Green's Art Supply a.k.a. Former Gasoline Dispensing Station – This property is identified as 400 South Old Woodward Avenue and is the south adjoining property. Review of the regulatory database documents this property is a former UST site, Brownfield site, and BEA site. Review of available EGLE records document former USTs were removed and contaminated soil was excavated from the property. Verification soil remediation (VSR) samples were collected from the property following excavation activities. Analytical soil sample results document that impacted soil had been remediated to below Part 201 generic cleanup criteria. Based on this information, insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 50 feet across Daines Street), PM has not identified this property as a REC.

Weiss Samona and Woodward Brown Associates, LLC – This property is identified as 34901 Woodward Avenue and is located within one-eighth of a mile northeast. Review of the regulatory database documents this property is a US Brownfields site and a BEA site. Review of available EGLE records document the BEA was completed in 2010 and identified contamination above Part 201 generic cleanup criteria on the property. However, based on the insufficient groundwater to act as a transport mechanism and distance from the subject property (over 390 feet across multiple roadways), PM has not identified this property as a REC.

Jax Kar Wash #048 – This property is identified as 34745 Woodward Avenue and is located within one-eighth of a mile east. Review of the regulatory database documents this property is an open LUST site with one release reported in 2000 and BEA site. Review of available EGLE records document multiple site investigations were completed between 2001 and 2005, which document soil and groundwater contamination are present above Part 213 Risk Based Screening Levels (RBSLs), which has not been delineated towards the subject property. However, based on insufficient groundwater to act as a transport mechanism and distance from the subject property (over 285 feet across South Old Woodward Avenue), PM has not identified this property as a REC.

Estate Motors LTD – This property is identified as 464 South Woodward Avenue and is located within one-eighth of a mile south. Review of the regulatory database documents this property is a closed LUST site with two reported releases in 1991 and 1992, which were granted Type A and Type B closures in 1993 and 1994, respectively. Review of available EGLE records document metals remain on the property above Part 213 RBSLs. However, based on the low mobility of metals within soil, insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 220 feet across Daines Street), PM has not identified this property as a REC.

Brown Street Office Building – This property is identified as 200 East Brown Street and is located within one eighth of a mile west. Review of the regulatory database documents this property is a BEA site. Review of available EGLE records document soil contamination remains on-site above Part 201 cleanup criteria. Contamination was documented to be delineated towards the subject property. Based on this information, insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 200 feet), PM has not identified this property as a REC.

Additional properties within one-eighth of a mile northeast and east were identified in the regulatory database as LUST and BEA sites. However, based on distance considerations and insufficient groundwater to act as a transport mechanism, PM has not identified these properties as a REC.

8.0 FINDINGS, OPINIONS AND CONCLUSIONS

8.1: De Minimis Condition

A de minimis condition, as defined in the ASTM Standard, is a condition that generally does not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not RECs or CRECs. No de minimis conditions were identified during this assessment.

8.2: Significant Data Gaps

A data gap, as defined in the ASTM Standard, is a lack of or inability to obtain information required by the ASTM Standard despite good faith efforts by the environmental professional to gather such information. The environmental professional must then determine whether these gaps are significant. PM did not identify or encounter any instances of significant data gaps during the course of this ESA.

8.3: Historical Recognized Environmental Conditions (HRECs)

An HREC, as defined in the ASTM Standard, is a past release of hazardous substances or petroleum products that has occurred in connection with the subject property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the subject property to any required controls. PM has not identified any HRECs in association with the subject property.

8.4: Recognized Environmental Conditions (RECs)

We have performed a Phase I Environmental Site Assessment Update in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.1 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except the following:

- The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service and gasoline dispensing station operations between at least 1929 and 1967, and potentially until 1988. Based on review of a previous site investigation completed between 2020 and 2021, soil contamination exists on-site above the current Part 201 Residential and Nonresidential Generic Cleanup Criteria. Based on these analytical results, the subject property would be classified as a “facility,” as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended. Additionally, based on documented exceedances, a potential vapor intrusion concern exists at the property.

No adjoining and/or nearby RECs have been identified.

8.5: Controlled Recognized Environmental Conditions (CRECs)

A CREC, as defined in the ASTM Standard, is a recognized environmental condition (REC) resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. PM has not identified any CRECs in association with the subject property.

8.6: Recommendations

We have performed a Phase I Environmental Site Assessment Update in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.1 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except as listed in Section 8.5 of this report.

Site assessment activities documented in this report and the BEA completed by PM were adequate to assess the former uses of the property, and document the due care obligations. The necessary documentation has been provided to the User for submittal of the BEA to EGLE.

9.0 NON-ASTM SCOPE CONSIDERATIONS/BUSINESS ENVIRONMENTAL RISKS

PM has included a discussion of Non-ASTM Scope Considerations based upon industry standards and lender requirements. A Business Environmental Risk is defined as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.

Non-ASTM Item	Observations or Information
Potential Asbestos Containing Materials (ACMs)	<p>Based on PM's limited visual observations during the site reconnaissance, suspect ACMs identified included 12 inch by 12 inch vinyl floor tiles, drywall walls and ceilings, and suspended acoustical ceiling tiles. The materials appeared to be in good condition apart from limited damaged vinyl floor tiles. These materials should be sampled, and if found to be asbestos containing, should be repaired or removed by a licensed asbestos contractor in accordance with all applicable federal, state, and local regulations. Repair or removal operations should be supervised by an independent, third party industrial hygiene firm.</p> <p>Buildings constructed prior to, but no later than, 1980 with suspect asbestos containing building materials are required by Federal regulations to designate those materials as "Presumed Asbestos Containing Materials" in the absence of analytical data. As such, there are several Federal requirements the building owner must adhere to regarding notification and management of these materials in pre-1980 buildings. Additionally, in the future, a comprehensive asbestos survey should be completed prior to significant renovation or demolition activities.</p>

Lead Based Paint (LBP)	Based on the original construction of the subject buildings in 1929, 1945, and 1956 (pre-1978 when Federal regulations banned the use of LBP), there is the potential for existing paint to be lead based or contain lead. However, the painted surfaces were observed to be in generally good condition, the subject buildings are not of residential or child-occupied use, and there is no regulatory requirement for the owner to sample suspect painted building components at this time. Therefore, no further action is recommended regarding suspected lead in paint at the subject property. If a more definitive determination is preferred for outside contractor or maintenance activities that may disturbed painted building components, PM can provide a scope of work to address.
Visual Mold or Significant Moisture Damage	PM performed a limited visual assessment for the presence of mold, conditions conducive to mold, and evidence of moisture in readily accessible interior areas of the subject property. No significant suspect mold and/or evidence of moisture was observed, beyond the presence of very small quantities commonly found in locations such as frequently wet areas and stained ceiling tiles.

10.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Lauren Babuska
Project Consultant



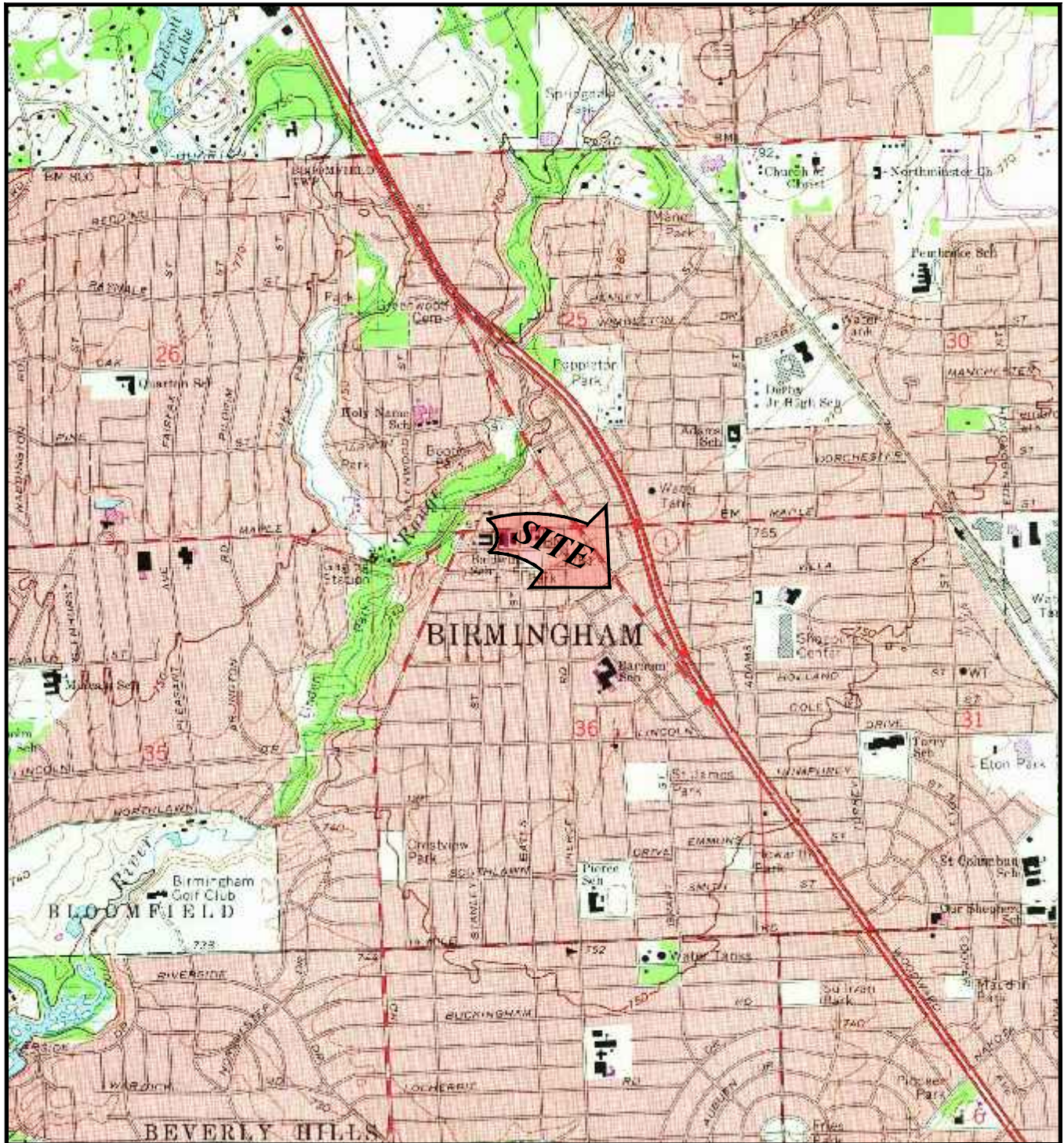
Beth Sexton
Chief Operating Officer

11.0 REFERENCES

The following published sources were utilized during completion of this Phase I ESA:

- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM International, ASTM Designation E 1527-13, Published November 2013.
- Phase I ESA, December 11, 2020, PM.
- Baseline Environmental Assessment, March 25, 2021, PM.
- Documentation of Due Care Compliance, March 25, 2021, PM.
- United States Geological Survey Division (U.S.G.S.) 7.5 Minute Topographic Map Birmingham, Michigan Quadrangle, 1968 (photo-revised 1981).

Figures

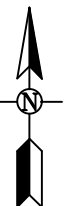


OAKLAND COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
BIRMINGHAM, MI QUADRANGLE, 1968. PHOTO REVISED 1981.

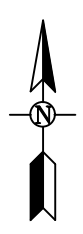
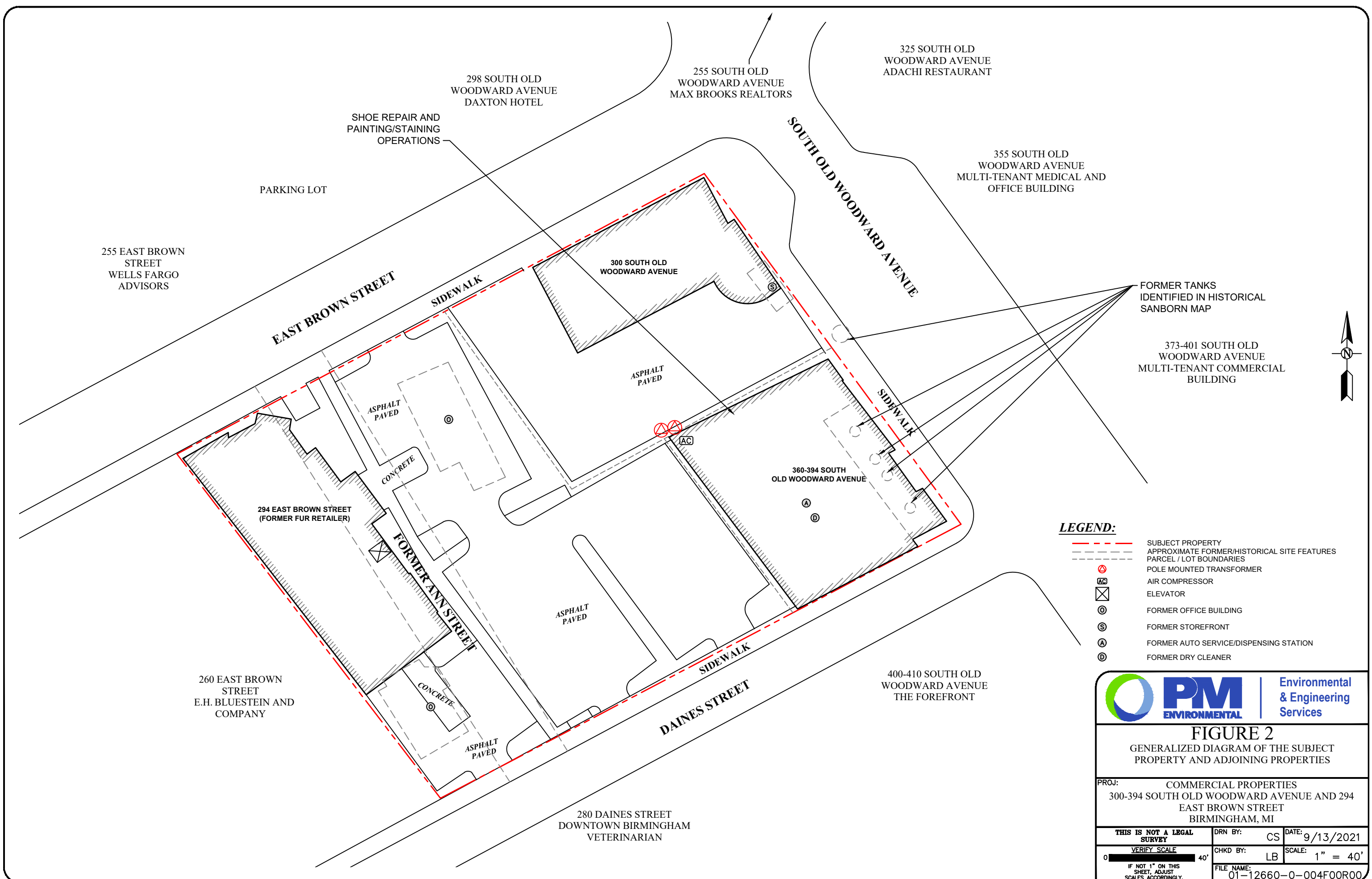


PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE
AND 294 EAST BROWN STREET
BIRMINGHAM, MI


THIS IS NOT A LEGAL
SURVEY

VERIFY SCALE
0 2,000'
IF NOT 1" ON THIS
SHEET, ADJUST
SCALES ACCORDINGLY.

DRN BY: CS	DATE: 9/13/2021
CHKD BY: LB	SCALE: 1" = 2,000'
FILE NAME: 01-12660-0-004F00R00	



- LEGEND:**
- SUBJECT PROPERTY
 - APPROXIMATE FORMER/HISTORICAL SITE FEATURES
 - PARCEL / LOT BOUNDARIES
 - POLE MOUNTED TRANSFORMER
 - AIR COMPRESSOR
 - ELEVATOR
 - FORMER OFFICE BUILDING
 - FORMER STOREFRONT
 - FORMER AUTO SERVICE/DISPENSING STATION
 - FORMER DRY CLEANER



PM
ENVIRONMENTAL

Environmental
& Engineering
Services

FIGURE 2
GENERALIZED DIAGRAM OF THE SUBJECT
PROPERTY AND ADJOINING PROPERTIES

PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE AND 294
EAST BROWN STREET
BIRMINGHAM, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 9/13/2021
VERIFY SCALE	CHKD BY: LB	SCALE: 1" = 40'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 01-12660-0-004F00R00		

Appendix A

SITE PHOTOS



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 1



The north facing wall of the northeastern subject building, 300 South Old Woodward Avenue

Photograph 2



The east facing wall of the northeastern subject building, 300 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 3



The south facing wall of the northeastern subject building, 300 South Old Woodward Avenue

Photograph 4



A typical office in 300 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 5



A typical conference room in 300 South Old Woodward Avenue

Photograph 6

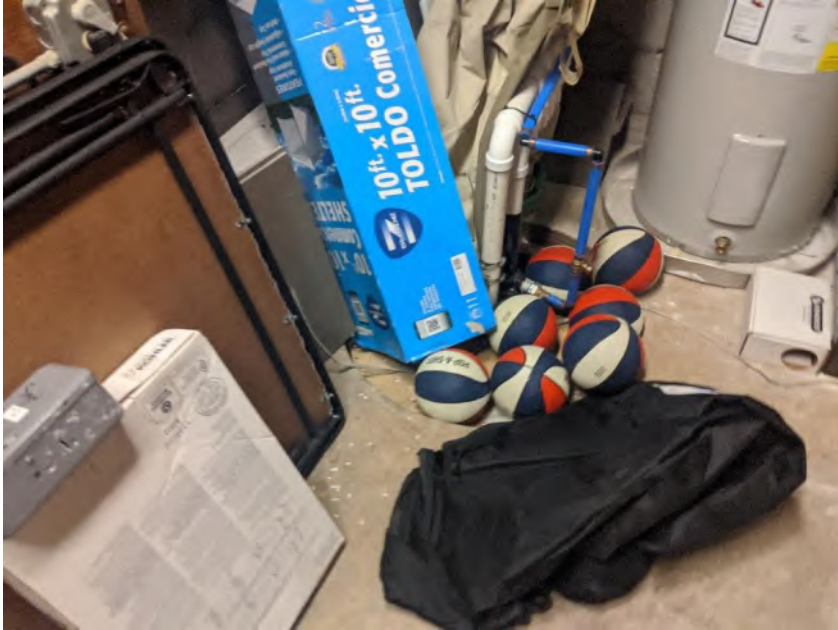


The basement in 300 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 7



The mechanical room and sump in the basement of 300 South Old Woodward Avenue

Photograph 8



The east facing wall of the southeastern subject building, 360-394 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 9



The east facing wall of the southeastern subject building, 360-394 South Old Woodward Avenue

Photograph 10



The south facing wall of the southeastern subject building, 360-394 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 11



The retail area in 360 South Old Woodward Avenue

Photograph 12



Shoe repair area in 360 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 13



Shoe repair area in 360 South Old Woodward Avenue

Photograph 14



Painting and staining booth along the northern interior wall of 360 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 15



The air compressor in the northwestern portion
of 360 South Old Woodward Avenue

Photograph 16



The basement in 360 South Old Woodward
Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 17



The sump in the basement in 360 South Old Woodward Avenue

Photograph 18



A typical floor drain in the basement of 360 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 19



The retail area in 394 South Old Woodward Avenue

Photograph 20



The retail area in 394 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 21



The north facing wall of the western subject building, 294 East Brown Street

Photograph 22



The east facing wall of the western subject building, 294 East Brown Street



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 23



The west facing wall of the western subject building, 294 East Brown Street

Photograph 24



The pole-mounted transformers located northwest of the southeastern subject building, identified as 360-394 Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 25



The north adjoining property, 298 South Old Woodward Avenue

Photograph 26



The northeast adjoining property, 255 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 27



The northwest adjoining property, 255 East Brown Street

Photograph 28



The east adjoining property, 355 South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 29



The northeast adjoining property, 325 South
Old Woodward Avenue

Photograph 30



The southeast adjoining property, 373-401
South Old Woodward Avenue



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 31



The south adjoining property, 400-410 South
Old Woodward Avenue

Photograph 32



The southwest adjoining property, 280 Daines
Street



Photographs From Site Reconnaissance
PM Project No 01-12660-0-0004
Location: 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan

Photograph 33



The west adjoining property, 260 East Brown Street

Appendix B

PREVIOUS SITE INVESTIGATION



Environmental & Engineering Services Nationwide



ENVIRONMENTAL SERVICES

BUILDING ARCHITECTURE,
ENGINEERING & SCIENCE

INDUSTRIAL HYGIENE SERVICES

BROWNFIELDS & ECONOMIC
INCENTIVES CONSULTING

PHASE I ENVIRONMENTAL SITE ASSESSMENT

300-394 South Old Woodward Avenue and
294 East Brown Street | Birmingham, Michigan
PM Project Number 01-12660-0-0001

Prepared for:

Boji Group, LLC
124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

Prepared by:

PM Environmental, Inc.
4080 West Eleven Mile Road
Berkley, Michigan 48072

Know Your Risk.
Take Control.
Work with the Experts.

www.pmenv.com

December 11, 2020

Mr. John Hindo
Boji Group, LLC
124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

**Re: Phase I Environmental Site Assessment of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 East Brown Street, Birmingham, Michigan
PM Environmental, Inc. Project No. 01-12660-0-0001**

Dear Mr. Hindo:

PM Environmental, Incorporated (PM) has completed the Phase I Environmental Site Assessment (ESA) of the above referenced property. This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

The Phase I ESA for the above referenced property represents the product of PM's professional expertise and judgment in the environmental consulting industry, and it is reasonable for **BOJI GROUP, LLC** to rely on PM's Phase I ESA report.

If you have any questions related to this report, please do not hesitate to contact our office at 248.336.9988.

Sincerely,
PM ENVIRONMENTAL, INC.



Lauren Babuska
Project Consultant



Beth Sexton
Chief Operating Officer

EXECUTIVE SUMMARY

PM Environmental, Inc., (PM) was retained to conduct a Phase I Environmental Site Assessment (ESA) of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan (hereafter referred to as the “subject property”). This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries (AAI), 40 CFR Part 312 and (2) guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF BOJI GROUP, LLC, WHO MAY RELY ON THE REPORT’S CONTENTS.

Item	Comments		
Number of Parcels and Acreage	Three parcels totaling 1.25 acres		
Parcel Identifier in this report, Parcel Address, and Number of Building(s) and Square Footage per Parcel	Northeastern Parcel	300 South Old Woodward Avenue	4,300 square foot single-story building with partial basement
	Southeastern Parcel	360-394 South Old Woodward Avenue	7,913 square foot single-story building with partial basement
	Western Parcel	294 East Brown Street	13,290 square foot two-story building with basement
Current Property Use	Operations on the northeastern and western parcels consist of general office activities. Operations on the southeastern parcel consist of retail sales and shoe repair activities.		

Reasonably ascertainable records for the subject property extended back to approximately 1921. Data failure occurred prior to that date. However, PM did not identify any significant data gaps during the completion of this Phase I ESA.

The following paragraphs provide historical summaries for each subject parcel. Recognized environmental conditions (RECs) identified as discussed in that section later in this summary. Former potential operations of concern and unknown operations that have not been identified as a REC are discussed in this section for clarification.

Standard and other historical sources document the northeastern parcel, identified as 300 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and shed structure. A small storefront building was constructed in the eastern portion of the parcel between 1926 and 1931. The dwelling and shed structure were demolished by 1945 when the northern portion of the current building was constructed in the same area of the parcel. The small storefront building was demolished by 1949. The southern addition of the current building was completed in 1954 and additional southeastern addition was completed in 1994. The building was labeled as a storefront in the 1949 Sanborn map, with a used car sales operation depicted south of the building. Based on local street directories documenting the southeastern parcel being occupied by a dealership, it is likely that the used car sales operations were for the dealership / surface lot and not associated with the current building. The building has been occupied by various professional offices since at least 1951.

PM was unable to determine the occupants of the former small storefront building (constructed between 1926 and 1931 and demolished by 1949) or the occupants of the current building from construction in 1945 until 1951 when first known office use was identified. Based on the relatively small scale and short timeframe of former operations, PM has not identified the unknown operations as a REC. Additionally, PM has not identified the former automotive sales lot on the property as a REC.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and garage structure. The former dwelling was converted to a storefront by 1926. PM was unable to confirm the operations of the former storefront building on the property between at least 1926 and 1929. However, based on the small scale and short timeframe of operations, PM has not identified the unknown operations as a REC.

The southeastern parcel was redeveloped in approximately 1929 with a majority of the current building, occupied by an automotive service operation and gasoline dispensing station, with at least four USTs located along South Old Woodward Avenue. Gasoline dispensing operations ceased at some time between 1960 and 1970 and an addition to the service building was completed in the area of former dispensing operations between 1967 and 1974. The building was occupied by automotive service operations until at least 1967. The building was divided into multiple tenant spaces during at least the late-1960s and occupied by a theater between at least 1966 and 1986, automotive sales with potential service operations between at least 1980 and 1988, a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976, automotive sales in the mid-2000s, and Frank's Shoe Service and additional retail operations since at least 1969. Cobbler activities (Frank's Shoe Service) include shoe repair, painting, leather conditioning, and polishing. Based on the small scale of operations and lack of waste generated, PM has not identified the cobbler activities as a REC.

The western parcel, identified as 294 East Brown Street, was developed prior to 1921 with two dwellings in the western portion and a former roadway (Ann Street), transecting the parcel from north to south. An additional dwelling was constructed in the northeastern portion of the parcel between 1926 and 1931. A former dwelling in the northwestern portion was demolished and a majority of the current building was constructed in 1956. The former northeastern and remaining western dwellings were converted for office use. The former converted dwellings / office buildings were demolished, the southern addition was completed on the current building, and the former roadway was closed between 1967 and 1974. The current building was occupied by various offices, retail sales, or salons between 1958 and 1971, Chudik's Furs between at least 1970 and 1991, and various professional offices since at least 1998.

The following table summarizes the conditions identified as part of this assessment. Affirmative answers are further discussed below the table:

Type of Condition	Identified During the Course of this Assessment
De Minimis Condition	No
Significant Data Gap	No
Historical Recognized Environmental Condition (HREC)	No
Recognized Environmental Condition (REC)	Yes
Controlled Recognized Environmental Condition (CREC)	No

Type of Condition	Identified During the Course of this Assessment
Significant Non-ASTM Scope Considerations and/or Business Environmental Risks	No

Recognized Environmental Condition

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except the following:

- The current building on the southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property.
- The southeastern parcel was historically occupied by a gasoline dispensing station between at least 1929 and the 1960s. Review of available records document at least four underground storage tanks (USTs) associated with these operations. A gasoline tank was also depicted east of this parcel, in the South Old Woodward Avenue right of way in the 1926 Sanborn map. Available City of Birmingham Fire Department records document the removal of five abandoned USTs from the property in 1970. No additional information on the condition of the USTs upon removal or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s).

- The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations.
- The current building on the western parcel, identified as 294 East Brown Street, was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning operations between at least 1970 and 1991. In PM's experience, fur retailers commonly have repair and cleaning operations that involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Reasonably ascertainable City of Birmingham Fire Department records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted on-site. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination.

No adjoining and/or nearby RECs have been identified.

Recommendations

These RECs have been brought to the attention of the client within the requirements of the ASTM Standard Designation E 1527-13.

PM is concurrently completing a Phase II ESA to investigate the RECs identified, which will be provided under separate cover.

The summary presented above is general in nature and should not be considered apart from the entire text of the report, which contains the qualifications, considerations and subject property details mentioned herein. Details of findings and conclusions are elaborated upon in this report.

This report has been reviewed for its completeness and accuracy. Please feel free to contact our office at 248.336.9988 to discuss this report.

REPORT PREPARED BY:
PM Environmental, Inc.



Lauren Babuska
Project Consultant

REPORT REVIEWED BY:
PM Environmental, Inc.



Beth Sexton
Chief Operating Officer

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FIGURES

Figure 1: Property Vicinity Map

Figure 2: Generalized Diagram of the Subject Property and Adjoining Properties

APPENDICES

Appendix A: Property Photographs from Site Reconnaissance

Appendix B: Correspondence and Supporting Documentation

Appendix C: Previous Site Investigations

Appendix D: Regulatory Database and File Review Correspondence

Appendix E: Professional Resumes

Appendix F: Acronyms and Terminology, Scope of Work, ASTM Reference Document, and User's Continuing Obligations under CERCLA

1.0 INTRODUCTION

This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) International in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF BOJI GROUP, LLC, WHO MAY RELY ON THE REPORT'S CONTENTS.

PM acknowledges that this party may rely on the contents and conclusions presented in this report. Unless stated otherwise in writing, PM makes no other warranty, representation, or extension of reliance upon the findings of this report to any other entity or third party.

1.1: Property Overview

Subject Property Location/Address	300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan		
Number of Parcels and Acreage	Three parcels totaling 1.25 acres		
Parcel Identifier in this report, Parcel Address, and Number of Building(s) and Square Footage per Parcel	Northeastern Parcel	300 South Old Woodward Avenue	4,300 square foot single-story building with partial basement
	Southeastern Parcel	360-394 South Old Woodward Avenue	7,913 square foot single-story building with partial basement
	Western Parcel	294 East Brown Street	13,290 square foot two-story building with basement
Current Property Use	Operations on the northeastern and western parcels consist of general office activities. Operations on the southeastern parcel consist of retail sales and shoe repair activities.		
Current Zoning	B-1: Neighborhood Business		

The subject property location is depicted on Figure 1, Property Vicinity Map. A diagram of the subject property and adjoining properties is included as Figure 2, Generalized Diagram of the Subject Property and Adjoining Properties. Photographs taken during the site reconnaissance are included in Appendix A.

1.2: Purpose and Scope of Services

The purpose of this Phase I ESA was to evaluate the current and historical conditions of the subject property in an effort to identify *recognized environmental conditions* (RECs), *controlled recognized environmental conditions* (CRECs), and *historical recognized environmental conditions* (HRECs) in connection with the subject property. This Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs, CRECs, and HRECs in connection with the subject property.

Acronyms and terms used in this report are described in Appendix F. Additionally, PM's scope of services is included in Appendix F.

1.3: Significant Assumptions

Pursuant to ASTM Standard Practice E 1527-13, PM assumes that the information provided by all sources and parties, including the User, is accurate and complete, except where obvious inconsistencies or inaccuracies were identified.

1.4: Limitations, Deviations, and Special Terms and Conditions

There are no deviations from the ASTM Standard. Non-ASTM Scope considerations are included in Section 11.0. Any physical limitations identified during the completion of this report are referenced in Section 7.0.

Due to changing environmental regulatory conditions and potential on-site or adjacent activities occurring after this assessment, the client may not presume the continuing applicability to the subject property of the conclusions in this assessment for more than 180 days after the report's issuance date, per ASTM Standard Practice E 1527-13.

To the best of PM's knowledge, no special terms or conditions apply to the preparation of this Phase I ESA that would deviate the scope of work from the ASTM Standard Practice E 1527-13.

PM was not provided with a copy of the recorded land title records for subject property by the client and was not requested to complete a title search. Therefore, PM cannot comment on any potential relevant information that may have been obtained through review of these records.

2.0 USER PROVIDED INFORMATION

The ASTM Standard defines a User as "the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager." The User has specific obligations for completing a successful application of this practice as outlined in Section 6 of the ASTM Standard Practice E 1527-13.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the User must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

The following responses were provided by the User. A copy of the completed User Questionnaire is included in Appendix B.

Question	Response
Name of Preparer and User Entity	Mr. John Hindo; Boji Group, LLC
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?	No
Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	No

Question	Response
As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	No
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?	Yes
If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	Not applicable
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user:	
Do you know the past uses of the property?	No
Do you know of specific chemicals that are present or once were present at the property?	No
Do you know of spills or other chemical releases that have taken place at the property?	No
Do you know of any environmental cleanups that have taken place at the property?	No
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?	No

2.1: Recorded Land Title Records

PM requested reasonably ascertainable recorded land title records for the subject property from the User. However, PM did not receive any title records from the User within the time constraints of this report. Additionally, PM was not requested to complete a title search by the User. PM did review available environmental lien and activity and use limitations for the subject property, which are further discussed in Section 4.10. Based upon the information reviewed as part of this Phase I ESA, PM has not identified the lack of provided land title records as a data failure that represents a significant data gap.

2.2: Reason for Performing this Phase I ESA

According to the User, this Phase I ESA was conducted as part of environmental due diligence related to purchasing the subject property.

3.0 PHYSICAL SETTING

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		SOURCE
Topography: Refer to Figure 1 for an excerpt of the Topographic Map		
Site Elevation	768 feet above mean sea level (msl)	United States Geological Survey Division (U.S.G.S.) 7.5-Minute Topographic Map of the Birmingham, Michigan Quadrangle, 1968 (photo revised in 1981)
Topographic Gradient	South-southeast	
Closest Surface Water	Rouge River located 1,940 feet northwest and 2,900 feet west at an elevation of approximately 740 to 720 feet above msl, respectively	
General Soil Characteristics: Refer to Appendix B for a copy of the custom soil survey		
Soil Type	Udorthents and Udipsamments, nearly level to hilly	United States Department of Agriculture, Custom Soil Resource Report for Oakland County, Michigan (survey area data: June 1, 2020)
Description	<p>A typical Udorthents soil profile consists of silt loam to 8.0 inches below ground surface (bgs), underlain by clay loam to 80.0 inches bgs. The soil is well drained with a depth to the water table of more than 80.0 inches bgs. The risk of corrosion is moderate for uncoated steel and low for concrete.</p> <p>A typical Udipsamments soil profile consists of fine sandy loam to 4.0 inches bgs, loamy fine sand to 30.0 inches bgs, underlain by gravelly loamy fine sand to 80.0 inches bgs. The soil is well drained with a depth to the water table of more than 80.0 inches bgs. The risk of corrosion is low for uncoated steel and concrete.</p>	
Area Specific Geology/Hydrogeology Characteristics		
Geology	Geology generally consists of sand to between 2.0 feet and 5.0 feet bgs, underlain by stiff clay to at least 20.0 feet bgs, the maximum depth explored. In addition, a sand seam was encountered at approximately 12.0 feet bgs	Previous site investigations on the south adjoining property (June 2014-August 2016)
Hydrogeology	Limited, perched, discontinuous groundwater was encountered at approximately 12.0 feet bgs where a sand seam was encountered. Groundwater flow direction was not calculated.	
Oil and Gas Wells		
Current Oil and Gas Wells on Subject Property	None identified	Michigan Department of Environment, Great Lakes, and Energy (EGLE) Geologic Survey Division (GSD) web site
Historical Oil and Gas Wells on Subject Property	None identified	

4.0 RECORDS REVIEW

PM reviewed reasonably ascertainable records to identify obvious uses of the subject property from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. Reasonably ascertainable records reviewed as part of this Phase I ESA documented the use of the property back to 1921. Data failure occurred prior to that date. In PM's professional opinion, this data failure does not represent a significant data gap.

4.1: Aerial Photographs and Sanborn Maps

PM reviewed reasonably ascertainable aerial photographs for the subject property area. The sources and years reviewed are identified in the table below. Relevant aerial photographs are included in Appendix B.

PM reviewed reasonably ascertainable Sanborn Fire Insurance Maps for the subject property area, which were obtained from EDR. The sources and years reviewed are identified in the table below. Relevant Sanborn Maps are included in Appendix B.

The following table summarizes the sources reviewed and the information obtained about the subject property from these sources. Information obtained about the adjoining properties from these sources is summarized in Section 8.0.

Aerial Photographs and Sanborn Maps Summary

Year and Source	Summary of Information
1921 Sanborn Map (EDR)	Four dwellings and three shed or garage structures are depicted across the property. Ann Street (no longer present) intersects the western parcel from north to south. East Brown Street is depicted north, South Old Woodward Avenue (identified as South Woodward Avenue) is depicted east, and Daines Street is depicted south of the property.
1926 Sanborn Map (EDR)	A previously identified dwelling in the southeastern portion is currently identified as a storefront, and additional sheds are depicted in the eastern and western portions. A gasoline tank (of unknown capacity) is depicted in the western portion of South Old Woodward Avenue right of way, directly adjoining to the subject property. The remainder generally appears similar to the previous Sanborn year.
1931 Sanborn Map (EDR)	The previously identified storefront in the southeastern portion and previously identified gasoline tank within the right of way are no longer depicted. A majority of the current building, occupied by automotive service and filling station with four storage tanks along South Old Woodward Avenue, is depicted in the southeastern portion. An additional dwelling is depicted in the northern-central portion. The remainder appears similar to the previous Sanborn year.
1940 Aerial (Oakland County)	Due to scale and resolution, definitive details could not be identified. However, a majority of the current building in the southeastern portion is visible.
1949 Sanborn Map (EDR)	Previously identified sheds/garages and a northeastern dwelling are no longer depicted. A portion of the current building in the northeastern portion is depicted as a storefront with used automotive sales labeled south of the building. PM was unable to determine through review of the Sanborn map whether the labeling is related to the occupant of the building or for the surface lot to the south. The remainder appears similar to the previous Sanborn year.

Phase I ESA of the Commercial Properties
Located at 300-394 South Old Woodward Avenue, Birmingham, Michigan
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Year and Source	Summary of Information
1952 Aerial (WSU)	A portion of the current northeastern building and majority of the current southeastern building are visible on the northeastern and southeastern parcels. A paved parking lot is visible south of the northeastern building. Three dwellings are visible in the northern-central and western portions with a roadway intersecting the western parcel from north to south. Appears similar to the previous Sanborn year.
1957 Aerial (WSU)	A previously identified dwelling in the northwestern portion is no longer visible and a majority of the current western building is visible. A southern addition is visible on the current northeastern building. The remainder appears similar to the previous aerial and Sanborn years.
1960 Sanborn Map (EDR)	Previously identified dwellings in the northern-central and southwestern portions are identified as offices. The current northeastern building is identified as an office with parking lot south of the building. Previously identified storage tanks are no longer depicted in the southeastern portion and the current southeastern building is identified as vacant. The current western building is divided into three storefronts. The remainder appears similar to the previous aerial and Sanborn years.
1961 Aerial (MSU)	Similar to the previous aerial and Sanborn years.
1963 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
1967 Aerial (WSU)	Similar to the previous aerial and Sanborn years.
1974 Aerial (Oakland County)	The previously identified office buildings in the northern-central and southwestern portions are no longer visible. The former Ann Street roadway transecting the western parcel appears to be closed and a paved parking lot is visible in the central portion. A southeastern addition is visible on the current southeastern building and a southern addition is visible on the current western building. The remainder appears similar to the previous aerial and Sanborn years. Generally, appears similar to the current layout.
1980 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
1990 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
1997 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
2000 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
2005 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
2010 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
2015 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.
2017 Aerial (Oakland County)	Similar to the previous aerial and Sanborn years.

A summary of this information along with other historical sources is included in Section 6.0.

4.2: Local Street Directories

Reasonably ascertainable local street directories for Birmingham, Michigan were researched. Directories were available from 1937 to 2014. Directories were researched in at least five-year increments, when available. It should not be construed that the earliest date represented is the initial date of occupancy. Additionally, PM reviewed historical address directory listings for the subject property along Brown Street, former Ann Street, and Daines Street, which were identified on Sanborn maps. No pre-1937 historical addresses along South Old Woodward Avenue were identified. Relevant historical address listings are included below, all additional historical addresses associated with the subject property were either not listed or residential.

Subject Property: 300-394 South Old Woodward Avenue

300 South Old Woodward Avenue

2014	Capital Title Lutz Financial Services
2013	Capital Title Lutz Financial Services
	Real Estate Offices
2012-2011	Capital Title Real Estate Offices
2008-1998	Real Estate Offices
1990-1989	Real Estate Offices Law Office
1987-1973	Real Estate Offices
1971-1937	Not Listed

344 South Old Woodward Avenue

2014-1989	Not Listed
1987-1986	Kojaian Construction
1984-1937	Not Listed

350 South Old Woodward Avenue

2014-2011	Not Listed
2008	Demery Company
2006-1937	Not Listed

360 South Old Woodward Avenue

2014-1978	Frank's Shoe Service
1976-1969	Frank's Shoe Service Moore Cleaners
1967-1966	Jack Lawrie Service BoJax Collision Service White Automotive Service
1961-1960	Not Listed
1958-1957	Goldhar Zimmer, Inc.

1955-1944 Jess McNeal, Inc. automotive repair
 1940-1937 Winningham Chevrolet Company

394 South Old Woodward Avenue

2014-2011 Not Listed
 2008-2004 The Motorcar Gallery, Inc.
 2002-1989 Not Listed
 1988-1986 The Car Emporium
 Executive Import
 Executive Motor
 1985-1981 Sport Cars of BHM
 1978-1966 Studio 4 Theater
 1961-1937 Not Listed

Subject Property: 286-294 East Brown Street

286 East Brown Street

2014-1974 Not Listed
 1971-1970 Fred Stickel Arc
 1966-1965 Mart Agency, Inc.
 Herb Ring Jewelry
 Sutton Associates
 Robinson Architect
 Stickel & Associates
 Benjamin Adv
 Elmore Leonard, Inc.
 Lewco Products Company
 Asphalt Seal Coating
 Anaconda Aluminum
 1962-1961 Stickel & Associates
 Brady Placement Service
 Herb Ring Jewelry
 Oakland City Medical Soc
 Robinson Architecture
 Robinson JFG Division
 Pulva Corporation
 Vapor Recovery
 Dean Bros Pump, Inc.
 Angell Manufacturing Company
 1959-1958 Anthony Moody Architecture
 Stickel & Associates
 Ring Distinctive Jewelry
 Brady & Associates
 Knickerbocker & Associates
 1955-1937 Not Listed

292 East Brown Street

2014-1989	Not Listed
1984-1974	No Phone
1971-1970	Leon & Merlin Hair Leon's Beauty Shop
1966-1965	Leon's Beauty Shop
1962-1961	Leon's Beauty Shop Young Peoples Studio
1959-1958	Authentic, Inc. Leon's Hairdresser
1955-1937	Residential

294 East Brown Street

2014-2013	Attorneys Title Agency
2008-1998	Century 21 Town & Country
1994-1993	Not Listed
1989-1970	Chudik Fine Furs & Apparels
1966-1937	Not Listed

Historical East Brown Street Addresses: 310-312 East Brown Street

310 East Brown Street

2014-1961	Not Listed
1959-1958	Slim Zelle, Inc.
1955-1937	Not Listed

312 East Brown Street

2014-1970	Not Listed
1966-1965	Convertors, Inc. Chamberlain Plumbing & Heating Safeguard Systems Mass Marketing Dist Mojonnier Bros Company Leonard Bros Van Blackstretch Magazine United Thoroughbred Witco Chemical Company Corning Glass Works Patrick & Company Peterson & Son R&C Appliance Service Ted Moore Heating Royal TV Service Company Gardner Pubcns Modern Machine Magazine Products Finishing MG

	Park Nameplate Company
	Nationwide Bus Firm
	Campbell Construction Company
1962-1961	Schermerhorn Bros
	Midwest Tele Sec SE
	Witherspoon Construction
	S&W Water Softener
	Louis Dow Company
	Signal Stat Corporation
	Cranbrook Pres Inc
	TV Doctor
	Burton Abstract Company
	Oberti Bros
	Louis Overti Building
	Ted Moore Heating
1959-1958	Building Service Center
1955-1937	Residential

Historical Daines Street Address: 283 Daines Street

2014-1998	Not Listed
1994-1970	No Phone
1966-1965	DC Nolta Insurance Agency
	Income Security Agency
1962-1961	DC Nolta Insurance Agency
	National Homes
1959-1954	Residential
1953-1952	Not Listed
1951-1937	Residential

A summary of this information along with other historical sources is included in Section 6.0.

PM also reviewed listings for adjoining commercial properties. Information from the listings reviewed is included in Section 8.0.

4.3: Assessing Department

Reasonably ascertainable assessment information provided by the Oakland County Equalization Department was obtained and reviewed. Assessing records document that the subject property consists of three parcels containing a total of 1.25 acres.

Assessing records document the northeastern parcel, identified as 300 South Old Woodward Avenue, contains 0.30 acres, and is developed with a 4,300 square foot building with partial basement, constructed in 1968. However, a historical field card and building sketch documents a portion of the building was constructed in 1945 with additions completed in 1954 and 1994. Records indicate the current building has been occupied by Lutz Real Estate Investments since at least 2012.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, contains 0.19 acres, and is developed with a 7,913 square foot building with partial basement, constructed in

1956. However, review of additional historical sources documents a portion of the current building was constructed in approximately 1929, with a southeastern addition completed between 1967 and 1974. A historical field card documents extensive interior renovation in 1993, including the removal of a false second story, and that the building was previously occupied by a theater.

The western parcel, identified as 294 East Brown Street, contains 0.76 acres, and is developed with a two-story, 13,290 square foot building with full basement, constructed in 1956. A historical field card documents extensive interior renovation in 1993 for professional offices.

Copies of available assessment records for the subject property and the current legal description are included in Appendix B.

4.4: Building Department

PM submitted a Freedom of Information Act (FOIA) request to the City of Birmingham Building Department to review records for the subject property. Despite numerous follow-up attempts, PM did not receive a response within the time constraints of this report. If PM does receive a response, and it changes the findings of the report, the client will be notified.

4.5: Fire Department

PM submitted a FOIA request to the City of Birmingham Fire Department to review records for the subject property. PM received a written response with available records.

Available fire records for the northeastern parcel, identified as 300 South Old Woodward Avenue, document the building was occupied by Brook Real Estate between at least 1951 and 1989. A 1951 inspection record and sketch document the building was utilized for offices and was connected to natural gas with gas furnaces located in the partial basement. No additional relevant information was included in the records provided.

Available fire records for the southeastern parcel, identified as 360-394 South Old Woodward Avenue, indicate the property was occupied by LaDue Oil Station in at least April 1929 and that four 1,000-gallon tanks were installed at the property. Overwriting indicate the former tanks were removed from the property in July 1970 prior to construction (likely of the building addition). A 1970 Plan Review Record indicates the property was to be redeveloped with a 386-seat theater (Studio IV Theatre). The Plan Review Record indicates that five tanks were removed from the Woodward Avenue side of the property in July 1970. Fire records document the southeastern parcel was occupied by a theater until at least 1986, and various automotive sale operations between at least 1980 and 1988 with noted garage work and repair areas in at least 1982. Refer to Section 4.8 for additional information on former tanks at the subject property.

Available fire records for the western parcel, identified as 294 East Brown Street, document a 1973 permit to erect a tent for use by Chudik Furs, Inc. Records document the building was occupied by Chudik Furs between at least 1973 and 1991 with a sewing room, bridal room, and work room with paint cabinet. Fire inspections between 1993 and 2010 document the building was occupied by professional offices during that date range.

Copies of relevant fire records are included in Appendix B.

4.6: Health Department

PM submitted a FOIA request to the Oakland County Health Division to review records for the subject property. PM received a written response from a representative of the division indicating no files were available for the subject property.

4.7: Utilities

4.7.1: Municipal Water/Water Wells

The subject property is currently connected to municipal water. PM attempted to obtain initial tap information from the City of Birmingham Department of Public Services; however, a response was not received within the time constraints of this report. Review of Sanborn maps indicates municipal water has been available to the subject property since at least 1910. Based upon this information and the highly developed location, the former residential structures were likely connected to municipal water in 1910 or within several years of availability, and potentially utilized private water wells prior to availability of municipal water. All current structures were likely connected to municipal water during construction. Based on the lack of current use, PM has not identified the potential former water wells as a REC.

4.7.2: Sanitary Sewer/Septic System

The subject property is currently connected to municipal sewer. PM attempted to obtain initial tap information from the City of Birmingham Department of Public Services; however, a response was not received within the time constraints of this report. Review of Sanborn maps indicates municipal water has been available to the subject property area since at least 1910. Municipal sewer has likely been available since municipal water availability; therefore, the former residential structures were likely connected to municipal sewer in 1910 or within several years of availability, and potentially utilized private septic field prior to municipal sewer availability. All current structures were likely connected to municipal sewer during construction. Based on the residential use of the property prior to known municipal sewer availability, PM has not identified the potential former septic fields as a REC.

4.7.3: Heat Source

The subject property is connected to natural gas, which is supplied by Consumers Energy. Review of the Consumers Energy SIMS website indicates parcels were connected to natural gas in 1929, 1946, and 1956, which is consistent initial construction dates for current buildings. No historical tap records were available for review for former structures, and original gas mains have been retired with no documentation of when originally installed. No alternative heat sources have been identified through review of reasonably ascertainable information.

PM was unable to determine the heat source for the former dwellings on the subject property prior to natural gas availability. No documentation of fuel oil use was identified during review of reasonably ascertainable records, and no visual evidence of fuel oil use was identified during the site reconnaissance. There is the potential for a fuel oil AST or UST to have been used at the property and for a release to have occurred. However, based upon PM's experience, the risk of a release associated with a potential fuel oil UST is low. If a fuel oil UST is discovered in the future and/or evidence of a release of historical fuel oil is identified, further evaluation may be necessary.

4.8: Underground Storage Tank (UST) Systems

Review of reasonably ascertainable standard and other historical sources, and site observations, have not identified the current presence of USTs on the subject property. Specifically, no records of active USTs were identified though review of reasonably ascertainable records and PM did not observe any evidence of USTs (i.e. fill ports, vent pipes, etc.) during the site reconnaissance. Additionally, the representatives of the current owners indicated they had no knowledge of current USTs associated with the subject property.

The southeastern parcel of the subject property, 360-394 South Old Woodward Avenue, contained at least four former USTs, with a potential fifth or sixth UST in the right-of-way for South Old Woodward Avenue. The following table indicates the size of the UST, contents, location (if known), the dates of installation and removal, and the source of the information.

Historical UST Information

Size	Contents	Location	Date Installed	Date Removed	Source
1,000-gallon	Unknown	Southeastern corner of property	1929	1970	Fire Dept. and Sanborn Map
1,000-gallon	Unknown				
1,000-gallon	Unknown				
1,000-gallon	Unknown				
Unknown	Unknown	Unknown	Unknown	1970	Fire Dept.
Unknown	Gasoline	Directly east of the property, within South Old Woodward Avenue right of way	Prior to 1926	Unknown	Sanborn Map

No additional information on the condition of the USTs upon removal in 1970 or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed in 1970 was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. **The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s), which represents a REC.**

4.9: Previous Environmental Reports

No previous site investigations were identified by PM for the subject property. Previous reports may exist for the subject property, however, none were provided to PM by the client or owner of the property, and none were available with the appropriate state regulatory agencies.

4.10: Environmental Liens, Activity and Use Limitations, and Government Institutional and Engineering Controls

PM has not identified any record of environmental liens, activity and use limitations, or institutional controls or engineering controls associated with the subject property through review of reasonable ascertainable records.

5.0 INTERVIEWS

The objective of completing interviews with knowledgeable site contacts is to obtain information about the uses and physical characteristics of the property. In general, interviewees supported the information reviewed from other historical sources (i.e. aerial photos, city records, etc.).

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner, Key Site Manager, and Current Occupant – 300 South Old Woodward Avenue	Yes	Mr. Adam Lutz, Chief Executive Officer of Lutz Financial Services and representative of the current owner (BRB Equities LLC)	Nine years	Mr. Lutz has leased the 300 South Old Woodward Avenue building since 2011 and completed a full interior renovation of the building. Mr. Lutz indicated the building has historically been occupied by professional offices. Mr. Lutz was unaware of any aboveground storage tanks (ASTs) or USTs associated with the subject property. Mr. Lutz also provided access to the southeastern parcel subject building (360-394 South Old Woodward Avenue) and indicated the building has been occupied by various retail or the current shoe repair operations since at least 2011. No additional information was reported that would be considered material to identifying RECs associated with the property.
Current Property Owner – 360-394 South Old Woodward Avenue	No	Frank Konjarevich Trust	Since at least 2000	PM requested contact information for the current owner of the southeastern subject parcel; however, information was not received within the time constraints of this report. Current occupant and representative of the current owner on the northeastern parcel provided access and relevant information. Refer above for additional information.

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner, Key Site Manager, and Current Occupant – 294 East Brown Street	Yes	Mr. John North, Chief Executive Officer of Coldwell Banker and representative of the current owner (Trott Properties, 294 LLC)	Ten years	Mr. North indicated he has leased the 200 East Brown Street building since 2010 and completed a full interior renovation of the in 2010. Mr. North was unaware of any ASTs or USTs associated with the subject property. No additional information was reported that would be considered material to identifying RECs associated with the subject property.
Former Property Owner	No	Not applicable	Not applicable	Contact information for the former owner was not reasonably ascertainable or provided by the User.
Former Occupant(s)	No	Not applicable	Not applicable	Contact information for the former occupants was not reasonably ascertainable or provided by the User.
Other(s)	No	Not applicable	Not applicable	No other relevant interviews were conducted as part of this Phase I ESA.

6.0 SUMMARY OF HISTORICAL USE

Standard and other historical sources document the northeastern parcel, identified as 300 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and shed structure. A small storefront building was constructed in the eastern portion of the parcel between 1926 and 1931. The dwelling and shed structure were demolished by 1945 when the northern portion of the current building was constructed in the same area of the parcel. The small storefront building was demolished by 1949. The southern addition of the current building was completed in 1954 and additional southeastern addition was completed in 1994. The building was labeled as a storefront in the 1949 Sanborn map, with a used car sales operation depicted south of the building. Based on local street directories documenting the southeastern parcel being occupied by a dealership, it is likely that the used car sales operations were for the dealership / surface lot and not associated with the current building. The building has been occupied by various professional offices since at least 1951.

PM was unable to determine the occupants of the former small storefront building (constructed between 1926 and 1931 and demolished by 1949) or the occupants of the current building from construction in 1945 until 1951 when first known office use was identified. Based on the relatively small scale and short timeframe of former operations, PM has not identified the unknown operations as a REC. Additionally, PM has not identified the former automotive sales lot on the property as a REC.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and garage structure. The former dwelling was converted to a storefront by 1926. PM was unable to confirm the operations of the former storefront building on the property between at least 1926 and 1929. However, based on the small scale and short timeframe of operations, PM has not identified the unknown operations as a REC.

The southeastern parcel was redeveloped in approximately 1929 with a majority of the current building, occupied by an automotive service operation and gasoline dispensing station, with at least four USTs located along South Old Woodward Avenue. Gasoline dispensing operations ceased at some time between 1960 and 1970 and an addition to the service building was completed in the area of former dispensing operations between 1967 and 1974. The building was occupied by automotive service operations until at least 1967. The building was divided into multiple tenant spaces during at least the late-1960s and occupied by a theater between at least 1966 and 1986, automotive sales with potential service operations between at least 1980 and 1988, a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976, automotive sales in the mid-2000s, and Frank's Shoe Service and additional retail operations since at least 1969. Cobbler activities (Frank's Shoe Service) include shoe repair, painting, leather conditioning, and polishing. Based on the small scale of operations and lack of waste generated, PM has not identified the cobbler activities as a REC.

The building was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. **The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination, which represents a REC.**

Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). **The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property, which represents a REC.**

The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. **The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations, which represents a REC.**

The western parcel, identified as 294 East Brown Street, was developed prior to 1921 with two dwellings in the western portion and a former roadway (Ann Street), transecting the parcel from north to south. An additional dwelling was constructed in the northeastern portion of the parcel between 1926 and 1931. A former dwelling in the northwestern portion was demolished and a majority of the current building was constructed in 1956. The former northeastern and remaining

western dwellings were converted for office use. The former converted dwellings / office buildings were demolished, the southern addition was completed on the current building, and the former roadway was closed between 1967 and 1974. The current building was occupied by various offices, retail sales, or salons between 1958 and 1971, Chudik's Furs between at least 1970 and 1991, and various professional offices since at least 1998.

The building was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning operations between at least 1970 and 1991. In PM's experience fur retailers commonly have repair and cleaning operations that may involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Additionally, available fire records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted on-site. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. **The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination, which represents a REC.**

7.0 SUBJECT PROPERTY RECONNAISSANCE

Reconnaissance Information	
PM Field Personnel:	Ms. Devon Nagengast
Site Reconnaissance Date:	November 19 and November 25, 2020
Escort:	Mr. Adam Lutz, Chief Executive Officer of Lutz Financial Services and Mr. John North, Chief Executive Officer of Coldwell Banker
Limitations:	Access not obtained to the attic in 360 South Old Woodward and observations in the basement of 394 South Old Woodward were limited by lack of lighting. However, PM has not identified these limitations as a significant data gap.

7.1: Subject Property Observations

The northeastern parcel, 300 South Old Woodward Avenue, is developed with 4,300 square foot building, which is divided into lobby area, offices, open workspaces, conference rooms, breakrooms, mechanical/storage areas, restroom, and partial basement.

The southeastern parcel, 360-394 South Old Woodward Avenue, is developed with a 7,913 square foot building, which is divided into two tenant spaces. The tenant spaces are further divided into retail areas, offices, mechanical/storage areas, break room, cobbler repair area, restrooms, and partial basement.

The western parcel, 294 East Brown Street, is developed with a two-story, 13,290 square foot building, which is divided into lobby area, offices, open workspaces, conference rooms, breakrooms, mechanical/storage areas, restroom, and full basement.

Interior finish materials generally include carpeting, ceramic floor tiles, 12 inch by 12 inch vinyl floor tiles, poured concrete floors, wood paneling walls, concrete block walls, drywall walls and ceilings, wood frame ceilings, metal deck ceilings, and suspended acoustical ceiling tiles.

Exterior pavement is present surrounding the subject buildings with paved parking areas in the central and eastern-central portions of the property. The remainder of the property contains groomed grass and landscaped areas.

The following table summarizes the site observations. Affirmative responses are discussed in more detail following the table.

Category	Feature	Observed
Interior Equipment	Elevators	Yes
	Air Compressors	Yes
	Incinerators	No
	Waste Treatment Systems	No
	Presses/Stamping Equipment	No
	Press Pits and/or In-ground Pits	No
	Hydraulic Lifts or In-ground hoists	No
	Paint Booth	Yes
	Plating Tanks	No
	Parts Washers	No
	Lathes, Screw Machines, etc.	No
Aboveground Chemical or Other Waste Storage or Waste Streams	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > 5 gallons	No
	Chip Hoppers	No
	Hazardous or Petroleum Waste Streams	No
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground Storage Tanks	No
	Fuel Dispensers	No
	Sumps or Cisterns	Yes
	Dry Wells	No
	Oil/Water Separators	No
	Floor Drains, Trench Drains, etc.	Yes
	Pipeline Markers	No
Exterior Observations	Stressed Vegetation	No
	Stained Soil or Pavement	No
	Monitoring Wells	No
	Pad or Pole Mounted Transformers and/or Capacitors	Yes
	Soil Piles of Unknown Origin	No
	Exterior Dumpsters with Staining	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	No
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Storm water retention or detention ponds	No
	Pits, Ponds, Lagoons	No

Elevators: PM observed one hydraulic lift elevator in the western building (294 East Brown Street), which was installed prior to 2010. PM was unable to determine the date of original installation. No visual indication of leakage was observed in the area of the elevator operating equipment. PM observed the most recent inspection logs dated from 2020, which documented no major leaks or equipment failures. The hydraulic elevator unit should be inspected periodically for leakage as part of the on-going maintenance activities. If leakage is identified, the unit should be repaired, and any fluid or fluid-soaked waste should be disposed of in accordance with applicable federal, state, and local regulations.

Air Compressors: PM observed an air compressor in the northern tenant space of the southeastern building (360-394 South Old Woodward Avenue), adjacent to cobbler and painting activities. The air compressor was in fair condition and staged on concrete that appeared to be in generally good condition. PM was unable to determine the age of the air compressor. No significant staining or evidence of poor waste management practices was observed associated with the air compressor. Based on the observed site conditions, PM has not identified the air compressor as a REC.

Paint Booths: PM observed painting, leather conditioning, and polishing activities conducted within make-shift tabletop paint booths in the northern tenant space of the southeastern building (360-394 South Old Woodward Avenue). Materials utilized during cobbler activities were stored within containers of less than five-gallon adjoining to the paint booths. PM observed limited staining near the paint booths; however, the floors within the vicinity appeared to be in generally good condition with no significant cracking and/or pitting observed. Based on the relatively small scale of painting activities and location aboveground/tabletop, PM has not identified the painting, leather conditioning, and polishing activities as a REC.

Sumps or Cisterns: PM observed sump pumps in a mechanical/storage area of the northeastern building (300 South Old Woodward Avenue) and within the basement of the western building (294 East Brown Street). The sumps are reportedly utilized to prevent flooding. The sumps were observed to be covered with no evidence of poor waste management practices or staining. Based on the observed site conditions, PM has not identified the sumps as a REC.

Floor Drains, Trench Drains, etc.: PM observed circular floor drains in each basement of the subject buildings. No staining or evidence of poor waste management practices was observed associated with the drains. The drains likely discharge to the municipal sewer system.

Pad or Pole Mounted Transformers and/or Capacitors: The subject property is supplied with overhead secondary electrical service from two pole-mounted electrical transformers located northwest of the southeastern parcel (360-394 Old Woodward Avenue). The transformers are likely the property of the public utility and were not labeled regarding PCB content. No leakage of the transformers was observed at the time of the site reconnaissance.

7.1.1: Current Operations

The northeastern building, 300 South Old Woodward Avenue, is occupied by Lutz Financial Services and Gemini Risk Partners, and the western building, 294 East Brown Street, is occupied by Coldwell Banker Weir Manuel. Operations consist of general office activities. The southeastern building, 360-394 South Old Woodward Avenue is occupied by Frank's Shoe Service and Roche Bobois (furniture store). Operations consist of retail sales and shoe repair activities.

8.0 ADJOINING PROPERTIES

The following paragraphs provide information about the adjoining properties obtained during the site reconnaissance and through review of reasonably ascertainable information.

North Adjoining Properties, across East Brown Street

The north adjoining property, identified as 298 South Old Woodward Avenue, is currently occupied by the Daxton Hotel. Review of historical sources document the property was residential between at least 1910 and 1921. A multi-tenant storefront building was constructed in the southeastern portion between 1921 and 1926. A former dwelling in the northern portion of the property was converted into a hall by 1949 and a former dwelling in the western portion was converted to a storefront or office building by 1960. The northern hall building was demolished between 1960 and 1963 and the northern portion of the property was utilized for parking. The buildings were occupied by various offices, retail, or commercial operations, including a printing operation in at least 1949. The former buildings were demolished between 2019 and 2020, when construction of the current hotel began. Based on the small scale of former printing operations, short timeframe of known operations, insufficient groundwater to act as a transport mechanism, and distance of former operations from the subject property (over 100 feet across East Brown Street), PM has not identified this property as a REC.

The north adjoining property, identified as 255 East Brown Street, is currently occupied by Wells Fargo Advisors. Review of historical sources document the property was residential between at least 1921 and 1952. The former dwellings were demolished, and the property was utilized for parking between at least 1955 and 1980. The property was redeveloped with the current building between 1980 and 1983. The building has been occupied by various office and commercial operations since at least 1983.

The remaining north adjoining property is currently utilized for parking and was historically residential or vacant land.

East Adjoining Properties, across South Old Woodward Avenue

The northeast adjoining property, identified as 255 South Old Woodward Avenue, is currently occupied by an office building. Review of historical sources document the property was residential and occupied by a church between at least 1910 and 1949. The former church building was demolished, and former dwellings were converted for storefront use by 1957. The buildings were occupied by various professional offices. The property was redeveloped with the current building between 1980 and 1986. The current building has been occupied by various offices and retail operations since at least 1986, including Gas Station TV since at least 2011. Gas Station TV is a data company that provides marketing services to gasoline dispensing stations. This property is identified in the regulatory database. Refer to Section 9.2 for additional information.

The east adjoining property, identified as 325 South Old Woodward Avenue, is currently occupied by Adachi Restaurant. Review of historical sources document the property was developed as residential in at least 1910. The former dwelling was converted into or demolished and replaced with the current building between 1921 and 1926. The building was occupied by Masonic Lodge prior to the 1960s and has been occupied by various offices or restaurants since the late-1960s. The northern portion of the property was developed between 1931 and 1940 with a gasoline service station, which extended into the northern right of way. The former gasoline service station was demolished between 1964 and 1966. Based on the insufficient groundwater to act as a transport mechanism and distance of former gasoline service station operations from the subject property (over 115 feet across South Old Woodward Avenue), PM has not identified this property as a REC.

The east adjoining property, identified as 355 South Old Woodward Avenue, is currently occupied by a multi-tenant medical and office building. Review of historical sources document the property

was developed prior to 1921 with a dwelling and parking garage. A 1,000-gallon gasoline UST was documented in the right-of-way of South Old Woodward Avenue in the 1921 Sanborn map. The dwelling was redeveloped for retail use by 1926 and was demolished by 1931. The property was utilized as part of the Eastern Michigan Railways from that time until between 1940 and 1944 when the current building was constructed. A portion of the current building was occupied by a movie theater until the 1980s, when it was redeveloped as a parking garage, and the remainder has been utilized for various retail shops, offices, and/or restaurants since at least 1947. Based on the likely removal of the former gasoline UST during road maintenance activities, length of time since UST operations (i.e. over 80 years), insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 55 feet and across South Old Woodward Avenue), PM has not identified the historical gasoline UST associated with the property as a REC.

The southeast adjoining property, identified as 373-401 South Old Woodward Avenue, is currently occupied by a multi-tenant commercial building. Review of historical sources document the property was developed as residential prior to 1921 with a lumber yard in the eastern portion. The northern and eastern portions of the property were redeveloped between 1926 and 1931 with a bus station, including offices and retail shops, along Woodward Avenue. The remaining dwellings were demolished between 1967 and 1974. The bus station was demolished between 1974 and 1980, and the property was redeveloped with the current building by 1983. Review of Sanborn maps identified gasoline tanks associated with the bus station were historically located in the eastern portion of this property. Based on the distance of the former USTs from the subject property (over 200 feet across South Old Woodward Avenue), and insufficient groundwater to act as a transport mechanism, PM has not identified this property as a REC.

South Adjoining Properties, across Daines Street

The south adjoining property, identified as 400-410 South Old Woodward Avenue, is currently occupied by The Forefront, a multi-tenant commercial and residential building. Review of historical sources document the property was developed as residential in at least 1921. A northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. A central dwelling was demolished in 1930, and the northern and central portions of the property were redeveloped with a gasoline filling station and automotive service garage in late 1930, with additions constructed at various times between 1949 and 1967. The gasoline filling station and automotive service garage were redeveloped for retail use in 1958 and were subsequently demolished in 2015, when the current building was constructed. Occupants of the former northern buildings included various automotive dealerships or service operations between at least 1930 and 1957 and Green's Art Supply between at least 1958 and 2014. A southeastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s, when the building was demolished, and the area was converted into a parking lot until construction of the current building. A western dwelling was demolished between 1931 and 1940, when the area was converted into a parking lot, until construction of the current building. The current building has been occupied by various retail, commercial, and residential operations since construction. This property is identified in the regulatory database. Refer to Section 9.2 for additional information.

The south adjoining property, identified as 280 Daines Street, is currently occupied by the Downtown Birmingham Veterinarian. Review of historical sources document the property was developed as residential in at least 1921. Former dwellings were converted for professional offices

use during the 1960s. A majority of the former buildings were demolished in the early-1980s, and the current building was constructed. The property has been occupied by various professional firms (i.e. legal, real estate, etc.) since at least 1988.

The remaining south adjoining property is currently utilized for parking and was historically residential or vacant land.

West Adjoining Property

The west adjoining property, identified as 260 East Brown Street, is currently occupied by E.H. Bluestein Company, a professional management company. Review of historical sources document the property was residential between at least 1921 and 1963. Former dwellings were demolished at various times between 1963 and 1980 and the property was redeveloped with the current building between 1980 and 1988. The building has been occupied by various professional offices since at least 1988.

9.0 REGULATORY RECORDS REVIEW

PM retained EDR to provide current regulatory database information compiled by a variety of federal and state regulatory agencies. A copy of the complete database is included in Appendix D. The following information was obtained:

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	National Priority List (NPL) Sites	1 mile	0
Federal	Delisted National Priority List (DNPL) Sites	½ mile	0
Federal	Superfund Enterprise Management System (SEMS) (formerly CERCLIS – renamed in 2015) Sites	½ mile	0
Federal	SEMS-Archive Sites (formerly CERLIS-NFRAP – renamed 2015)	½ mile	0
Federal	Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Sites	1 mile	0
Federal	RCRA non-CORRACTS Treatment, Storage or Disposal Facilities (TSDF) Sites	½ mile	0
Federal	RCRA Large Quantity Generators (LQG) Sites	subject property and adjoining properties	0
Federal	RCRA Small Quantity Generators (SQG) Sites	subject property and adjoining properties	0
Federal	RCRA Very Small Quantity Generators (VSQG) Sites	subject property and adjoining properties	1
Federal	RCRA Non-Generators (NON-GEN) Sites	subject property and adjoining properties	0
Federal	Institutional Control / Engineering Control Registries	subject property	0
Federal	Environmental Response and Notification System (ERNS)	subject property	0
State & Tribal	Hazardous Waste Sites (HWS) (equivalents to NPL and CERCLIS)	1 mile	0
State & Tribal	Solid Waste Facilities/Landfill Sites (SWF/LF)	½ mile	0

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
State & Tribal	Leaking Underground Storage Tank (LUST) Sites	½ mile	18
State & Tribal	Registered Underground Storage Tank (UST) Sites	subject property and adjoining properties	1
State & Tribal	Institutional Control / Engineering Control Registries	subject property	0
State & Tribal	Brownfield Sites	½ mile	3
State & Tribal	Michigan Inventory of Facilities (Includes Part 201 Sites and Baseline Environmental Assessment {BEA} Sites)	½ mile	46
Either	Unmappable Database Listings (a.k.a. Orphan Sites)	database-dependent	1

9.1: Subject Property and Occupant Listings

The subject property or its known occupants are not identified in the referenced databases.

9.2: Adjoining and Nearby Sites

PM's review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present an environmental risk to the subject property, PM considered the following criteria:

- The type of database on which the site is identified.
- The topographic position of the identified site relative to the subject property.
- The direction and distance of the identified site from the subject property.
- Local soil conditions in the subject property area.
- The known or inferred groundwater flow direction in the subject property area.
- The status of the respective regulatory agency-required investigation(s) of the identified site, if any.
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) located between the identified site and the subject property.

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional clarification are further evaluated. Using the referenced criteria, and based upon a review of readily available information contained within the regulatory database report, PM did not identify adjoining (i.e., bordering) or nearby sites (e.g., properties within a ¼-mile radius) listed in the regulatory database report that were judged to present a potential environmental risk to the subject property, with the exception of the following:

Essco of Birmingham LLC – This property is identified as 255 South Old Woodward Avenue and is the northeast adjoining property. Review of the regulatory database documents an occupant is a RCRA-VSQQ of hazardous waste with no reported violations. Review of available EGLE records document the occupant has generated waste since at least 2015 related to real estate property. No additional relevant information was documented. Based on the lack of reported violations, insufficient groundwater to act as a transport mechanism, and the distance of

operations from the subject property (over 140 feet across East Brown Street and South Old Woodward Avenue), PM has not identified this property as a REC.

Green's Art Supply a.k.a. Former Gasoline Dispensing Station – This property is identified as 400 South Old Woodward Avenue and is the south adjoining property. Review of the regulatory database documents this property is a former UST site, Brownfield site, and BEA site. Review of available EGLE records document former USTs were removed and contaminated soil was excavated from the property. Verification soil remediation (VSR) samples were collected from the property following excavation activities. Analytical soil sample results document that impacted soil had been remediated to below Part 201 generic cleanup criteria. Based on this information, insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 50 feet across Daines Street), PM has not identified this property as a REC.

Weiss Samona and Woodward Brown Associates, LLC – This property is identified as 34901 Woodward Avenue and is located within one-eighth of a mile northeast. Review of the regulatory database documents this property is a US Brownfields site and a BEA site. Review of available EGLE records document the BEA was completed in 2010 and identified contamination above Part 201 generic cleanup criteria on the property. However, based on the insufficient groundwater to act as a transport mechanism and distance from the subject property (over 390 feet across multiple roadways), PM has not identified this property as a REC.

Jax Kar Wash #048 – This property is identified as 34745 Woodward Avenue and is located within one-eighth of a mile east. Review of the regulatory database documents this property is an open LUST site with one release reported in 2000 and BEA site. Review of available EGLE records document multiple site investigations were completed between 2001 and 2005, which document soil and groundwater contamination are present above Part 213 Risk Based Screening Levels (RBSLs), which has not been delineated towards the subject property. However, based on insufficient groundwater to act as a transport mechanism and distance from the subject property (over 285 feet across South Old Woodward Avenue), PM has not identified this property as a REC.

Estate Motors LTD – This property is identified as 464 South Woodward Avenue and is located within one-eighth of a mile south. Review of the regulatory database documents this property is a closed LUST site with two reported releases in 1991 and 1992, which were granted Type A and Type B closures in 1993 and 1994, respectively. Review of available EGLE records document metals remain on the property above Part 213 RBSLs. However, based on the low mobility of metals within soil, insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 220 feet across Daines Street), PM has not identified this property as a REC.

Brown Street Office Building – This property is identified as 200 East Brown Street and is located within one eighth of a mile west. Review of the regulatory database documents this property is a BEA site. Review of available EGLE records document soil contamination remains on-site above Part 201 cleanup criteria. Contamination was documented to be delineated towards the subject property. Based on this information, insufficient groundwater to act as a transport mechanism, and distance from the subject property (over 200 feet), PM has not identified this property as a REC.

Additional properties within one-eighth of a mile northeast and east were identified in the regulatory database as LUST and BEA sites. However, based on distance considerations and

insufficient groundwater to act as a transport mechanism, PM has not identified these properties as a REC.

10.0 FINDINGS, OPINIONS AND CONCLUSIONS

10.1: De Minimis Condition

A de minimis condition, as defined in the ASTM Standard, is a condition that generally does not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not RECs or CRECs. No de minimis conditions were identified during this assessment.

10.2: Significant Data Gaps

A data gap, as defined in the ASTM Standard, is a lack of or inability to obtain information required by the ASTM Standard despite good faith efforts by the environmental professional to gather such information. The environmental professional must then determine whether these gaps are significant. PM did not identify or encounter any instances of significant data gaps during the course of this ESA.

10.3: Historical Recognized Environmental Conditions (HRECs)

An HREC, as defined in the ASTM Standard, is a past release of hazardous substances or petroleum products that has occurred in connection with the subject property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the subject property to any required controls. PM has not identified any HRECs in association with the subject property.

10.4: Recognized Environmental Conditions (RECs)

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except the following:

- The current building on the southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.

- Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property.
- The southeastern parcel was historically occupied by a gasoline dispensing station between at least 1929 and the 1960s. Review of available records document at least four underground storage tanks (USTs) associated with these operations. A gasoline tank was also depicted east of this parcel, in the South Old Woodward Avenue right of way in the 1926 Sanborn map. Available City of Birmingham Fire Department records document the removal of five abandoned USTs from the property in 1970. No additional information on the condition of the USTs upon removal or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s).
- The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations.
- The current building on the western parcel, identified as 294 East Brown Street, was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning operations between at least 1970 and 1991. In PM's experience, fur retailers commonly have repair and cleaning operations that involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Reasonably ascertainable City of Birmingham Fire Department records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted on-site. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination.

No adjoining and/or nearby RECs have been identified.

10.5: Controlled Recognized Environmental Conditions (CRECs)

A CREC, as defined in the ASTM Standard, is a recognized environmental condition (REC) resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or

petroleum products allowed to remain in place subject to the implementation of required controls. PM has not identified any CRECs in association with the subject property.

10.6: Recommendations

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except as listed in Section 10.4 of this report.

PM is concurrently completing a Phase II ESA to investigate the RECs identified, which will be provided under separate cover.

11.0 NON-ASTM SCOPE CONSIDERATIONS/BUSINESS ENVIRONMENTAL RISKS

PM has included a discussion of Non-ASTM Scope Considerations based upon industry standards and lender requirements. A Business Environmental Risk is defined as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.

Non-ASTM Item	Observations or Information
Potential Asbestos Containing Materials (ACMs)	<p>Based on PM's limited visual observations during the site reconnaissance, suspect ACMs identified included 12 inch by 12 inch vinyl floor tiles, drywall walls and ceilings, and suspended acoustical ceiling tiles. The materials appeared to be in good condition apart from limited damaged vinyl floor tiles. These materials should be sampled, and if found to be asbestos containing, should be repaired or removed by a licensed asbestos contractor in accordance with all applicable federal, state, and local regulations. Repair or removal operations should be supervised by an independent, third party industrial hygiene firm.</p> <p>Buildings constructed prior to, but no later than, 1980 with suspect asbestos containing building materials are required by Federal regulations to designate those materials as "Presumed Asbestos Containing Materials" in the absence of analytical data. As such, there are several Federal requirements the building owner must adhere to regarding notification and management of these materials in pre-1980 buildings. Additionally, in the future, a comprehensive asbestos survey should be completed prior to significant renovation or demolition activities.</p>

Non-ASTM Item	Observations or Information
Lead Based Paint (LBP)	Based on the original construction of the subject buildings in 1929, 1945, and 1956 (pre-1978 when Federal regulations banned the use of LBP), there is the potential for existing paint to be lead based or contain lead. However, the painted surfaces were observed to be in generally good condition, the subject buildings are not of residential or child-occupied use, and there is no regulatory requirement for the owner to sample suspect painted building components at this time. Therefore, no further action is recommended regarding suspected lead in paint at the subject property. If a more definitive determination is preferred for outside contractor or maintenance activities that may disturbed painted building components, PM can provide a scope of work to address.
Visual Mold or Significant Moisture Damage	PM performed a limited visual assessment for the presence of mold, conditions conducive to mold, and evidence of moisture in readily accessible interior areas of the subject property. No significant suspect mold and/or evidence of moisture was observed, beyond the presence of very small quantities commonly found in locations such as frequently wet areas and stained ceiling tiles.

12.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Lauren Babuska
Project Consultant



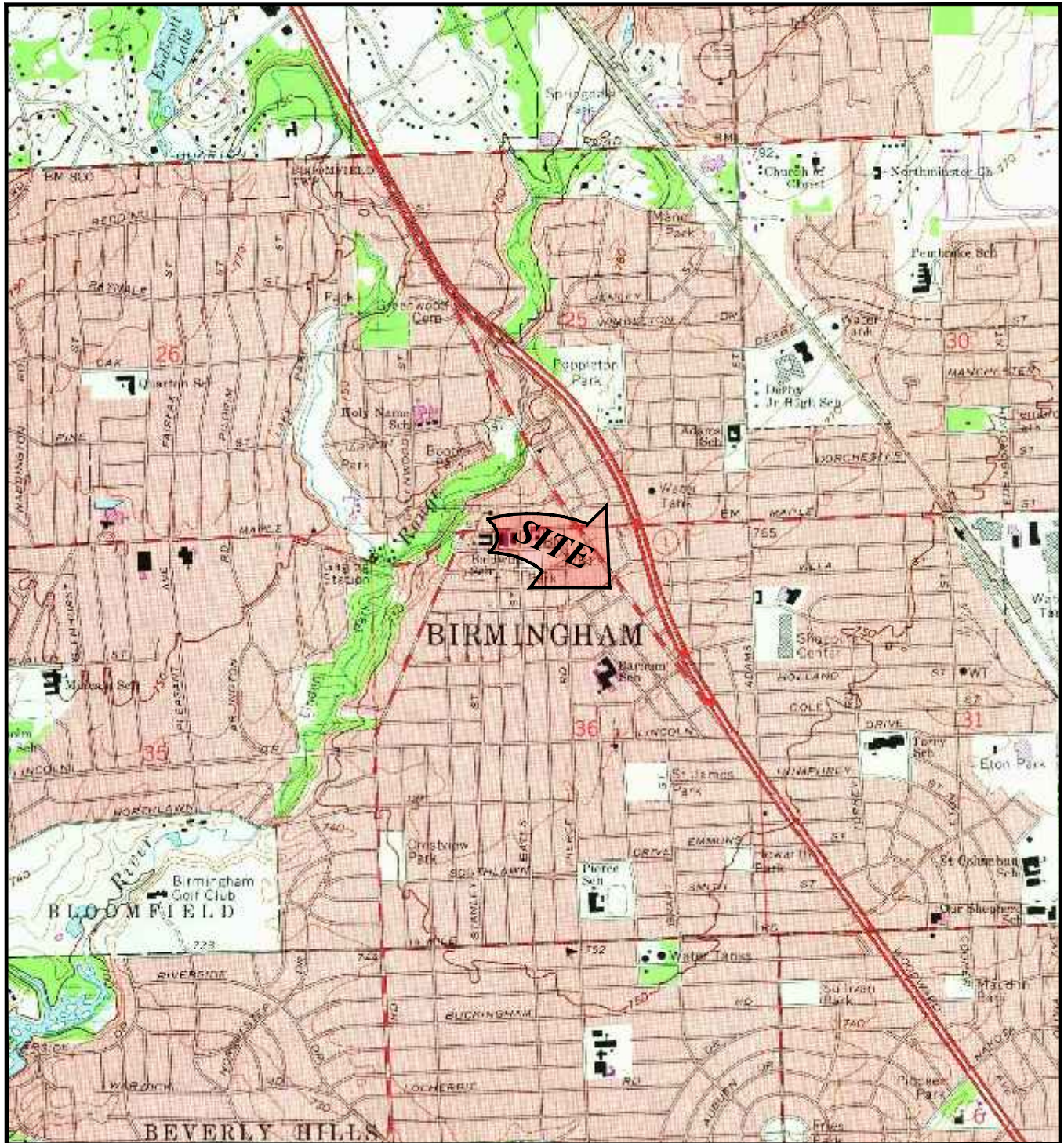
Beth Sexton
Chief Operating Officer

13.0 REFERENCES

The following published sources were utilized during completion of this Phase I ESA:

- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM International, ASTM Designation E 1527-13, Published November 2013.
- R.L. Polk's Directories, obtained from the State of Michigan Library in Lansing, Michigan. City: Birmingham. Years: 1937-1951.
- Bresser's Cross-Index City Directories, Bresser's in Detroit, Michigan. City: Birmingham. Years: 1952-2014.
- United States Geological Survey Division (U.S.G.S.) 7.5 Minute Topographic Map Birmingham, Michigan Quadrangle, 1968 (photo-revised 1981).
- *Custom Soil Resource Report for Oakland County, Michigan*, U.S. Department of Agriculture, survey area data: June 1, 2020.

Figures

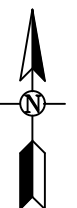


OAKLAND COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
BIRMINGHAM, MI QUADRANGLE, 1968. PHOTO REVISED 1981.

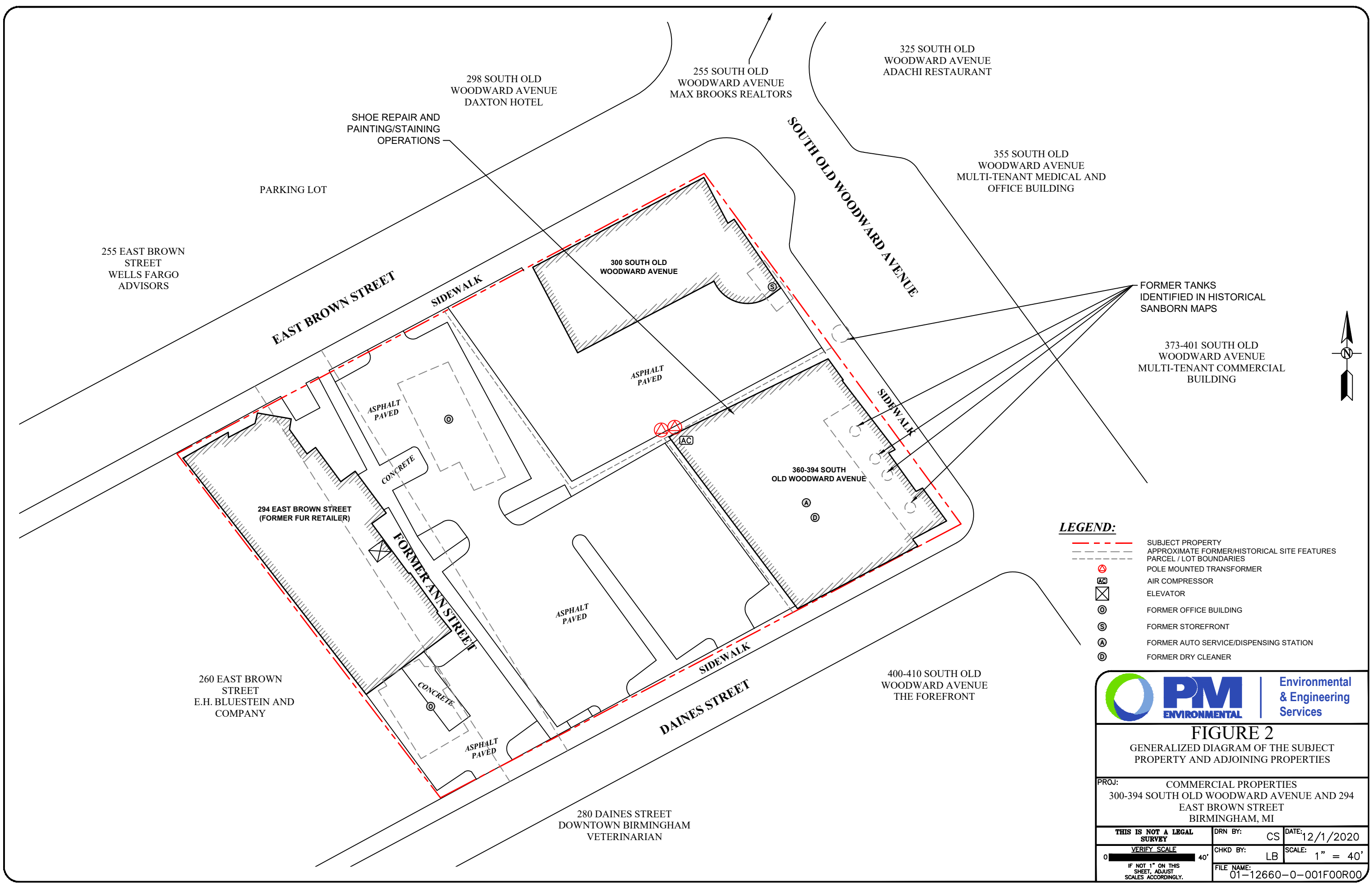


PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE
AND 294 EAST BROWN STREET
BIRMINGHAM, MI

THIS IS NOT A LEGAL
SURVEY

VERIFY SCALE
0 2,000'
IF NOT 1" ON THIS
SHEET, ADJUST
SCALES ACCORDINGLY.

DRN BY: CS	DATE: 12/1/2020
CHKD BY: LB	SCALE: 1" = 2,000'
FILE NAME: 01-12660-0-001F00R00	





Environmental & Engineering Services Nationwide



ENVIRONMENTAL SERVICES

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BROWNFIELDS & ECONOMIC
INCENTIVES CONSULTING

BASELINE ENVIRONMENTAL ASSESSMENT

Commercial Properties

300-394 South Old Woodward Avenue and
294 East Brown Street | Birmingham, Michigan
PM Project Number 01-12660-0-0002

Prepared for:

Boji Group, LLC

124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

Prepared by:

PM Environmental, Inc.

4080 West Eleven Mile Road
Berkley, Michigan 48072

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Michigan Locations
Berkley Bay City
Grand Rapids Lansing
Chesterfield Oak Park

March 25, 2021

District Supervisor
Michigan Department of Environment, Great Lakes, and Energy
Warren District Office
27700 Donald Court
Warren, Michigan 48092

**Re: Baseline Environmental Assessment of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Environmental, Inc. Project No. 01-12660-0-0002**

Dear District Supervisor:

Enclosed is a copy of the Baseline Environmental Assessment (BEA) prepared for the above referenced subject property in accordance with Section 20126(1)(c)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

If you have any questions regarding the information in this report, please contact our office at 800-313-2966.

**REPORT PREPARED BY:
PM ENVIRONMENTAL, INC.**

Aaron Snow
Staff Scientist

**REPORT REVIEWED BY:
PM ENVIRONMENTAL, INC.**

Jennifer Ritchie, CPG
National Manager – Site Investigation Services



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Michigan Locations
Berkley Bay City
Grand Rapids Lansing
Chesterfield Oak Park

March 25, 2021

Mr. John Hindo
Boji Group, LLC
124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

**Re: Baseline Environmental Assessment of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Environmental, Inc. Project No. 01-12660-0-0002**

Dear Mr. Hindo:

Enclosed is a copy of the Baseline Environmental Assessment (BEA) prepared for the above referenced subject property in accordance with Section 20126(1)(c)(i) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

THIS BASELINE ENVIRONMENTAL ASSESSMENT WAS PERFORMED FOR THE EXCLUSIVE USE OF BOJI GROUP, LLC, WHO MAY RELY ON THE REPORT'S CONTENTS.

If you have any questions regarding the information in this report, please contact our office at 800-313-2966.

**REPORT PREPARED BY:
PM ENVIRONMENTAL, INC.**

Aaron Snow
Staff Scientist

**REPORT REVIEWED BY:
PM ENVIRONMENTAL, INC.**

Jennifer Ritchie, CPG
National Manager – Site Investigation Services

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***Baseline Environmental Assessment of the Commercial Properties
Located at 300-394 South Old Woodward Avenue and 294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Project No. 01-12660-0-0002; March 25, 2021***

FIGURES

- Figure 1: Property Vicinity Map
Figure 2: Subject Property and Adjoining Properties with GPR Survey Area
Figure 3: Soil and Groundwater Analytical Results

TABLES

- Table 1: Summary of Soil Analytical Results: VOCs, SVOCs/PNAs, PCBs, and RCRA-8 Metals
Table 2: Summary of Groundwater Analytical Results: VOCs, PNAs, and Metals (Cadmium, Chromium, and Lead)

APPENDICES

- Appendix A: Phase I ESA
Appendix B: Photographic Log from GPR Survey
Appendix C: Soil Boring/Temporary Monitoring Well Logs
Appendix D: Laboratory Analytical Reports
Appendix E: Assessing Information
Appendix F: Professional Qualification Statements

1.0 INTRODUCTION AND DISCUSSION

PM Environmental, Inc. (PM) completed a Baseline Environmental Assessment (BEA) of the Commercial Properties located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan 48009 (hereafter referred to as the “subject property”) in accordance with Section 20126(1)(c) of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

The subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) totaling 1.25 acres located on the west side of South Old Woodward Avenue, south of East Brown Street, and north of Daines Street in Birmingham, Oakland County, Michigan (Figure 1). The subject property is currently developed with one 4,300 square foot single-story building with a partial basement (300 South Old Woodward Avenue), one 7,913 square foot single story building with a partial basement (360-394 South Old Woodward Avenue), and one 13,290 square foot single story building with a basement (294 East Brown Street). The remainder of the subject property consists of asphalt paved driveways and parking areas, concrete sidewalks, and groomed grass landscaping areas. Operations on the northeastern and western parcels consist of general office activities while operations on the southeastern parcel consist of retail sales and shoe repair activities.

1.1 Owner/Operator Information

Boji Group, LLC, having an office at 124 West Allegan Street, Suite 2100 Lansing, Michigan 48933, intends to purchase the subject property on or before April 30, 2021.

1.2 Intended Use of the Subject Property

Boji Group, LLC. intends demolish the current subject buildings and redevelop subject property for mixed use purposes, including the construction of a mixed use building with underground parking.

The subject property is currently zoned B-1: Neighborhood Business. The zoning is consistent with a Nonresidential property use as defined under Part 201, however, the subject property will be redeveloped for mixed Residential and Nonresidential use in the future.

The subject property is currently connected to municipal water, municipal sewer, natural gas, electrical, and telecommunications utilities.

1.3 Summary of All Appropriate Inquiry Phase I Environmental Site Assessment

PM completed a Phase I Environmental Site Assessment (ESA) for the subject property dated December 11, 2020, in conformance with the scope and limitations of ASTM Practice E 1527-13 (i.e., the ‘ASTM Standard’). A copy of the December 2020 Phase I ESA, including photographs of the subject property, is included in Appendix A.

Standard and other historical sources document that the northeastern parcel, identified as 300 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and shed structure. A small storefront building was constructed in the eastern portion of the parcel between 1926 and

1931. The dwelling and shed structure were demolished by 1945 when the northern portion of the current building was constructed in the same area of the parcel. The small storefront building was demolished by 1949. The southern addition of the current building was completed in 1954 and additional southeastern addition was completed in 1994. The building was labeled as a storefront in the 1949 Sanborn map, with a used car sales operation depicted south of the building. Based on local street directories documenting the southeastern parcel being occupied by a dealership, it is likely that the used car sales operations were for the dealership / surface lot and not associated with the current building. The building has been occupied by various professional offices since at least 1951.

PM was unable to determine the occupants of the former small storefront building (constructed between 1926 and 1931 and demolished by 1949) or the occupants of the current building from construction in 1945 until 1951 when first known office use was identified. Based on the relatively small scale and short timeframe of former operations, PM did not identify the unknown operations as a recognized environmental condition (REC). Additionally, PM did not identify the former automotive sales lot on the property as a REC.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and garage structure. The former dwelling was converted to a storefront by 1926. PM was unable to confirm the operations of the former storefront building on the property between at least 1926 and 1929. However, based on the small scale and short timeframe of operations, PM did not identify the unknown operations as a REC.

The southeastern parcel was redeveloped in approximately 1929 with a majority of the current building, occupied by an automotive service operation and gasoline dispensing station, with at least four underground storage tanks (USTs) located along South Old Woodward Avenue. Gasoline dispensing operations ceased at some time between 1960 and 1970 and an addition to the service building was completed in the area of former dispensing operations between 1967 and 1974. The building was occupied by automotive service operations until at least 1967. The building was divided into multiple tenant spaces during at least the late-1960s and occupied by a theater between at least 1966 and 1986, automotive sales with potential service operations between at least 1980 and 1988, a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976, automotive sales in the mid-2000s, and Frank's Shoe Service and additional retail operations since at least 1969. Cobbler activities (Frank's Shoe Service) include shoe repair, painting, leather conditioning, and polishing. Based on the small scale of operations and lack of waste generated, PM did not identify the cobbler activities as a REC.

The western parcel, identified as 294 East Brown Street, was developed prior to 1921 with two dwellings in the western portion and a former roadway (Ann Street), transecting the parcel from north to south. An additional dwelling was constructed in the northeastern portion of the parcel between 1926 and 1931. A former dwelling in the northwestern portion was demolished and a majority of the current building was constructed in 1956. The former northeastern and remaining western dwellings were converted for office use. The former converted dwellings / office buildings were demolished, the southern addition was completed on the current building, and the former roadway was closed between 1967 and 1974. The current building was occupied by various offices, retail sales, or salons between 1958 and 1971, Chudik's Furs between at least 1970 and 1991, and various professional offices since at least 1998.

The following onsite RECs were identified within the Phase I ESA:

- The current building on the southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property.
- The southeastern parcel was historically occupied by a gasoline dispensing station between at least 1929 and the 1960s. Review of available records document at least four USTs associated with these operations. A gasoline tank was also depicted east of this parcel, in the South Old Woodward Avenue right of way in the 1926 Sanborn map. Available City of Birmingham Fire Department records document the removal of five abandoned USTs from the property in 1970. No additional information on the condition of the USTs upon removal or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s).
- The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations.
- The current building on the western parcel, identified as 294 East Brown Street, was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning

operations between at least 1970 and 1991. In PM's experience, fur retailers commonly have repair and cleaning operations that involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Reasonably ascertainable City of Birmingham Fire Department records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted on-site. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination.

No adjoining and/or nearby RECs were identified.

1.3.1 Phase I ESA Exceptions or Deletions

During the completion of PM's December 2020 Phase I ESA, there were no exceptions or deletions from the Federal All Appropriate Inquiry Rule under 40 CFR 312, or the ASTM Standard. To the best of PM's knowledge, no special terms or conditions applied to the preparation of the Phase I ESA.

1.3.2 Phase I ESA Data Gaps

PM did not identify any significant data gaps during the completion of the December 2020 Phase I ESA.

1.4 Summary of Previous Site Investigations

No previous site investigations were identified by PM for the subject property. Previous reports may exist for the subject property, however, none were provided to PM by the client or owner of the property, and none were available with the appropriate state regulatory agencies.

1.5 Summary of Current Site Investigation

Prior to the commencement of field activities, MissDig, a utility locating service, was contacted to locate utilities on or adjacent to the subject property. Utilities were marked by the respective utility companies where they entered or were located adjacent to the subject property. In addition, PM and Ground Penetrating Radar Systems (GPRS) utilized ground penetrating radar (GPR) and a utility wand to clear the soil boring locations of private subsurface utilities.

1.5.1 Geophysical Survey Investigation

On December 21, 2020, PM completed a geophysical survey investigation utilizing GPR to determine the potential presence of orphan USTs and in-ground hoists on the exterior portion of the subject property and the interior of the northern portion of southeastern subject building.

On January 21, 2021, PM oversaw the completion of a geophysical survey investigation by GPRS, who utilized GPR to determine the potential presence of orphan USTs and in-ground hoists within the southern portion of the southeastern subject building.

The geophysical surveys were completed using a GSSI® SIR-4000 radar control unit equipped with a 400 megahertz (MHz) antenna utilizing a 2-dimensional scanning method in a 2 foot surface grid pattern (i.e., in north-south and east-west directions) and non-grid patterns, to a maximum depth of 3.5 feet below ground surface (bgs).

PM encountered parked vehicles located north and west of the southeastern subject building that limited its ability to assess the entire survey area. General storage and current operations within the southeastern subject building limited the GPR survey within the southeastern subject building interior to a non-grid pattern scan.

No anomalies consistent with the presence of orphan USTs or in-ground hoists were identified during the geophysical survey investigations. Other anomalies not consistent with orphan USTs and in-ground hoists (i.e., those consistent with subsurface utilities, rebar, etc.) may have been observed; however, they are not included within this report. The GPR survey area is depicted on Figure 2. Photographs from the geophysical survey investigation are included in Appendix B.

1.5.2 Subsurface Investigation

On December 21, 2020 and January 21 and February 22, 2021, PM completed subsurface investigation activities at the subject property that consisted of advancing 12 soil borings (SB-1 through SB-12), installing two temporary monitoring wells (SB/TMW-6 and SB/TMW-9), and collecting 17 soil samples and two groundwater samples for laboratory analysis to assess the RECs identified in PM's December 2020 Phase I ESA. The soil and groundwater samples were submitted to Merit Laboratories, Inc. in East Lansing, Michigan for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or polynuclear aromatic hydrocarbons (PNAs), PCBs, and Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), or some combination thereof.

The soil boring/temporary monitoring well locations are depicted on Figure 3.

1.5.3 Subsurface Investigations Techniques and QA/QC Procedures

The soil borings were advanced to the desired depth using either a direct push drill rig (SB-3, SB-4, SB-6, SB-8, and SB-9) and/or a hand auger equipped with a stainless steel bucket (SB-1, SB-2, SB-5, SB-7, SB-10, SB-11, and SB-12). Soil sampling was performed for soil classification, verification of subsurface geologic conditions, and for investigating the potential and/or extent of soil and/or groundwater contamination at the subject property. Soil samples were generally collected on a continuous basis using a stainless steel bucket in the case of the hand auger or a 5-foot long macro-core sampler in the case of the direct push drill rig.

Before drilling and between each soil boring, the drilling and sampling equipment was cleaned to minimize the possibility of cross contamination. These procedures included cleaning equipment with a phosphate free solution (i.e., Alconox®) and rinsing with distilled water after each sample collection. Drilling and sampling equipment were also cleaned in this manner prior to initiating field activities.

Soil collected from 1-foot sample intervals was screened using a photoionization detector (PID) to determine if VOCs were present. Soil from specific depths was placed in plastic bags and

allowed to volatilize. The headspace within each bag was then screened with the PID, which is able to detect trace levels of organic compounds in the air space within the plastic bag. Soil samples were collected from the soil boring based upon the highest PID reading, visual/olfactory evidence, a change in geology, surficial soil, and/or directly above saturated soil.

Soil samples for VOC analysis were preserved with methanol in accordance with United States Environmental Protection Agency (USEPA) method 5035.

Temporary monitoring wells (SB/TMW-6 and SB/TMW-9) were installed for groundwater sample collection. At each monitoring well location, a new well assembly, consisting of a 5-foot long, 0.010-inch slot, schedule 40, poly-vinyl chloride (PVC) screen and PVC casing was lowered into the borehole to intersect the water table. After the screen for the well was set to the desired depth, an artificial sand pack was installed or the natural sands in the formation were utilized as the sand pack around the well screen. The groundwater samples were generally collected from the temporary monitoring wells in accordance with the MDEQ Operational Memorandum No. 2 "Sampling and Analysis," October 22, 2004, Revised July 5, 2007, using low flow sampling methods and a peristaltic pump equipped with new, chemically inert, 3/8-inch diameter polyethylene and silicon tubing. The samples were collected directly from the tubing into preserved vials/bottles or within unpreserved bottles/jars, as applicable for the analyte and/or method.

The soil and groundwater samples were placed in laboratory provided, pre-cleaned and appropriately labeled containers with Teflon[®] lined lids and/or sanitized glass jars, then placed in an ice-packed cooler and transported under chain of custody procedures for laboratory analysis within applicable holding times to Merit Laboratories, Inc. in East Lansing, Michigan.

Upon completion of the investigation, the soil borings and temporary monitoring wells were abandoned by removing the temporary monitoring well materials, then placing the soil cuttings back into the borehole, filling the void with bentonite chips, hydrating the chips, resurfacing and returning the area to its pre-drilling condition.

1.6 Geology and Hydrogeology

Based on a review of PM's soil boring logs, the soil stratigraphy at the subject property primarily consists of sandy clay to a depth of at least 13.0 feet bgs underlain by clay to 20.0 feet bgs, the maximum depth explored.

Saturated sand seams were encountered in two soil borings advanced at the subject property (SB/TMW-6 and SB/TMW-9) at a depth of approximately 4.0 feet bgs.. No groundwater and/or saturation was encountered in the remaining soil borings advanced on the subject property.

The soil boring/temporary monitoring well logs are included in Appendix C, which summarize site-specific geology, sample depths, temporary monitoring well construction diagrams, and PID readings.

2.0 LOCATION OF CONTAMINATED MEDIA ON THE SUBJECT PROPERTY

PM compared the analytical results of the soil and groundwater samples collected from the subject property with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity", in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria.

PM also compared the analytical results of the soil and groundwater samples collected from the subject property with the EGLE Volatilization to Indoor Air Pathway (VIAP) screening levels (September 4, 2020). Although not an enforceable standard or a standard by which documentation of due care compliance may be demonstrated, the available VIAP screening levels are consistent with EGLE provided site specific values and are a means to discuss risk and potential due care requirements for a property.

The soil and groundwater sample locations and analytical summaries are included on Figure 3 and in Tables 1 and 2. The laboratory analytical reports and associated chain of custody documentation are included in Appendix D.

2.1 Soil Analytical Results

Concentrations of various petroleum VOCs were detected in soil sample SB-12 (4.0-5.0 feet bgs) above the Part 201 Residential and Nonresidential Drinking Water Protection (DWP) and Groundwater Surface Water Interface Protection (GSIP) cleanup criteria, and the Residential and Nonresidential VIAP screening levels. Concentrations of various petroleum VOCs were detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 GSIP cleanup criteria and/or the Residential VIAP screening levels. No concentrations of VOCs were detected in any of the remaining soil samples analyzed from the subject property above laboratory method detection limits (MDLs).

Concentrations of various SVOCs/PNAs were detected in soil samples SB-6 (2.0-3.0 feet bgs), SB-8 (2.0-3.0 feet bgs), and SB-12 (4.0-5.0 feet bgs) above the laboratory MDLs, but below the most restrictive Part 201 Residential cleanup criteria. No concentrations of SVOCs/PNAs were detected in any of the remaining soil samples analyzed from the subject property above laboratory MDLs.

No concentrations of PCBs were detected in any of the soil samples analyzed from the subject property above laboratory MDLs.

A concentration of lead was detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 Residential Direct Contact (DC) cleanup criteria. No concentrations of other metals were detected in any of the soil samples analyzed from the subject property above laboratory MDLs, the Statewide Default Background Levels (SDBLs), and/or the most restrictive Part 201 Residential cleanup criteria.

2.2 Groundwater Analytical Results

No concentrations of VOCs, PNAs, and/or metals (cadmium, chromium, and lead) were detected in either of the groundwater samples analyzed from the subject property above laboratory MDLs.

2.3 Subject Property Facility Status

A location where a hazardous substance is present in excess of the concentrations, which satisfy the requirements of subsection 20120a(1)(a) or (17), is a facility pursuant to Part 201. Section 20120a(1)(a) requirements are the Cleanup Criteria for unrestricted residential usage.

Current subsurface investigations conducted at the subject property document soil contamination present at concentrations that exceed the current Part 201 Residential and Nonresidential DWP, GSIP, and Residential DC cleanup criteria established under section 20120a(1)(a) and (b) of NREPA, as revised by EGLE on December 30, 2013. Therefore, the subject property is considered a “facility” under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

3.0 PROPERTY INFORMATION

3.1 Legal Description of Subject Property

As indicated in Section 1.0, the subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) totaling 1.25 acres. Copies of available assessment records and the current legal description for the subject property are included in Appendix E.

3.2 Survey Map of Subject Property

A map of the subject property that depicts the property/parcel boundaries is included as Figure 2.

3.3 Subject Location and Analytical Summary Maps

Figure 2 provides a scaled map of the site features and Figure 3 provide scaled maps of the site features and sampling locations along with a summary of the analytical results from PM's December 2020 and January/February 2021 site investigation.

3.4 Subject Property Location Map

Figure 1 provides a scaled area map depicting the subject property location in relation to the surrounding area. Figure 2 provides a scaled map of the subject property with site features.

3.5 Subject Property Address

As indicated in Section 1.0, the subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) located at 300-394 Old Woodward Avenue and 294 Brown Street, Commerce Township, Oakland County, Michigan 48009 (Figures 1 and 2).

3.6 Subject Property Spatial Data

As depicted in Figure 1, the subject property is located in Township two north (T.02N), Range eight east (R.10E), Section 36, northeast quarter, northwest quarter-quarter in Birmingham, Oakland County, Michigan.

According to the EGLE GeoWebFace Website, the subject property is located at latitude 42.544 north and a longitude of -83.212 west.

4.0 FACILITY STATUS OF SUBJECT PROPERTY

As indicated in Section 2.3, based upon the documented soil exceedances of the Part 201 Residential and Nonresidential DWP, GSIP, and Residential DC cleanup criteria, the subject property is considered a Facility under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder.

4.1 Summary Data Tables

The soil and groundwater sample analytical results are summarized in Tables 1 and 2.

4.2 Laboratory Reports and Chain of Custody Documentation

The laboratory analytical reports and associated laboratory chain of custody documentation for the soil and groundwater samples collected during PM's December 2020, January 2021, and February 2021 site investigations are included in Appendix D.

5.0 IDENTIFICATION OF BEA AUTHOR

This BEA was conducted on March 25, 2021, Mr. Aaron Snow, Staff Scientist, and reviewed by Ms. Jennifer Ritchie, CPG, National Manager – Site Investigation Services, PM Environmental, Inc., which is within 45 days of purchase. Qualification statements are provided as Appendix F.

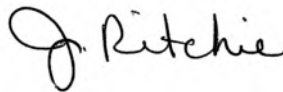
We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.

Report Prepared By:
PM Environmental, Inc.



Aaron Snow
Staff Scientist

Report Reviewed By:
PM Environmental, Inc.



Jennifer Ritchie, CPG
National Manager – Site Investigation Services

6.0 AAI REPORT OR ASTM PHASE I ESA

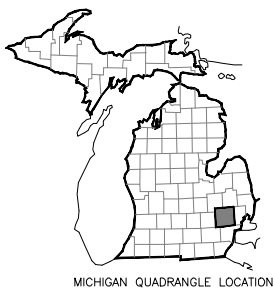
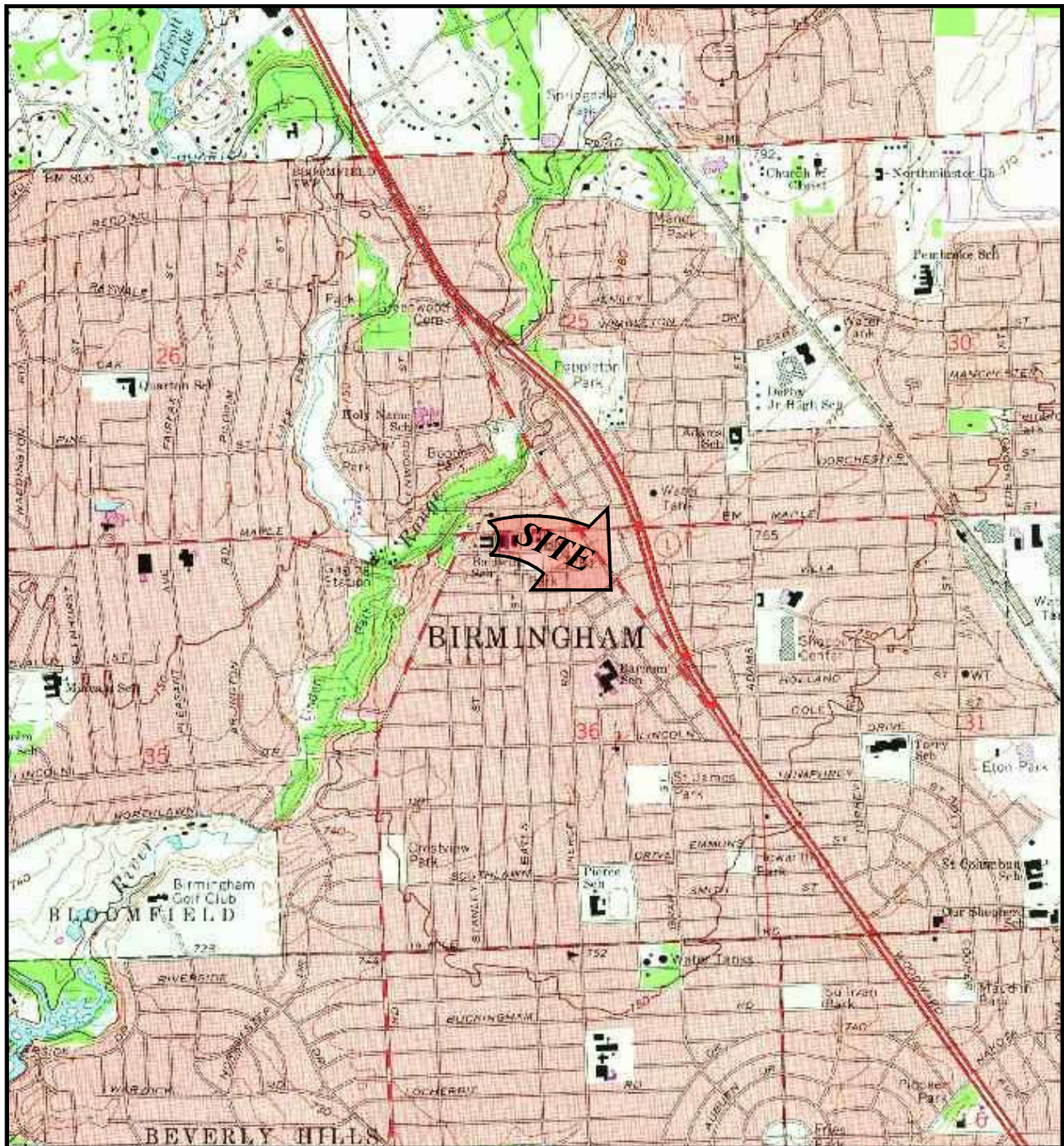
As indicated in Section 1.3, PM completed a Phase I ESA dated December 11, 2020 in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Commercial Properties (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) located at 300-394 South Old Woodward Avenue and 294 Brown Street, Birmingham, Oakland County, Michigan 48009. The scope of the Phase I ESA included consideration of hazardous substances as defined in Section 20101(1)(x) and regulated substances as defined in Section 21303(h) of P.A 451 of 1994, as amended, and constituted the performance of an All Appropriate Inquiry in conformance with the standards and practices set forth in 40 CFR Part 312.

A copy of the December 2020 Phase I ESA is included in Appendix A.

7.0 REFERENCES

- Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM, ASTM Designation E 1527-13, Published November 2013;
- Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels,” Revised December 30, 2013;
- EGLE Operational Memorandum No. 2 “Sampling and Analysis,” October 22, 2004, Revised July 5, 2007;
- EGLE Guidance Document for The Vapor Intrusion Pathway, May 2013, including revisions to Appendix C.7 Checklist for Determining if the VIAP Screening Levels Apply and Appendix D.1 VIAP Screening Levels with Residential and Nonresidential VIAP Screening Levels Tables, September 4, 2020);
- EGLE Baseline Environmental Assessment Submittal Form EQP 4025 (July 2017); and
- Phase I ESA, December 11, 2020, PM.

Figures

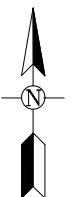


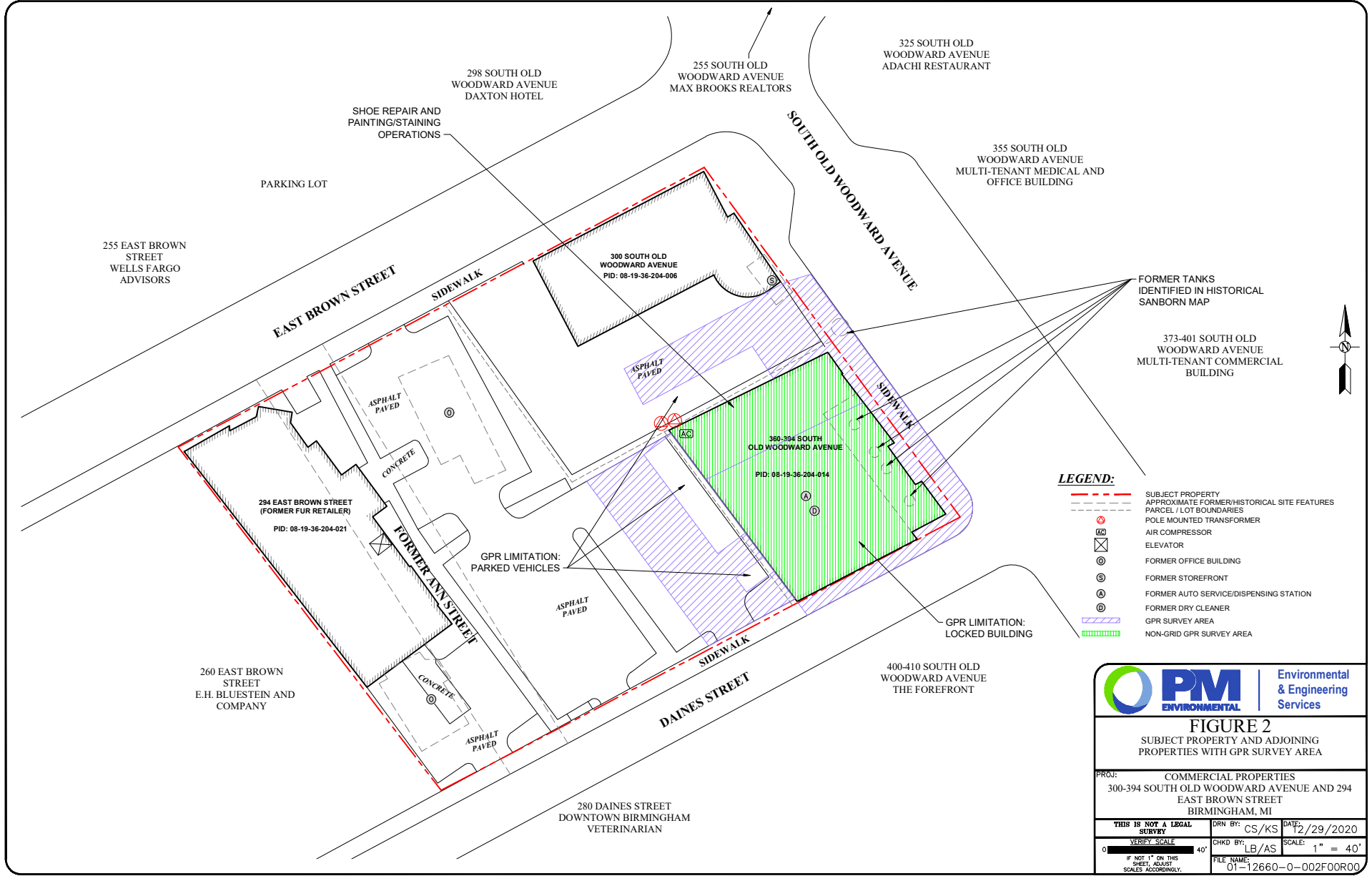
OAKLAND COUNTY

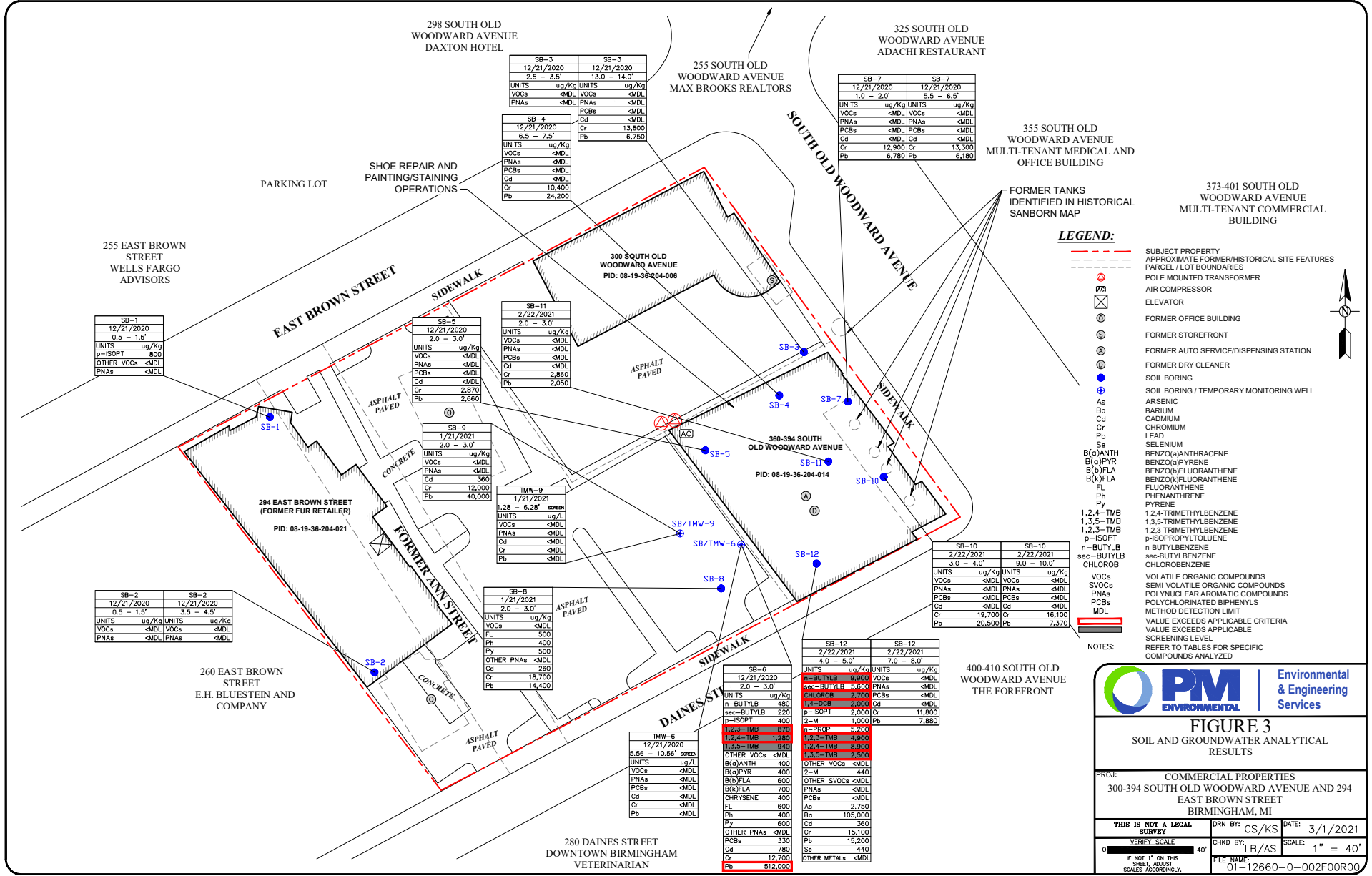
FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
BIRMINGHAM, MI QUADRANGLE, 1968. PHOTO REVISED 1981.







Tables

	Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Polynuclear Aromatic Hydrocarbons (PNAHs), Polychlorinated Biphenyls (PCBs), and Metals	n-Butylbenzene (µg/Kg)	n-Butylbenzene	sec-Butylbenzene	Chlorobenzene	1,4-Dichlorobenzene	p-tolycylohexane	2-Methylcyclopentadiene	n-Pentacyclohexane	1,2,3-Triethylbenzenes*	1,2,4-Tetramethylenecene	1,3,5-Triethylbenzene	Other VOCs	2-Methylcyclopentadiene	Benzothiazole	Benzocyclopentadiene	Benzodipyrrole	Benzophenanthrene	Benzofluorene	Chrysene	Fluoranthene	Phenanthrene	Pylene	Other SVOC/PMAe	PCBis	Arenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver											
	Chemical Abstract Service Number (CAS#)	104518	135988	108970	106467	99876	91576	103651	526738	95636	108678	Various		91576	56553	50328	209992	207089	218019	206440	85018	129000	Various	1336363	7440382	7440393	7440439	16065831	7349921	7439976	7782492	7440224												
Sample ID	Sample Date	Sample Depth (test log)	VOCs												SVOCs/PNAs										PCBs										Metals									
SB-1	12/21/2020	0.51.5	<70	<70	<70	<100	800	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A											
SB-2	12/21/2020	0.51.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A											
		3.5-4.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A											
SB-3	12/21/2020	2.5-3.5	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A											
		13.0-14.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	13,800	6,750	N/A	N/A	N/A	N/A											
SB-4	12/21/2020	6.5-7.5	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	10,400	24,200	N/A	N/A	N/A	N/A											
SB-5	12/21/2020	2.0-3.0	<50	<50	<50	<100	<100	<100	<50	<50	<50	<50	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	2,870	2,600	N/A	N/A	N/A	N/A											
SB-6	12/21/2020	2.0-3.0	480	220	<70	<100	400	<100	<70	870	1,280	940	<MDL	N/A	400	400	600	700	400	600	400	600	<MDL	<330	N/A	N/A	<200	780	12,700	912,000	N/A	N/A	N/A											
SB-7	12/21/2020	1.0-2.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	12,900	6,780	N/A	N/A	N/A	N/A											
		5.5-6.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	13,300	6,180	N/A	N/A	N/A	N/A											
SB-8	01/21/2021	2.0-3.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	500	400	500	<MDL	<330	N																			

(G) Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 100 mg/L CaCO₃ Hardness: Station ID 821270, Detroit River, near Ecorse, MI.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS: VOCs, PNAs, CADMIUM, CHROMIUM, AND LEAD
300-394 SOUTH OLD WOODWARD AVENUE AND 294 EAST BROWN STREET, BIRMINGHAM, MICHIGAN
PM PROJECT # 01-12660-0-0002

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Cadmium, Chromium, and Lead (µg/L)				VOCs	PNAs	Cadmium	Chromium	Lead
Chemical Abstract Service Number (CAS#)				Various	Various	7440439	16065831	7439921
Sample ID	Sample Date	Screen Depth (bgs)	Depth to Groundwater (bgs)	VOCs	PNAs	Metals		
TMW-6	12/21/2020	5.56-10.56	4.66	<MDL	<MDL	<0.5	<5	<3
TMW-9	01/21/2021	1.28-6.28	3.46	<MDL	<MDL	<0.5	<5	<3
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, August 3, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020								
Residential/Nonresidential (µg/L)								
Residential Drinking Water (Res DW)				Various	Various	5.0 {A}	100 {A}	4.0 {L}
Residential Health Based Drinking Water Values				Various	Various	NL	NL	NL
Nonresidential Drinking Water (Nonres DW)				Various	Various	5.0 {A}	100 {A}	4.0 {L}
Nonresidential Health Based Drinking Water Values				Various	Various	NL	NL	NL
Groundwater Surface Water Interface (GSI)				Various	Various	44 {G,X}	1500	200 {G,X}
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) ¹				Various	Various	NLV	NLV	NLV
Nonresidential Groundwater Volatilization to Indoor Air Inhalation (Nonres GVII) ¹				Various	Various	NLV	NLV	NLV
Screening Levels (µg/L)								
Residential Shallow Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Nonresidential Shallow Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Water Solubility				Various	Various	NA	NA	NA
Flammability and Explosivity Screening Level				Various	Various	ID	ID	ID

Criteria Exceeded	(G) Metal GSI Criteria for Surface Water Not Protected for Drinking Water Use based on
BOLD	Value Exceeds Criteria
Value Exceeds Screening Level	100 mg/L CaCO3 Hardness: Station ID 821270, Detroit River, near Ecorse, MI.
Screening Level Exceeded	
µg/L	Micrograms Per Liter
bgs	Below Ground Surface (feet)
<MDL	Not detected at levels above the laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)
¹	Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth
NA	Not Applicable
NL	Not Listed
NLV	Not Likely to Volatilize
ID	Insufficient Data
5.0 {A}	Other Alpha notation, please refer to MDEQ Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 30, 2013



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DOCUMENTATION OF DUE CARE COMPLIANCE

Commercial Properties

300-394 South Old Woodward Avenue and
294 East Brown Street | Birmingham, Michigan
PM Project Number 01-12660-0-0002

Prepared for:

Boji Group, LLC

124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

Prepared by:

PM Environmental, Inc.

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March 25, 2021

Mr. John Hindo
Boji Group, LLC
124 West Allegan Street, Suite 2100
Lansing, Michigan 48933

**Re: Documentation of Due Care Compliance for the Commercial Properties
Located at 300-394 South Old Woodward Avenue and
294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Environmental, Inc. Project No. 01-12660-0-0002**

Dear Mr. Hindo:

Enclosed is a copy of the Documentation of Due Care Compliance prepared for the above referenced property by PM Environmental, Inc. (PM) in accordance with Section 20107(a) of P.A. 451, as amended.

THIS DOCUMENTATION OF DUE CARE COMPLIANCE WAS PERFORMED FOR THE EXCLUSIVE USE OF BOJI GROUP, LLC, WHO MAY RELY ON THE REPORT'S CONTENTS.

If you have any questions regarding the information in this report, please contact us at 800-313-2966.

**REPORT PREPARED BY:
PM ENVIRONMENTAL, INC.**

Aaron Snow
Staff Scientist

**REPORT REVIEWED BY:
PM ENVIRONMENTAL, INC.**

Jennifer Ritchie, CPG
National Manager – Site Investigation Services

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Figure 2: Subject Property and Adjoining Properties with GPR Survey Area
Figure 3: Soil and Groundwater Analytical Results

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Table 2: Summary of Groundwater Analytical Results: VOCs, PNAs, and Metals (Cadmium, Chromium, and Lead)

1.0 INTRODUCTION

PM Environmental, Inc. (PM) prepared this Documentation of Due Care Compliance (DDCC) report on behalf of Boji Group, LLC for the Commercial Properties (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) located at 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Oakland County, Michigan (hereafter referred to as the “subject property”) in accordance with Rule 1003(5) of Section 20107a of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended. Part 201 requires that documentation be maintained demonstrating that the subject property is in compliance with Section 7a of Part 201, which must be made available to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) upon request.

Section 7a of Part 201 imposes “due care” obligations on owners and operators of contaminated properties that are generally described as 1) prevent exacerbation; 2) mitigate unacceptable exposure and operate in a manner that protects the public health and safety; 3) take reasonable precautions against third party omissions; 4) reasonably cooperate with parties authorized to conduct response activities; 5) comply with land or resource use restrictions; and, 6) not impede any land or resource use restrictions.

This report is representative of the current and intended use as outlined in Section 1.1 and 1.2. If changes to the property use, zoning, operations, and/or layout occur, re-evaluation of potential exposure pathways and associated amendments to this report may be required.

1.1 Site Description and Background

The subject property consists of three parcels (Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021) totaling 1.25 acres located on the west side of South Old Woodward Avenue, south of East Brown Street, and north of Daines Street in Birmingham, Oakland County, Michigan (Figure 1). The subject property is currently developed with one 4,300 square foot single-story building with a partial basement (300 South Old Woodward Avenue), one 7,913 square foot single story building with a partial basement (360-394 South Old Woodward Avenue), and one 13,290 square foot single story building with a basement (294 East Brown Street). The remainder of the subject property consists of asphalt paved driveways and parking areas, concrete sidewalks, and groomed grass landscaping areas. Operations on the northeastern and western parcels consist of general office activities while operations on the southeastern parcel consist of retail sales and shoe repair activities.

1.2 Intended Use of the Subject Property

Boji Group, LLC. intends demolish the current subject buildings and redevelop subject property for mixed use purposes, including the construction of a mixed use building with underground parking.

The subject property is currently zoned B-1: Neighborhood Business. The zoning is consistent with a Nonresidential property use as defined under Part 201, however, the subject property will be redeveloped for mixed use in the future.

The subject property is currently connected to municipal water, municipal sewer, natural gas, electrical, and telecommunications utilities.

1.3 Summary of All Appropriate Inquiry Phase I Environmental Site Assessment

PM completed a Phase I Environmental Site Assessment (ESA) for the subject property dated December 11, 2020, in conformance with the scope and limitations of ASTM Practice E 1527-13 (i.e., the 'ASTM Standard').

Standard and other historical sources document that the northeastern parcel, identified as 300 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and shed structure. A small storefront building was constructed in the eastern portion of the parcel between 1926 and 1931. The dwelling and shed structure were demolished by 1945 when the northern portion of the current building was constructed in the same area of the parcel. The small storefront building was demolished by 1949. The southern addition of the current building was completed in 1954 and additional southeastern addition was completed in 1994. The building was labeled as a storefront in the 1949 Sanborn map, with a used car sales operation depicted south of the building. Based on local street directories documenting the southeastern parcel being occupied by a dealership, it is likely that the used car sales operations were for the dealership / surface lot and not associated with the current building. The building has been occupied by various professional offices since at least 1951.

PM was unable to determine the occupants of the former small storefront building (constructed between 1926 and 1931 and demolished by 1949) or the occupants of the current building from construction in 1945 until 1951 when first known office use was identified. Based on the relatively small scale and short timeframe of former operations, PM did not identify the unknown operations as a recognized environmental condition (REC). Additionally, PM did not identify the former automotive sales lot on the property as a REC.

The southeastern parcel, identified as 360-394 South Old Woodward Avenue, was developed prior to 1921 with a dwelling and garage structure. The former dwelling was converted to a storefront by 1926. PM was unable to confirm the operations of the former storefront building on the property between at least 1926 and 1929. However, based on the small scale and short timeframe of operations, PM did not identify the unknown operations as a REC.

The southeastern parcel was redeveloped in approximately 1929 with a majority of the current building, occupied by an automotive service operation and gasoline dispensing station, with at least four underground storage tanks (USTs) located along South Old Woodward Avenue. Gasoline dispensing operations ceased at some time between 1960 and 1970 and an addition to the service building was completed in the area of former dispensing operations between 1967 and 1974. The building was occupied by automotive service operations until at least 1967. The building was divided into multiple tenant spaces during at least the late-1960s and occupied by a theater between at least 1966 and 1986, automotive sales with potential service operations between at least 1980 and 1988, a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976, automotive sales in the mid-2000s, and Frank's Shoe Service and additional retail operations since at least 1969. Cobbler activities (Frank's Shoe Service) include shoe repair, painting, leather conditioning, and polishing. Based on the small scale of operations and lack of waste generated, PM did not identify the cobbler activities as a REC.

The western parcel, identified as 294 East Brown Street, was developed prior to 1921 with two dwellings in the western portion and a former roadway (Ann Street), transecting the parcel from north to south. An additional dwelling was constructed in the northeastern portion of the parcel

between 1926 and 1931. A former dwelling in the northwestern portion was demolished and a majority of the current building was constructed in 1956. The former northeastern and remaining western dwellings were converted for office use. The former converted dwellings / office buildings were demolished, the southern addition was completed on the current building, and the former roadway was closed between 1967 and 1974. The current building was occupied by various offices, retail sales, or salons between 1958 and 1971, Chudik's Furs between at least 1970 and 1991, and various professional offices since at least 1998.

The following onsite RECs were identified within the Phase I ESA:

- The current building on the southeastern parcel, identified as 360-394 South Old Woodward Avenue, was historically occupied by automotive service operations between at least 1929 and 1967. Additionally, records suggest automotive sales between at least 1980 and 1988 appear to have included limited service or repair operations. Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Historical interior waste streams associated with the former service operations would have consisted of general hazardous substances and/or petroleum products. This time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former service operations are unknown and may be a source of subsurface contamination.
- Former service operations on the southeastern parcel may have utilized In-ground hoists, which have an underground reservoir for hydraulic fluids, which can contain polychlorinated biphenyls (PCBs). The potential exists that a release occurred from the former hydraulic hoist system and/or underground reservoir. Additionally, the potential exists for orphaned reservoirs to be present on the subject property.
- The southeastern parcel was historically occupied by a gasoline dispensing station between at least 1929 and the 1960s. Review of available records document at least four USTs associated with these operations. A gasoline tank was also depicted east of this parcel, in the South Old Woodward Avenue right of way in the 1926 Sanborn map. Available City of Birmingham Fire Department records document the removal of five abandoned USTs from the property in 1970. No additional information on the condition of the USTs upon removal or contents of the USTs was available in reasonably ascertainable records. PM was unable to confirm whether the fifth UST removed was the former UST depicted in the right of way in the 1926 Sanborn map or was an additional UST and the right of way UST is still present. The potential exists for orphan USTs to be present on the southeastern parcel and/or for subsurface contamination to be present from the former UST system(s).
- The current building on the southeastern parcel was occupied by a potential dry cleaner (Moore Cleaners) between at least 1969 and 1976. No information on the operations was available from reasonably ascertainable sources reviewed as part of this Phase I ESA. Dry cleaning operations commonly involve the usage of general hazardous substances

and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. This time period preceded major environmental regulations and current waste management and disposal procedures. The potential exists for the former occupant to have been an on-site dry cleaner and for subsurface contamination to be present from these former operations.

- The current building on the western parcel, identified as 294 East Brown Street, was historically occupied by a fur retailer (Chudik's Furs) with potential repair or cleaning operations between at least 1970 and 1991. In PM's experience, fur retailers commonly have repair and cleaning operations that involve the usage of general hazardous substances and/or petroleum products, which, if improperly managed and/or disposed of, can be a source of contamination. Reasonably ascertainable City of Birmingham Fire Department records document that Chudik's Furs was divided into a sewing room, bridal room, and work room with paint cabinet, further indicating repairs and/or cleaning activities were conducted on-site. A significant portion of this time period preceded major environmental regulations and current waste management and disposal procedures. The historical waste management practices associated with the former fur retailer and potential repair and cleaning operations are unknown and may be a source of subsurface contamination.

No adjoining and/or nearby RECs were identified.

1.4 Summary of Previous Site Investigations

No previous site investigations were identified by PM for the subject property. Previous reports may exist for the subject property, however, none were provided to PM by the client or owner of the property, and none were available with the appropriate state regulatory agencies.

1.5 Summary of Current Site Investigation

Prior to the commencement of field activities, MissDig, a utility locating service, was contacted to locate utilities on or adjacent to the subject property. Utilities were marked by the respective utility companies where they entered or were located adjacent to the subject property. In addition, PM and Ground Penetrating Radar Systems (GPRS) utilized ground penetrating radar (GPR) and a utility wand to clear the soil boring locations of private subsurface utilities.

1.5.1 Geophysical Survey Investigation

On December 21, 2020, PM completed a geophysical survey investigation utilizing GPR to determine the potential presence of orphan USTs and in-ground hoists on the exterior portion of the subject property and the interior of the northern portion of southeastern subject building.

On January 21, 2021, PM oversaw the completion of a geophysical survey investigation by GPRS, who utilized GPR to determine the potential presence of orphan USTs and in-ground hoists within the southern portion of the southeastern subject building.

The geophysical surveys were completed using a GSSI® SIR-4000 radar control unit equipped with a 400 megahertz (MHz) antenna utilizing a 2-dimensional scanning method in a 2 foot surface grid pattern (i.e., in north-south and east-west directions) and non-grid patterns, to a maximum depth of 3.5 feet below ground surface (bgs).

PM encountered parked vehicles located north and west of the southeastern subject building that limited its ability to assess the entire survey area. General storage and current operations within the southeastern subject building limited the GPR survey within the southeastern subject building interior to a non-grid pattern scan.

No anomalies consistent with the presence of orphan USTs or in-ground hoists were identified during the geophysical survey investigations. Other anomalies not consistent with orphan USTs and in-ground hoists (i.e., those consistent with subsurface utilities, rebar, etc.) may have been observed; however, they are not included within this report. The GPR survey area is depicted on Figure 2.

1.5.2 Subsurface Investigation

On December 21, 2020 and January 21 and February 22, 2021, PM completed subsurface investigation activities at the subject property that consisted of advancing 12 soil borings (SB-1 through SB-12), installing two temporary monitoring wells (SB/TMW-6 and SB/TMW-9), and collecting 17 soil samples and two groundwater samples for laboratory analysis to assess the RECs identified in PM's December 2020 Phase I ESA. The soil and groundwater samples were submitted to Merit Laboratories, Inc. in East Lansing, Michigan for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or polynuclear aromatic hydrocarbons (PNAs), PCBs, and Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), or some combination thereof.

The soil boring/temporary monitoring well locations are depicted on Figure 3.

1.6 Geology and Hydrogeology

Based on a review of PM's soil boring logs, the soil stratigraphy at the subject property primarily consists of sandy clay to a depth of at least 13.0 feet bgs underlain by clay to 20.0 feet bgs, the maximum depth explored.

Saturated sand seams were encountered in two soil borings advanced at the subject property (SB/TMW-6 and SB/TMW-9) at a depth of approximately 4.0 feet bgs.. No groundwater and/or saturation was encountered in the remaining soil borings advanced on the subject property.

2.0 LOCATION OF CONTAMINATED MEDIA ON THE SUBJECT PROPERTY

PM compared the analytical results of the soil and groundwater samples collected from the subject property with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Cleanup Criteria and Screening Levels as presented in Part 201 Rules 299.1 through 299.50, dated December 30, 2013 entitled "Cleanup Criteria Requirements for Response Activity", in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria.

PM also compared the analytical results of the soil and groundwater samples collected from the subject property with the EGLE Volatilization to Indoor Air Pathway (VIAP) screening levels (September 4, 2020). Although not an enforceable standard or a standard by which documentation of due care compliance may be demonstrated, the available VIAP screening levels are consistent with EGLE provided site specific values and are a means to discuss risk and potential due care requirements for a property.

The soil and groundwater sample locations and analytical summaries are included on Figure 3 and in Tables 1 and 2.

2.1 Summary of Soil Analytical Results

Concentrations of various petroleum VOCs were detected in soil sample SB-12 (4.0-5.0 feet bgs) above the Part 201 Residential and Nonresidential Drinking Water Protection (DWP) and Groundwater Surface Water Interface Protection (GSIP) cleanup criteria, and the Residential and Nonresidential VIAP screening levels. Concentrations of various petroleum VOCs were detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 GSIP cleanup criteria and/or the Residential VIAP screening levels. No concentrations of VOCs were detected in any of the remaining soil samples analyzed from the subject property above laboratory method detection limits (MDLs).

Concentrations of various SVOCs/PNAs were detected in soil samples SB-6 (2.0-3.0 feet bgs), SB-8 (2.0-3.0 feet bgs), and SB-12 (4.0-5.0 feet bgs) above the laboratory MDLs, but below the most restrictive Part 201 Residential cleanup criteria. No concentrations of SVOCs/PNAs were detected in any of the remaining soil samples analyzed from the subject property above laboratory MDLs.

No concentrations of PCBs were detected in any of the soil samples analyzed from the subject property above laboratory MDLs.

A concentration of lead was detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 Residential Direct Contact (DC) cleanup criteria. No concentrations of other metals were detected in any of the soil samples analyzed from the subject property above laboratory MDLs, the Statewide Default Background Levels (SDBLs), and/or the most restrictive Part 201 Residential cleanup criteria.

2.2 Summary of Groundwater Analytical Results

No concentrations of VOCs, PNAs, and/or metals (cadmium, chromium, and lead) were detected in either of the groundwater samples analyzed from the subject property above laboratory MDLs.

3.0 EXPOSURE PATHWAY EVALUATION

The following exposure pathways were evaluated and determined to be complete/potentially complete. Exposure pathways are eliminated when they are determined not to be complete or it is demonstrated that unacceptable exposures do not exist and that response activities are not required to prevent or mitigate unacceptable exposures.

The subject property is currently zoned B-1: Neighborhood Business. The zoning is consistent with a Nonresidential property use as defined under Part 201, however, the subject property will be redeveloped for mixed use in the future. Therefore, the Residential cleanup criteria are applicable to the subject property.

The following exposure pathway analysis is based on the currently known information collected during the December 2020 and January and February 2021 site investigation. If evidence is discovered of additional impact, the exposure pathways will need to be re-evaluated.

Pathway	Complete or Potentially Complete Exposure Pathway?	
	Yes/No	Justification
Groundwater Ingestion	No	<ul style="list-style-type: none"> The subject property is currently connected to municipal water and no water wells will be installed at the subject property.
Indoor Air Inhalation	Yes	<ul style="list-style-type: none"> One 4,300 square foot single-story building (300 South Old Woodward Avenue), one 7,913 square foot single story building (360-394 South Old Woodward Avenue), and one 13,290 square foot single story building (294 East Brown Street are present on the subject property. Concentrations of various petroleum VOCs were detected in soil samples SB-6 (2.0-3.0 feet bgs) and SB-12 (4.0-5.0 feet bgs) above the Residential and Nonresidential VIAP screening levels. Therefore, PM recommends excavating the soils from these areas for proper disposal during anticipated redevelopment activities. If the soils from these areas are not excavated during anticipated redevelopment activities, additional assessment and/or mitigation of the vapor intrusion exposure pathway will be required.
Ambient Air Volatile Soil Inhalation	No	<ul style="list-style-type: none"> No identified exceedances to the most restrictive Part 201 Residential Ambient Air Volatile Soil Inhalation (VSI) cleanup criteria.
Ambient Air Particulate Soil Inhalation	No	<ul style="list-style-type: none"> No identified exceedances to the most restrictive Part 201 Residential Ambient Air Particulate Soil Inhalation (PSI) cleanup criteria.
Direct Contact	Yes	<ul style="list-style-type: none"> A concentration of lead was detected in the soil sample analyzed from SB-6 (2.0-3.0 feet bgs) above the Part 201 Residential DC cleanup criteria. Therefore, PM recommends excavating the soils from this area for proper disposal during anticipated redevelopment activities. If the soils from this area is not excavated during anticipated redevelopment activities surface cover will need to be maintained to prevent exposure in this area.
Surface Water	No	<ul style="list-style-type: none"> Surface water is not present on the subject property.

OTHER PATHWAYS AND DUE CARE CONSIDERATIONS	
Migration Via Utility Corridors	Utility corridors on or adjacent to the subject property may represent pathways for contaminant migration. However, no concentrations of target analytes were identified that would cause inhalation or direct contact exposure to utility workers. Third party contractors completing subsurface work in the impacted area of the subject property should be notified prior to commencement of sub-grade activities.
Fire and Explosion Hazards	No compounds were identified above the flammability and explosively screening level and non-aqueous phase liquid (NAPL) was not identified during PM's December 2020 and January and February 2021 site investigation.
Soil and Groundwater Management	In the event that soil and/or groundwater are to be moved at the subject property, additional characterization will be required to determine proper disposal. Water on the property will be municipally supplied, and the property owner will assure that groundwater is not utilized for any purpose.

4.0 PLAN FOR RESPONSE ACTIVITY

The following represents response activities that will prevent or mitigate unacceptable exposure and allow for the intended use of the subject property in a manner that protects the public's health and safety, based upon the current and intended use of the subject property. PM recommends excavating contaminated soils from the areas of SB-6 and SB-12 for proper disposal during anticipated redevelopment activities. Verification of Soil Remediation (VSR) sampling will be conducted during the excavation activities to verify the absence of any remaining impacts. If the soils from these areas are not excavated during anticipated redevelopment activities, additional

assessment and/or mitigation of the vapor intrusion and direct contact exposure pathways will be required.

Indoor Air Inhalation

Concentrations of various petroleum VOCs were detected in the soil samples analyzed from SB-6 (2.0-3.0 feet bgs) and SB-12 (4.0-5.0 feet bgs) above the Residential and Nonresidential VIAP screening levels. Therefore, PM recommends excavating the soils from these areas for proper disposal during anticipated redevelopment activities. If the soils from these areas are not excavated during anticipated redevelopment activities, additional assessment and/or mitigation of the vapor intrusion exposure pathway will be required.

Direct Contact

A concentration of lead was detected in soil sample SB-6 (2.0-3.0 feet bgs) above the Part 201 Residential DC cleanup criteria. Therefore, PM recommends excavating the soils from this area for proper disposal during anticipated redevelopment activities. If the soils from this area is not excavated during anticipated redevelopment activities, surface cover will be required and maintained on the subject property in the area of contamination to prevent dermal exposure.

If changes to the property use, zoning, operations, layout, and/or regulatory cleanup criteria occur, re-evaluation of potential exposure pathways and associated amendments to this report will be required.

5.0 CONSTRUCTION MANAGEMENT

Future development of the subject property with new mixed use buildings and underground parking is anticipated; therefore, the following construction management actions will be conducted to prevent unacceptable exposure to hazardous substances for onsite subsurface workers and allow for the intended use of the subject property in a manner that protects the public's health and safety.

- All potential third party contractors who may work sub-grade on the subject property will be notified of the presence of soil contaminants and that site-specific health and safety plans and/or requirements for 40-hour personal protection and safety training are necessary if working in the impacted area of the subject property.
- Subject property workers will adhere to a site specific health and safety plan in accordance with OSHA 29 CFR 1910.120 Worker Protection Regulations, and will practice management actions for impacted soil and groundwater on the subject property during construction related actions.
- Prior to any excavation or intrusive activity, including but not limited to the installation of building footings, sub-grade utilities, or other similar features, an evaluation of the potential hazardous substances in soil and groundwater will be undertaken to assure protection of persons who may come into direct contact with contaminated soil and/or groundwater. Evaluation activities will include review of this DDCC, and available environmental reports.

- Contaminated soil and/or groundwater will not be relocated or removed from the subject property without proper disposal or moved from one portion of the subject property to another without proper characterization and/or appropriate notices in accordance with Section 20c of Part 201, and/or the use of engineering controls (i.e., liners, surface cover, etc.).
- In the event that previously unknown sources of contamination are discovered on the subject property during redevelopment and construction activities, an appropriate course of action will be implemented to evaluate the nature of the source, the extent of the contamination as feasible, and the appropriate course of action to prevent unacceptable exposure to subject property occupants and onsite workers, and prevent exacerbation of existing contamination. Unknown structures, such as USTs, drums or other containers will be evaluated for content and removed from the subject property, as appropriate.
- An environmental professional may be present during the construction activities.

6.0 EVALUATION AND DEMONSTRATION OF COMPLIANCE WITH SECTION 7A OBLIGATIONS

The following sections provide documentation that the proposed usage of the site will be in compliance with Section 7a obligations.

6.1 Exacerbation (Section 7a(1)(a))

The following measures and the due care response activities will be undertaken to prevent exacerbation of existing contamination:

- In the event the property owner, occupant, or a third party intends to move soil or groundwater, proper characterization and/or proper disposal will be completed.
- If construction activities occur, control measures will be planned and implemented in a manner as to not increase offsite property migration of impacted soil along subsurface utility, sewer, or structure corridors.
- Contaminated soils and/or groundwater (if encountered) will not be moved offsite or to non-contaminated areas of the subject property unless being disposed of in a designated landfill or treatment facility.

6.2 Due Care (Section 7a(1)(b))

Based on the current and anticipated use and analytical results, due care will be exercised by undertaking the activities outlined in Section 4.0, which includes the excavation of contaminated soils at SB-6 and SB-12 located in the southeastern portion of the property during redevelopment activities, and/or further assessment of the vapor intrusion exposure pathway or the maintenance of adequate surface cover if the contaminated soils are not removed to allow for the intended use of the property in a manner that protects the public health and safety.

Municipal water is available to the subject property and the owner will assure the groundwater on the property is not utilized for any purpose.

If unknown soil, and/or groundwater impact is encountered or changes to the proposed property use, zoning, operations, layout, and/or regulatory cleanup criteria occur, re-evaluation of potential exposure pathways and associated amendments to this report will be required.

6.3 Reasonable Precautions (Section 7a(1)(c))

Reasonable precautions will be taken against the reasonable foreseeable acts or omissions of a third party and the consequences that are foreseeable could result from those acts or omissions. These include the following:

- All potential third party contractors who may work sub-grade on the subject property will be notified of the presence of soil contamination, and site-specific health and safety plans and/or requirements for personal protection and safety training will be necessary if working in the impacted area of the subject property. The owner will provide prospective future owners with the existing documentation, including this DDCC and the March 2021 BEA, concerning the existing subsurface contamination.
- Notices will be provided to construction workers servicing the subject property to comply with Section 7a and allow for management of unacceptable exposures.

6.4 Reasonable Cooperation, Assistance, and Access (Section 7a(1)(d))

Reasonable cooperation, assistance, and access will be provided to the persons (i.e. including liable parties) that are authorized to conduct response activities at the subject property, including the cooperation and access necessary for the installation, integrity, operation, and maintenance of any complete or partial response activity at the subject property.

6.5 Use Restriction Compliance (Section 7a(1)(e))

No land use or resource use restrictions are known or required in connection with the subject property. In the event that any land use or resource use restriction is placed on the property, the owner will comply with them.

6.6 Effectiveness or Integrity of Use Restrictions (Section 7a(1)(f))

As indicated in Section 6.5, no land use or resource use restrictions are currently in place for the subject property. If any land use or resource use restriction is placed on the property, the effectiveness and integrity of the land use or resource restrictions employed at the property will not be impeded.

7.0 DUE CARE DOCUMENTATION

Rule 1003(5) of Section 20107a of P.A. 451, as amended requires that documentation be maintained for the subject property, demonstrating that the subject property is in compliance with Section 7a of Part 201. Any requested compliance documentation must be made available to the EGLE upon request and may include but is not limited to the following:

- Documentation of subsurface construction activities in impacted areas, including any soil, groundwater, or soil gas sampling/characterization reports, excavation activities, waste disposal manifests, and/or documentation of onsite management and/or relocation;

***Documentation of Due Care Compliance for the Commercial Properties
Located at 300-394 South Old Woodward Avenue and 294 Brown Street, Birmingham, Michigan
Parcel IDs: 08-19-36-204-006, 08-19-36-204-014, and 08-19-36-204-021
PM Project No. 01-12660-0-0002; March 25, 2021***

- Documentation of additional assessment activities, i.e. analytical results from VSR sampling activities, vapor assessment activities, mitigation actions, and/or remediation activities;
- Copies of notices to third party contractors who may work sub-grade on the subject property, including excavation contractors and utility employees.

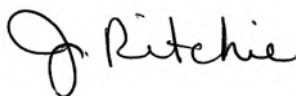
If you have questions regarding this report, please contact PM at 800-313-2966.

REPORT PREPARED BY:



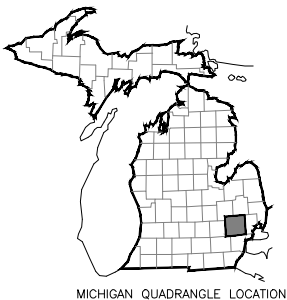
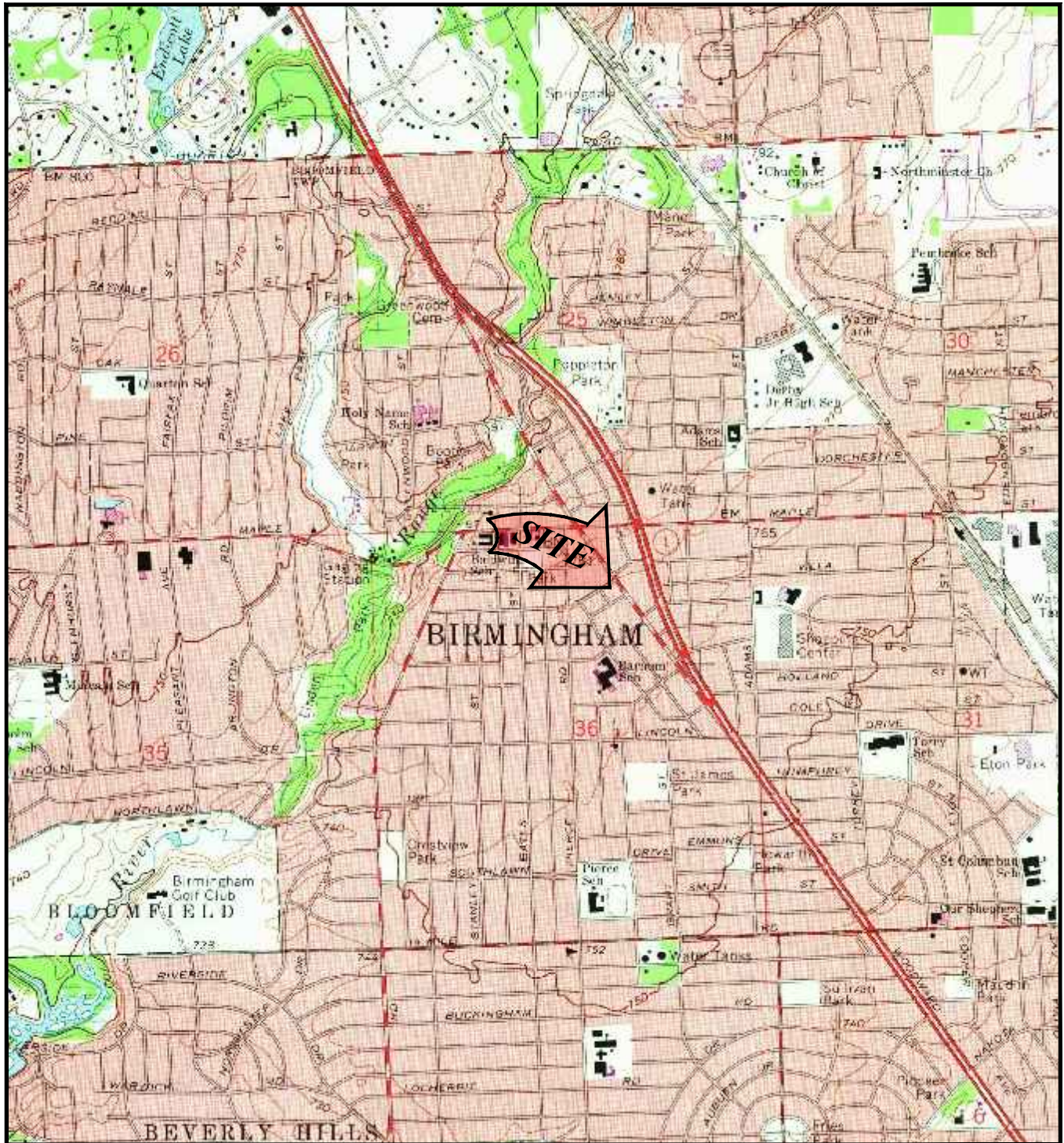
Aaron Snow
Staff Scientist

REPORT REVIEWED BY:



Jennifer Ritchie, CPG
National Manager – Site Investigation Services

Figures

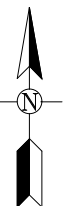


OAKLAND COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
BIRMINGHAM, MI QUADRANGLE, 1968. PHOTO REVISED 1981.

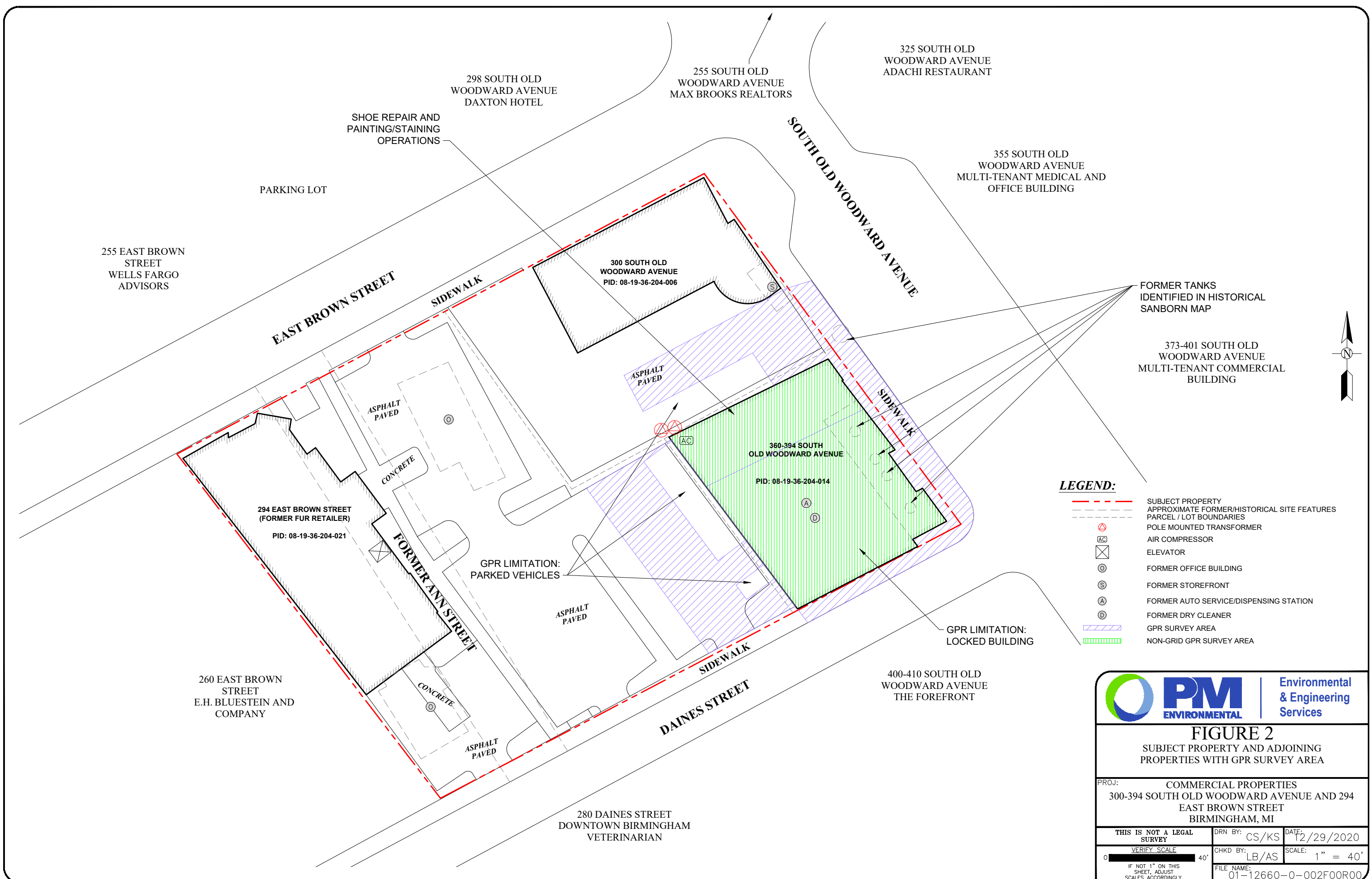


PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE
AND 294 EAST BROWN STREET
BIRMINGHAM, MI

THIS IS NOT A LEGAL
SURVEY


VERIFY SCALE
0 2,000'
IF NOT 1" ON THIS
SHEET, ADJUST
SCALES ACCORDINGLY.

DRN BY: CS DATE: 12/1/2020
CHKD BY: LB SCALE: 1" = 2,000'
FILE NAME: 01-12660-0-002F00R00



LEGEND:

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PARCEL / LOT BOUNDARIES
- POLE MOUNTED TRANSFORMER
- AIR COMPRESSOR
- ELEVATOR
- FORMER OFFICE BUILDING
- FORMER STOREFRONT
- FORMER AUTO SERVICE/DISPENSING STATION
- FORMER DRY CLEANER
- GPR SURVEY AREA
- NON-GRID GPR SURVEY AREA



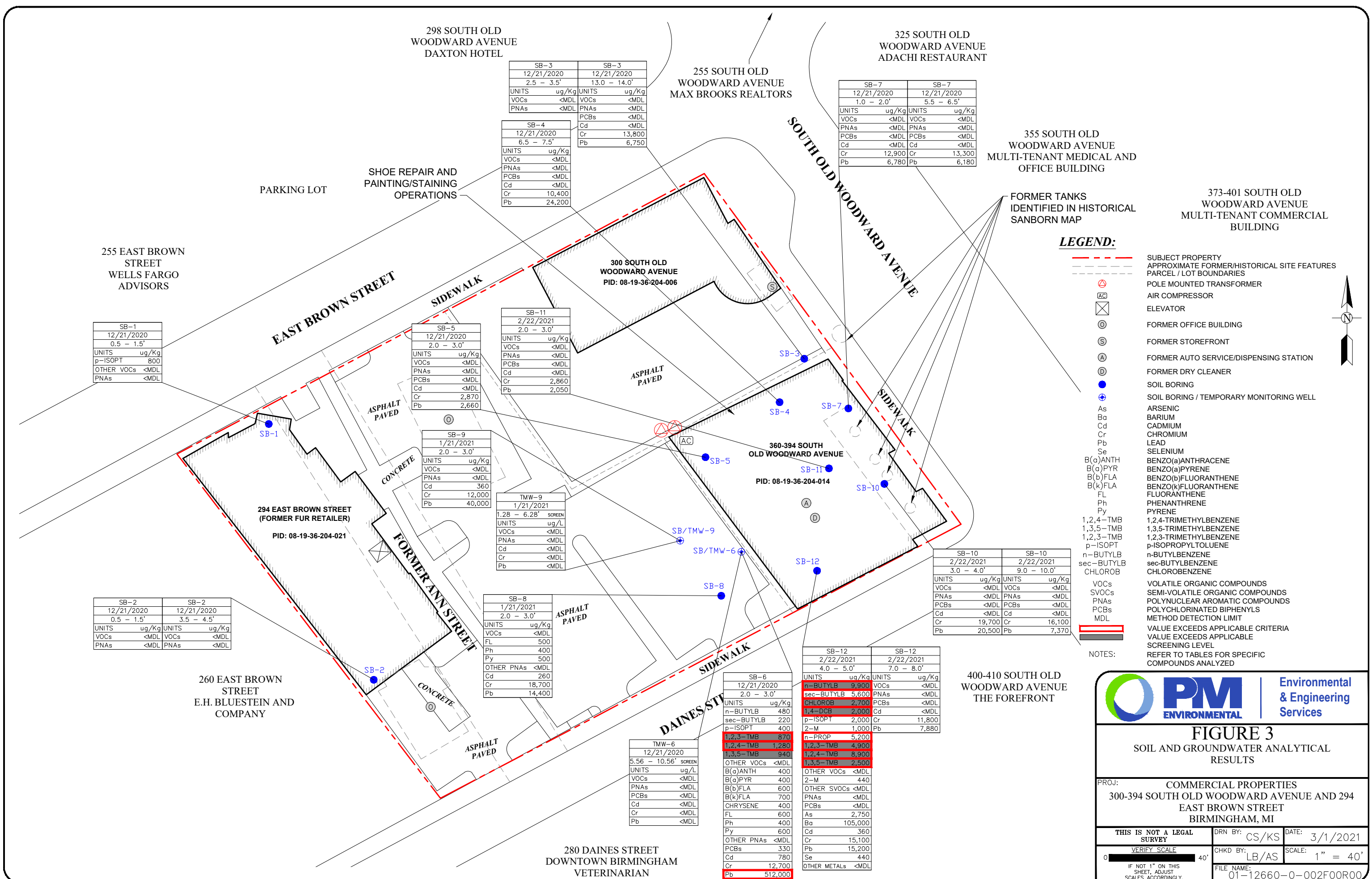
Environmental
& Engineering
Services

FIGURE 2

SUBJECT PROPERTY AND ADJOINING
PROPERTIES WITH GPR SURVEY AREA

PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE AND 294
EAST BROWN STREET
BIRMINGHAM, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS/KS	DATE: 12/29/2020
VERIFY SCALE	CHKD BY: LB/AS	SCALE: 1" = 40'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 01-12660-0-002F00R00		



298 SOUTH OLD
WOODWARD AVENUE
DAXTON HOTEL

SB-3	SB-3
12/21/2020	12/21/2020
2.5 - 3.5'	13.0 - 14.0'
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr 13,800	Cr 13,800
Pb 6,750	Pb 6,750

255 SOUTH OLD
WOODWARD AVENUE
MAX BROOKS REALTORS

SB-4	SB-4
12/21/2020	12/21/2020
6.5 - 7.5'	
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr 10,400	Cr 10,400
Pb 24,200	Pb 24,200

325 SOUTH OLD
WOODWARD AVENUE
ADACHI RESTAURANT

SB-7	SB-7
12/21/2020	12/21/2020
1.0 - 2.0'	5.5 - 6.5'
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr 12,900	Cr 13,300
Pb 6,780	Pb 6,180

355 SOUTH OLD
WOODWARD AVENUE
MULTI-TENANT MEDICAL AND
OFFICE BUILDING

373-401 SOUTH OLD
WOODWARD AVENUE
MULTI-TENANT COMMERCIAL
BUILDING

LEGEND:

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PARCEL / LOT BOUNDARIES
- POLE MOUNTED TRANSFORMER
- AIR COMPRESSOR
- ELEVATOR
- FORMER OFFICE BUILDING
- FORMER STOREFRONT
- FORMER AUTO SERVICE/DISPENSING STATION
- FORMER DRY CLEANER
- SOIL BORING
- SOIL BORING / TEMPORARY MONITORING WELL
- As ARSENIC
- Ba BARIUM
- Cd CADMIUM
- Cr CHROMIUM
- Pb LEAD
- Se SELENIUM
- B(a)ANTH BENZO(a)ANTHRACENE
- B(a)PYR BENZO(a)PYRENE
- B(b)FLA BENZO(b)FLUORANTHENE
- B(k)FLA BENZO(k)FLUORANTHENE
- FL FLUORANTHENE
- Ph PHENANTHRENE
- Py PYRENE
- 1,2,4-TMB 1,2,4-TRIMETHYLBENZENE
- 1,3,5-TMB 1,3,5-TRIMETHYLBENZENE
- 1,2,3-TMB 1,2,3-TRIMETHYLBENZENE
- p-ISOPT p-ISOPROPYLTOLUENE
- n-BUTYLB n-BUTYLBENZENE
- sec-BUTYLB sec-BUTYLBENZENE
- CHLOROB CHLOROBENZENE
- VOCs VOLATILE ORGANIC COMPOUNDS
- SVOCs SEMI-VOLATILE ORGANIC COMPOUNDS
- PNAs POLYNUCLEAR AROMATIC COMPOUNDS
- PCBs POLYCHLORINATED BIPHENYLS
- MDL METHOD DETECTION LIMIT
- VALUE EXCEEDS APPLICABLE CRITERIA
- VALUE EXCEEDS APPLICABLE SCREENING LEVEL
- REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

NOTES:

SB-1	SB-1
12/21/2020	12/21/2020
0.5 - 1.5'	
UNITS ug/Kg	UNITS ug/Kg
p-ISOPT 800	p-ISOPT 800
OTHER VOCs <MDL	OTHER VOCs <MDL
PNAs <MDL	PNAs <MDL

255 EAST BROWN
STREET
WELLS FARGO
ADVISORS

PARKING LOT

SHOE REPAIR AND
PAINTING/STAINING
OPERATIONS

EAST BROWN STREET

SIDEWALK

SB-5	SB-5
12/21/2020	12/21/2020
2.0 - 3.0'	
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr 2,870	Cr 2,870
Pb 2,660	Pb 2,660

SB-11	SB-11
2/22/2021	2/22/2021
2.0 - 3.0'	
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr 2,860	Cr 2,860
Pb 2,050	Pb 2,050

300 SOUTH OLD
WOODWARD AVENUE
PID: 08-19-36-204-006

ASPHALT
PAVED

360-394 SOUTH
OLD WOODWARD AVENUE
PID: 08-19-36-204-014

SIDEWALK

294 EAST BROWN STREET
(FORMER FUR RETAILER)
PID: 08-19-36-204-021

SB-9	SB-9
1/21/2021	1/21/2021
2.0 - 3.0'	
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
Cd 360	Cd 360
Cr 12,000	Cr 12,000
Pb 40,000	Pb 40,000

TMW-9	TMW-9
1/21/2021	1/21/2021
1.28 - 6.28' SCREEN	
UNITS ug/L	UNITS ug/L
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
Cd <MDL	Cd <MDL
Cr <MDL	Cr <MDL
Pb <MDL	Pb <MDL

ASPHALT
PAVED

SB-8	SB-8
1/21/2021	1/21/2021
2.0 - 3.0'	
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
FL 500	FL 500
Ph 400	Ph 400
Py 500	Py 500
OTHER PNAs <MDL	OTHER PNAs <MDL
Cd 260	Cd 260
Cr 18,700	Cr 18,700
Pb 14,400	Pb 14,400

260 EAST BROWN
STREET
E.H. BLUESTEIN AND
COMPANY

SB-2	SB-2
12/21/2020	12/21/2020
0.5 - 1.5'	3.5 - 4.5'
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL

CONCRETE

CONCRETE

ASPHALT
PAVED

280 DAINES STREET
DOWNTOWN BIRMINGHAM
VETERINARIAN

TMW-6	TMW-6
12/21/2020	12/21/2020
5.56 - 10.56' SCREEN	
UNITS ug/L	UNITS ug/L
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr <MDL	Cr <MDL
Pb <MDL	Pb <MDL

SB-6	SB-6
12/21/2020	12/21/2020
2.0 - 3.0'	
UNITS ug/Kg	UNITS ug/Kg
n-BUTYLB 480	n-BUTYLB 480
sec-BUTYLB 220	sec-BUTYLB 220
p-ISOPT 400	p-ISOPT 400
2-M 400	2-M 400
1,2,3-TMB 870	1,2,3-TMB 870
1,2,4-TMB 1,280	1,2,4-TMB 1,280
1,3,5-TMB 940	1,3,5-TMB 940
OTHER VOCs <MDL	OTHER VOCs <MDL
B(a)ANTH 400	B(a)ANTH 400
B(a)PYR 400	B(a)PYR 400
B(b)FLA 600	B(b)FLA 600
B(k)FLA 700	B(k)FLA 700
CHRYSENE 400	CHRYSENE 400
FL 600	FL 600
Ph 400	Ph 400
Py 600	Py 600
OTHER PNAs <MDL	OTHER PNAs <MDL
PCBs 330	PCBs 330
Cd 780	Cd 780
Cr 12,700	Cr 12,700
Pb 512,000	Pb 512,000

SB-12	SB-12
2/22/2021	2/22/2021
4.0 - 5.0'	7.0 - 8.0'
UNITS ug/Kg	UNITS ug/Kg
n-BUTYLB 9,900	n-BUTYLB 9,900
sec-BUTYLB 5,600	sec-BUTYLB 5,600
CHLOROB 2,700	CHLOROB 2,700
1,4-DCB 2,000	1,4-DCB 2,000
p-ISOPT 2,000	p-ISOPT 2,000
2-M 1,000	2-M 1,000
n-PROP 5,200	n-PROP 5,200
1,2,3-TMB 4,900	1,2,3-TMB 4,900
1,2,4-TMB 8,900	1,2,4-TMB 8,900
1,3,5-TMB 2,500	1,3,5-TMB 2,500
OTHER VOCs <MDL	OTHER VOCs <MDL
2-M 440	2-M 440
OTHER SVOCs <MDL	OTHER SVOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
As 2,750	As 2,750
Ba 105,000	Ba 105,000
Cd 360	Cd 360
Cr 15,100	Cr 15,100
Pb 15,200	Pb 15,200
Se 440	Se 440
OTHER METALS <MDL	OTHER METALS <MDL

SB-10	SB-10
2/22/2021	2/22/2021
3.0 - 4.0'	9.0 - 10.0'
UNITS ug/Kg	UNITS ug/Kg
VOCs <MDL	VOCs <MDL
PNAs <MDL	PNAs <MDL
PCBs <MDL	PCBs <MDL
Cd <MDL	Cd <MDL
Cr 19,700	Cr 16,100
Pb 20,500	Pb 7,370

400-410 SOUTH OLD
WOODWARD AVENUE
THE FOREFRONT



Environmental
& Engineering
Services

FIGURE 3

SOIL AND GROUNDWATER ANALYTICAL
RESULTS

PROJ: COMMERCIAL PROPERTIES
300-394 SOUTH OLD WOODWARD AVENUE AND 294
EAST BROWN STREET
BIRMINGHAM, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS/KS	DATE: 3/1/2021
VERIFY SCALE	CHKD BY: LB/AS	SCALE: 1" = 40'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FILE NAME:	01-12660-0-002F00R00

Tables

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS: VOCs, SVOCs/PNAs, PCBs, AND METALS
300-394 SOUTH OLD WOODWARD AVENUE AND 294 EAST BROWN STREET, BIRMINGHAM, MICHIGAN
PM PROJECT # 01-12660-0-0002

Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Polychlorinated Biphenyls (PCBs), and Metals (µg/Kg)			n-Butylbenzene	sec-Butylbenzene	Chlorobenzene	1,4-Dichlorobenzene	p-Isopropyltoluene	2-Methylnaphthalene	n-Propylbenzene	1,2,3-Trimethylbenzene*	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Other VOCs	2-Methylnaphthalene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Phenanthrene	Pyrene	Other SVOCs/PNAs	PCBs	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Chemical Abstract Service Number (CAS#)			104518	135988	108907	106467	99876	91576	103651	526738	95636	108678	Various	91576	56553	50328	205992	207089	218019	206440	85018	129000	Various	1336363	7440382	7440393	7440439	16065831	7439921	7439976	7782492	7440224
Sample ID	Sample Date	Sample Depth (feet bgs)	VOCs											SVOCs/PNAs										PCBs	Metals							
SB-1	12/21/2020	0.5-1.5	<70	<70	<70	<100	800	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SB-2	12/21/2020	0.5-1.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		3.5-4.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SB-3	12/21/2020	2.5-3.5	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		13.0-14.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	13,800	6,750	N/A	N/A	N/A
SB-4	12/21/2020	6.5-7.5	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	10,400	24,200	N/A	N/A	N/A
SB-5	12/21/2020	2.0-3.0	<50	<50	<50	<100	<100	<100	<50	<50	<50	<50	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	2,870	2,660	N/A	N/A	N/A
SB-6	12/21/2020	2.0-3.0	480	220	<70	<100	400	<100	<70	870	1,280	940	<MDL	N/A	400	400	600	700	400	600	400	600	<MDL	330	N/A	N/A	780	12,700	512,000	N/A	N/A	N/A
SB-7	12/21/2020	1.0-2.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	12,900	6,780	N/A	N/A	N/A
		5.5-6.5	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	13,300	6,180	N/A	N/A	N/A
SB-8	01/21/2021	2.0-3.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	500	400	500	<MDL	<330	N/A	N/A	260	18,700	14,400	N/A	N/A	N/A
SB-9	01/21/2021	2.0-3.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	360	12,000	40,000	N/A	N/A	N/A
SB-10	02/22/2021	3.0-4.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	19,700	20,500	N/A	N/A	N/A
		9.0-10.0	<70	<70	<70	<100	<100	<100	<70	<70	<70	<70	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	16,100	7,370	N/A	N/A	N/A
SB-11	02/22/2021	2.0-3.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	2,860	2,050	N/A	N/A	N/A
SB-12	02/22/2021	4.0-5.0	9,900	5,600	2,700	2,000	2,000	1,000	5,200	4,900	8,900	2,500	<MDL	440	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	2,750	105,000	360	15,100	15,200	<50	440	<200
		7.0-8.0	<60	<60	<60	<100	<100	<100	<60	<60	<60	<60	<MDL	N/A	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	N/A	N/A	<200	11,800	7,880	N/A	N/A	N/A
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, June 25, 2018 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020																																
Residential (µg/Kg)																																
Statewide Default Background Levels			NA	NA	NA	NA	NL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,800	75,000	1,200	18,000	21,000	130	410	1,000
Drinking Water Protection (Res DWP)			1,600	1,600	2,000	1,700	NL	57,000	1,600	1,800	2,100	1,800	Various	57,000	NLL	NLL	NLL	NLL	NLL	7.30E+05	56,000	4.80E+05	Various	NLL	4,600	1.30E+06	6,000	30,000	7.00E+05	1,700	4,000	4,500
Groundwater Surface Water Interface Protection (GSIP)			ID	ID	500	360	NL	4,200	ID	570	570	1,100	Various	4,200	NLL	NLL	NLL	NLL	NLL	5,500	2,100	ID	Various	NLL	4,600	(G)	2,600 (G,X)	2.10E+09 (G,X)	1.80E+06 (G,X)	50 (M); 1.2	400	100 (M); 27
Soil Volatilization to Indoor Air Inhalation (Res SVII)			ID	ID	1.20E+05	19,000	NL	2.70E+06	ID	2.6E+06 (C)	4.3E+06 (C)	2.6E+06 (C)	Various	2.70E+06	NLV	NLV	ID	NLV	ID	1.0E+9 (D)	2.8E+06	1.0E+9 (D)	Various	1.2E+03	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			ID	ID	7.70E+05	77,000	NL	1.50E+06	ID	1.60E+07	2.10E+07	1.60E+07	Various	1.50E+06	NLV	NLV	ID	NLV	ID	7.40E+08	1.60E+05	6.5E+08	Various	2.40E+05	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness			ID	ID	9.90E+05	77,000	NL	1.50E+06	ID	3.80E+08	5.00E+08	3.80E+08	Various	1.50E+06	NLV	NLV	ID	NLV	ID	7.4E+08	1.60E+05	6.5E+08	Various	7.9E+06	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness			ID	ID	2.10E+06	1.10E+05	NL	1.50E+06	ID	3.80E+08	5.00E+08	3.80E+08	Various	1.50E+06	NLV	NLV	ID	NLV	ID	7.4E+08	1.60E+05	6.5E+08	Various	7.9E+06	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV
Ambient Air Particulate Soil Inhalation (Res PSI)			2.00E+09	4.00E+08	4.70E+09	4.50E+08	NL	6.70E+08	1.30E+09	8.20E+10	8.20E+10	8.20E+10	Various	6.70E+08	ID	1.5E+06	ID	ID	ID	9.3E+09	6.7E+06	6.7E+09	Various	5.2E+06	7.20E+05	3.30E+08	1.70E+06	2.60E+05	1.0E+08	2.00E+07	1.30E+08	6.70E+06
Direct Contact (Res DC)			2.50E+06	2.50E+06	4.3E+06 (C)	4.00E+05	NL	8.10E+06	2.50E+06	3.2E+07 (C)	3.2E+07 (C)	3.2E+07 (C)	Various	8.10E+06	20,000	2,000	20,000	2.00E+05	2.0E+06	4.6E+07	1.6E+06	2.9E+07	Various	(T)	7,600	3.70E+07	5.50E+05	2.50E+06	4.00E+05	1.60E+05	2.60E+06	2.50E+06
Nonresidential (µg/Kg)																																
Drinking Water Protection (Nonres DWP)			4,600	4,600	2,000	1,700	NL	1.70E+05	4,600	1,800	2,100	1,800	Various	1.70E+05	NLL	NLL	NLL	NLL	NLL	7.30E+05	1.60E+05	4.80E+05	Various	NLL	4,600	1.30E+06	6,000	30,000	7.00E+05	1,700	4,000	4,500
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			ID	ID	2.20E+05	1.00E+05	NL	4.90E+06	ID	4.8E+06 (C)	8.0E+06 (C)	4.8E+06 (C)	Various	4.90E+06	NLV	NLV	ID	NLV	ID	1.0E+9 (D)	5.1E+06	1.0E+9 (D)	Various	1.6E+07	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			ID	ID	9.20E+05	2.60E+05	NL	1.80E+06	ID	1.90E+07	2.50E+07	1.90E+07	Various	1.80E+06	NLV	NLV	ID	NLV	ID	8.9E+08	1.90E+05	7.8E+08	Various	8.10E+05	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV
Ambient Air Finite VSI for 5 Meter Source Thickness			ID	ID	1.10E+06	2.60E+05	NL	1.80E+06	ID	4.60E+08	6.00E+08	4.60E+08	Various	1.80E+06	NLV	NLV	ID	NLV	ID	8.8E+08	1.90E+05	7.8E+08	Various	2.8E+07	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV
Ambient Air Finite VSI for 2 Meter Source Thickness			ID	ID	2.10E+06	3.40E+05	NL	1.80E+06	ID	4.60E+08	6.00E+08	4.60E+08	Various	1.80E+06																		

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS: VOCs, PNAs, CADMIUM, CHROMIUM, AND LEAD
300-394 SOUTH OLD WOODWARD AVENUE AND 294 EAST BROWN STREET, BIRMINGHAM, MICHIGAN
PM PROJECT # 01-12660-0-0002

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Cadmium, Chromium, and Lead (µg/L)				VOCs	PNAs	Cadmium	Chromium	Lead
Chemical Abstract Service Number (CAS#)				Various	Various	7440439	16065831	7439921
Sample ID	Sample Date	Screen Depth (bgs)	Depth to Groundwater (bgs)	VOCs	PNAs	Metals		
TMW-6	12/21/2020	5.56-10.56	4.66	<MDL	<MDL	<0.5	<5	<3
TMW-9	01/21/2021	1.28-6.28	3.46	<MDL	<MDL	<0.5	<5	<3
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Groundwater Cleanup Criteria Table 1: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, August 3, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020								
Residential/Nonresidential (µg/L)								
Residential Drinking Water (Res DW)				Various	Various	5.0 {A}	100 {A}	4.0 {L}
Residential Health Based Drinking Water Values				Various	Various	NL	NL	NL
Nonresidential Drinking Water (Nonres DW)				Various	Various	5.0 {A}	100 {A}	4.0 {L}
Nonresidential Health Based Drinking Water Values				Various	Various	NL	NL	NL
Groundwater Surface Water Interface (GSI)				Various	Various	44 {G,X}	1500	200 {G,X}
Residential Groundwater Volatilization to Indoor Air Inhalation (Res GVII) ¹				Various	Various	NLV	NLV	NLV
Nonresidential Groundwater Volatilization to Indoor Air Inhalation (Nonres GVII) ¹				Various	Various	NLV	NLV	NLV
Screening Levels (µg/L)								
Residential Shallow Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Nonresidential Shallow Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	NA	NA	NA
Water Solubility				Various	Various	NA	NA	NA
Flammability and Explosivity Screening Level				Various	Various	ID	ID	ID

Criteria Exceeded

BOLD

Value Exceeds Criteria

Value Exceeds Screening Level

underline

Screening Level Exceeded

µg/L

Micrograms Per Liter

bgs

Below Ground Surface (feet)

<MDL

Not detected at levels above the laboratory Method Detection Limit (MDL) or Minimum Quantitative Level (MQL)

¹

Tier 1 GVII Criteria based on 3 meter (or greater) groundwater depth

NA

Not Applicable

NL

Not Listed

NLV

Not Likely to Volatilize

ID

Insufficient Data

5.0 {A}

Other Alpha notation, please refer to MDEQ Footnotes R 299.49 Footnotes for Generic Cleanup Crtieria Tables, December 30, 2013

{G}

Metal GSI Criteria for Surface Water Not Protected for Drinking Water Use based on 100 mg/L CaCO3 Hardness: Station ID 821270, Detroit River, near Ecorse, MI.

Appendix C

USER QUESTIONNAIRE

PHASE I ESA - ASTM USER QUESTIONNAIRE

Project:

300-360 South Old Woodward Avenue and 294 East Brown Street,
Birmingham, Michigan

The ASTM Standard defines a User as "the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") the **User** must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

If you are the User, please answer the following questions to the best of your knowledge and provide a completed copy to PM.

1. Environmental Clean-up liens that are filed or recorded against the site (40 CFR 312.25)

Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

Yes

No

If so, please describe that type of liens:

2. Activity and land use limitations that are in place on the site or that have been filed in a registry (40 CFR 312.26)

Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions, or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?

Yes

No

If yes, what type of AULs are you aware of?

3. Specialized knowledge or experience of the person seeking to qualify for a LLP (40 CFR 312.28)

As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and the processes used by this type of business?

Yes

No

If yes, what type of business are you associated with?

What types of chemicals are used in your business?

PHASE I ESA - ASTM USER QUESTIONNAIRE

Project:

300-360 South Old Woodward Avenue and 294 East Brown Street,
Birmingham, Michigan

4. Relationship to the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29)

Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

Yes

No

If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

Yes

No

5. Commonly known or reasonably ascertainable information about the property (40 CFR 312.30)

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example as a user:

a. Do you know of the past uses of the property?

Yes

No

If yes, please list what past uses are you aware of?

b. Do you know of specific chemicals that are present or once were present at the property?

Yes

No

If yes, please list what chemicals you are aware of?

c. Do you know of spills or other chemical releases that have taken place on the property?

Yes

No

d. Do you know of any environmental cleanups which have taken place on the property?

Yes

No

If yes, do you have copies of any of the reports documenting the work?

Yes

No

If you have any documentation of previous environmental site assessment activities or other relevant information, please provide copies to PM when you return this questionnaire.

PHASE I ESA - ASTM USER QUESTIONNAIRE

Project:	300-360 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan
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6. The degree of the obviousness of the presence of likely presence of contamination at the property and the ability to detect the contamination by appropriate investigation (40CFR 312.31)

As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination on the property? Yes

No

If yes, please comment on what those indicators are:

Completed By (User):

Baji Grapi UG

Company Name for
Real Estate
Transaction:

Street Address:

City, State, Zip code:

User Phone Number:

Signature of the User:

Ben H. H., VP

Date Questionnaire was
completed on:

11/11/2020

SOIL SURVEY INFORMATION



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Oakland County, Michigan**



Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Oakland County, Michigan

Survey Area Data: Version 19, Jun 1, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EtmaaE	Udorthents and Udipsamments, nearly level to hilly	1.4	100.0%
Totals for Area of Interest		1.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Oakland County, Michigan

EtmaaE—Udorthents and Udipsamments, nearly level to hilly

Map Unit Setting

National map unit symbol: 2m785
Elevation: 680 to 1,000 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 137 to 179 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 60 percent
Udipsamments and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 8 inches: silt loam
C - 8 to 39 inches: clay loam
Cd - 39 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Udipsamments

Setting

Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Concave

Custom Soil Resource Report

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 4 inches: fine sandy loam

C1 - 4 to 12 inches: loamy fine sand

C2 - 12 to 30 inches: loamy fine sand

C3 - 30 to 80 inches: gravelly loamy fine sand

Properties and qualities

Slope: 0 to 30 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Hydrologic Soil Group: A

Ecological site: F099XY004MI - Warm Dry Sandy Ridge

Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected

initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

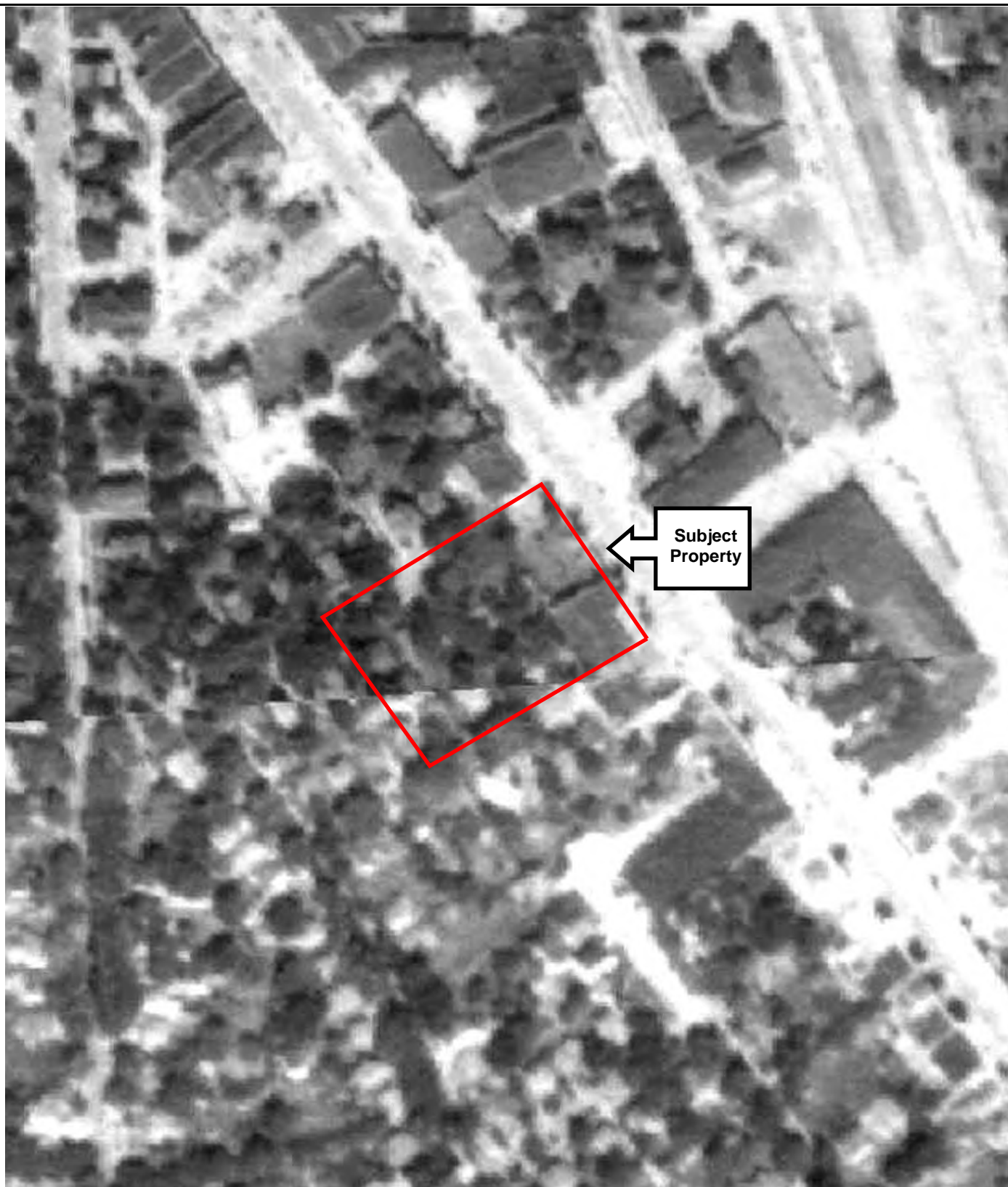
For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Custom Soil Resource Report

Soil Features—Oakland County, Michigan									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		<i>Low-RV-High</i>	<i>Range</i>		<i>Low-High</i>	<i>Low-High</i>			
		<i>In</i>	<i>In</i>		<i>In</i>	<i>In</i>			
EtmaaE— Udorthents and Udipsamments, nearly level to hilly									
Udorthents	Densic material	- 39-	—	Very strongly cemented	—	—	Moderate	Moderate	Low
Udipsamments		—	—		—	—	Low	Low	Low

AERIAL PHOTOGRAPHS

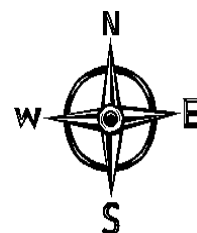


Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

Aerial Year: 1940

Source: Oakland County



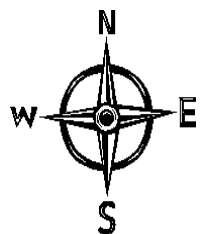


Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan


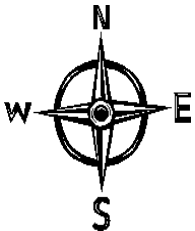
PM Project No. 01-12660-0-0004

Aerial Year: 1949

Source: Wayne State University





	Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan	
	PM Project No. 01-12660-0-0004	
	Aerial Year: 1952	
	Source: Wayne State University	

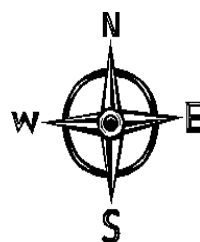


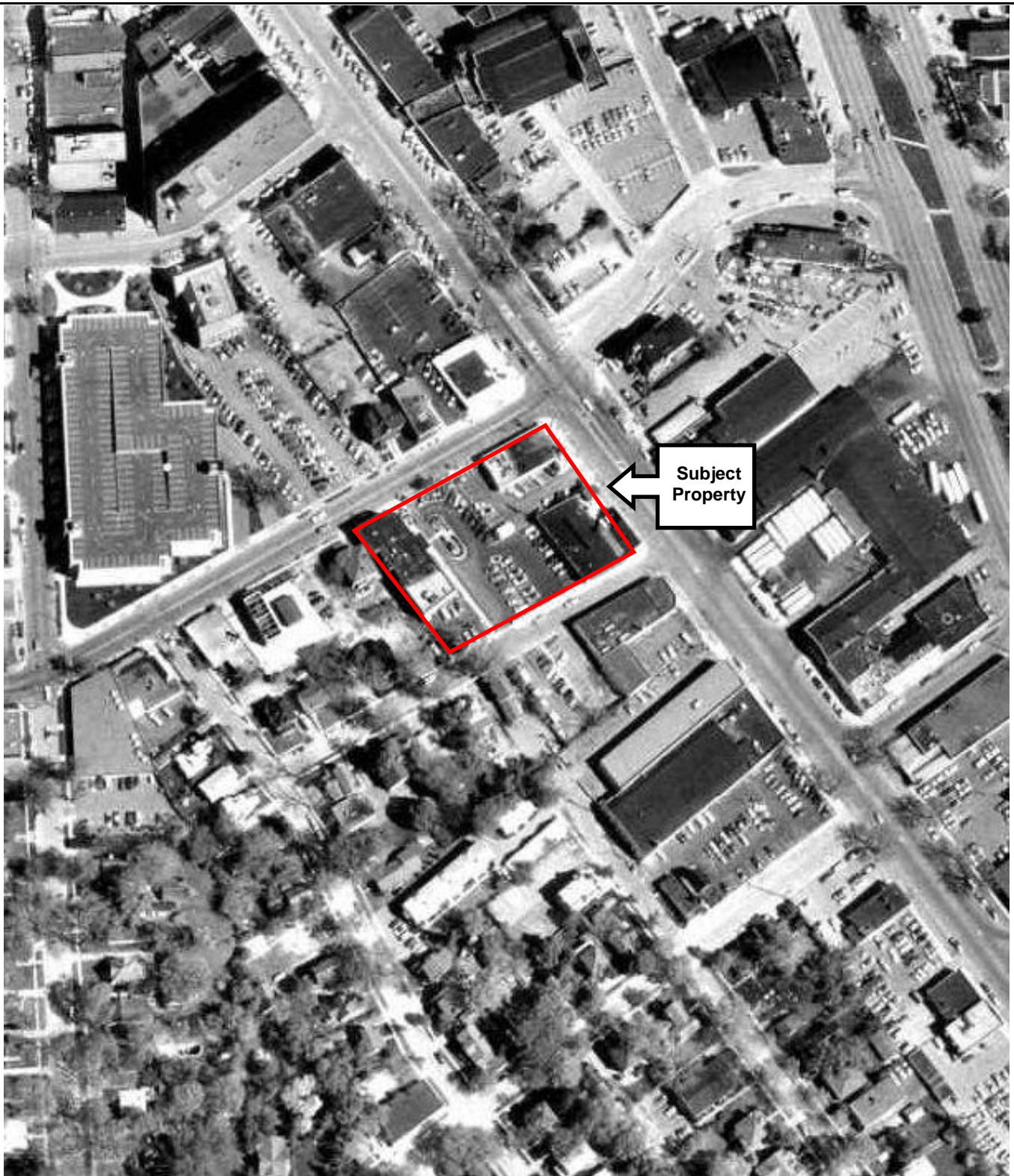
Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

Aerial Year: 1963

Source: Oakland County



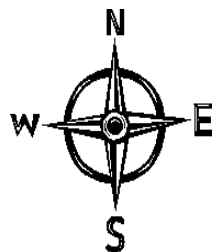


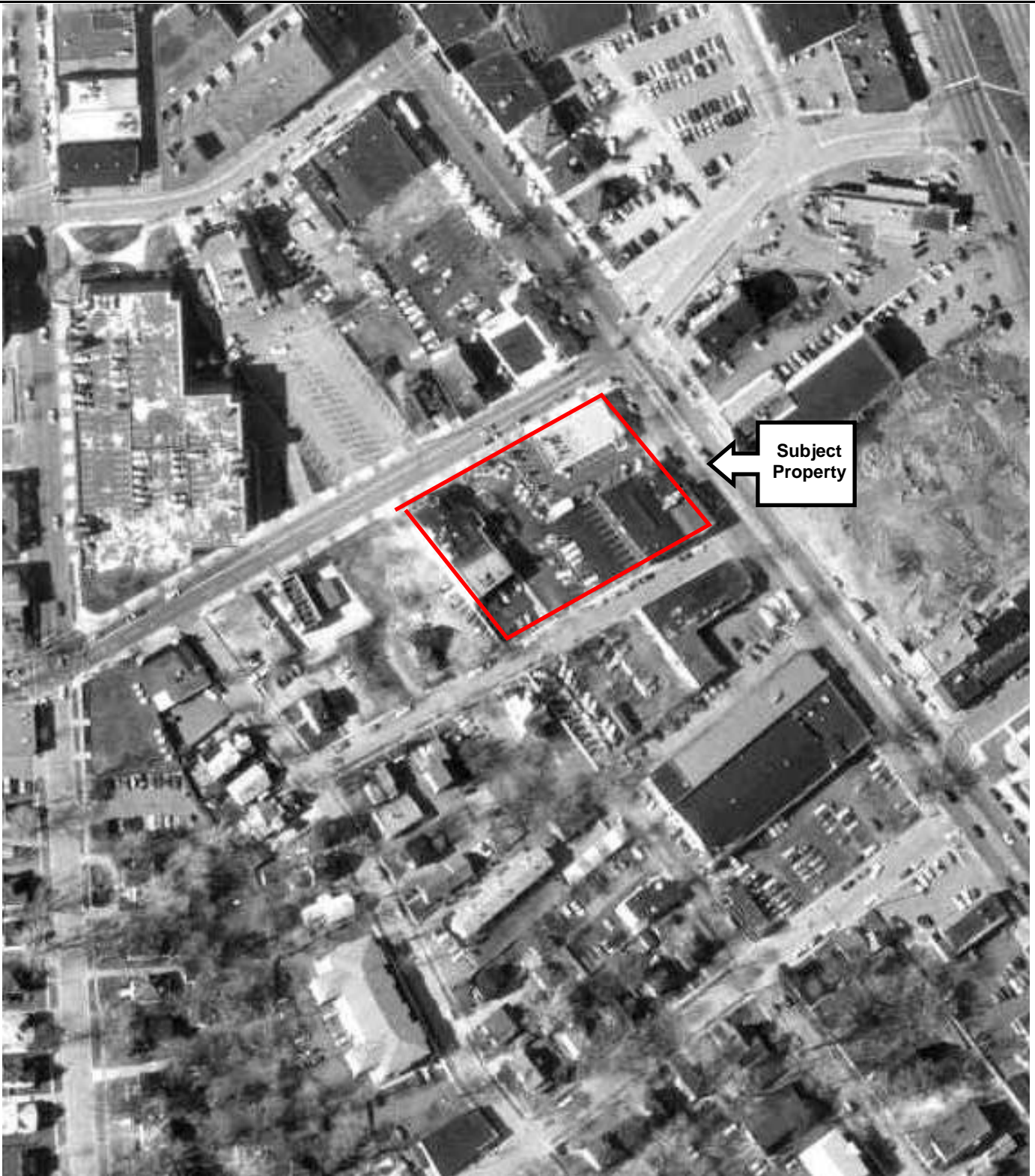
Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

Aerial Year: 1974

Source: Oakland County



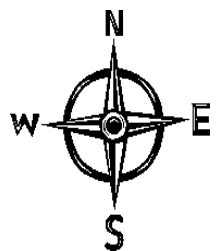


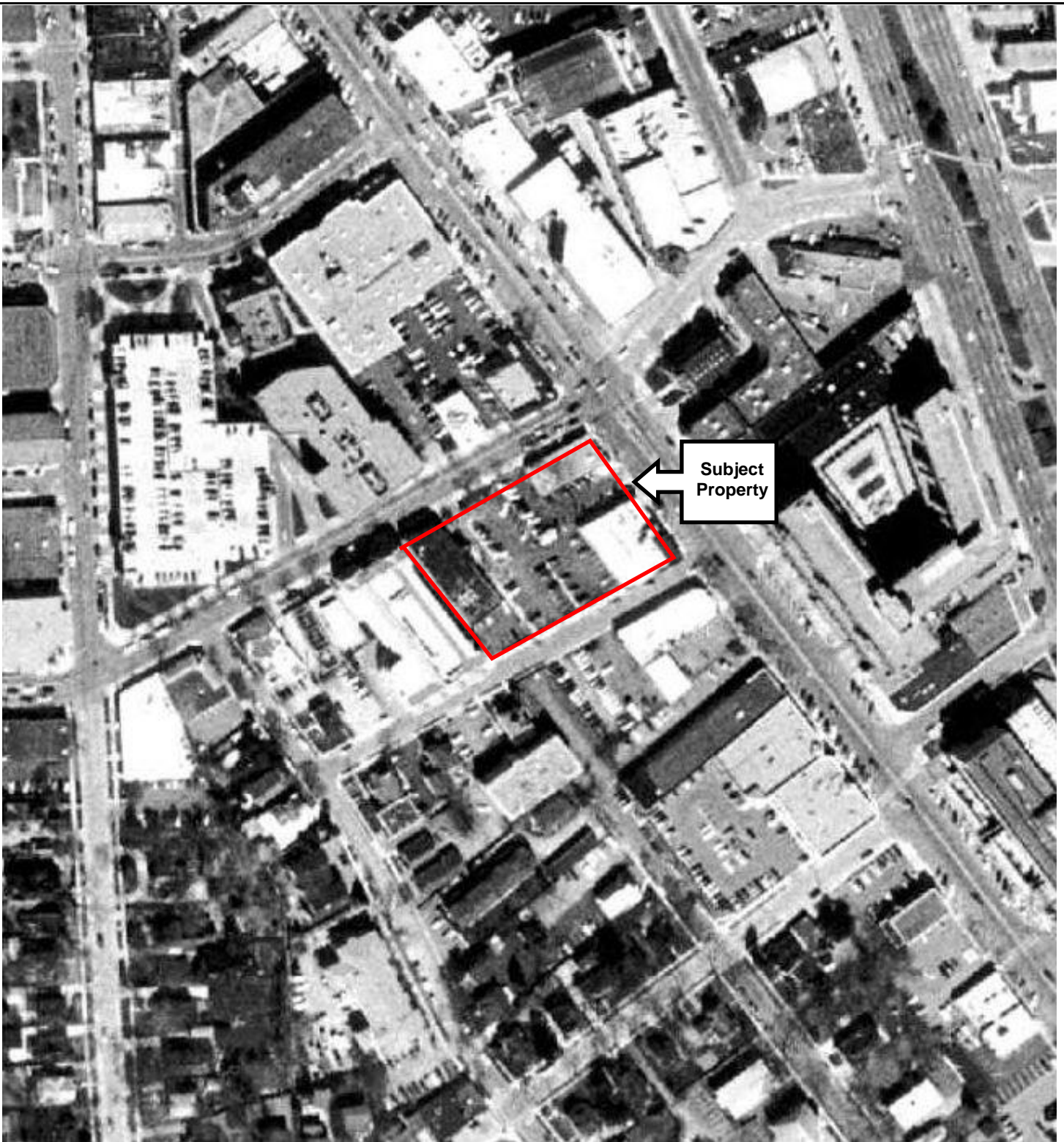
Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

Aerial Year: 1980

Source: Oakland County



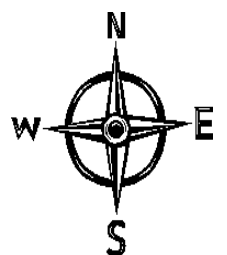


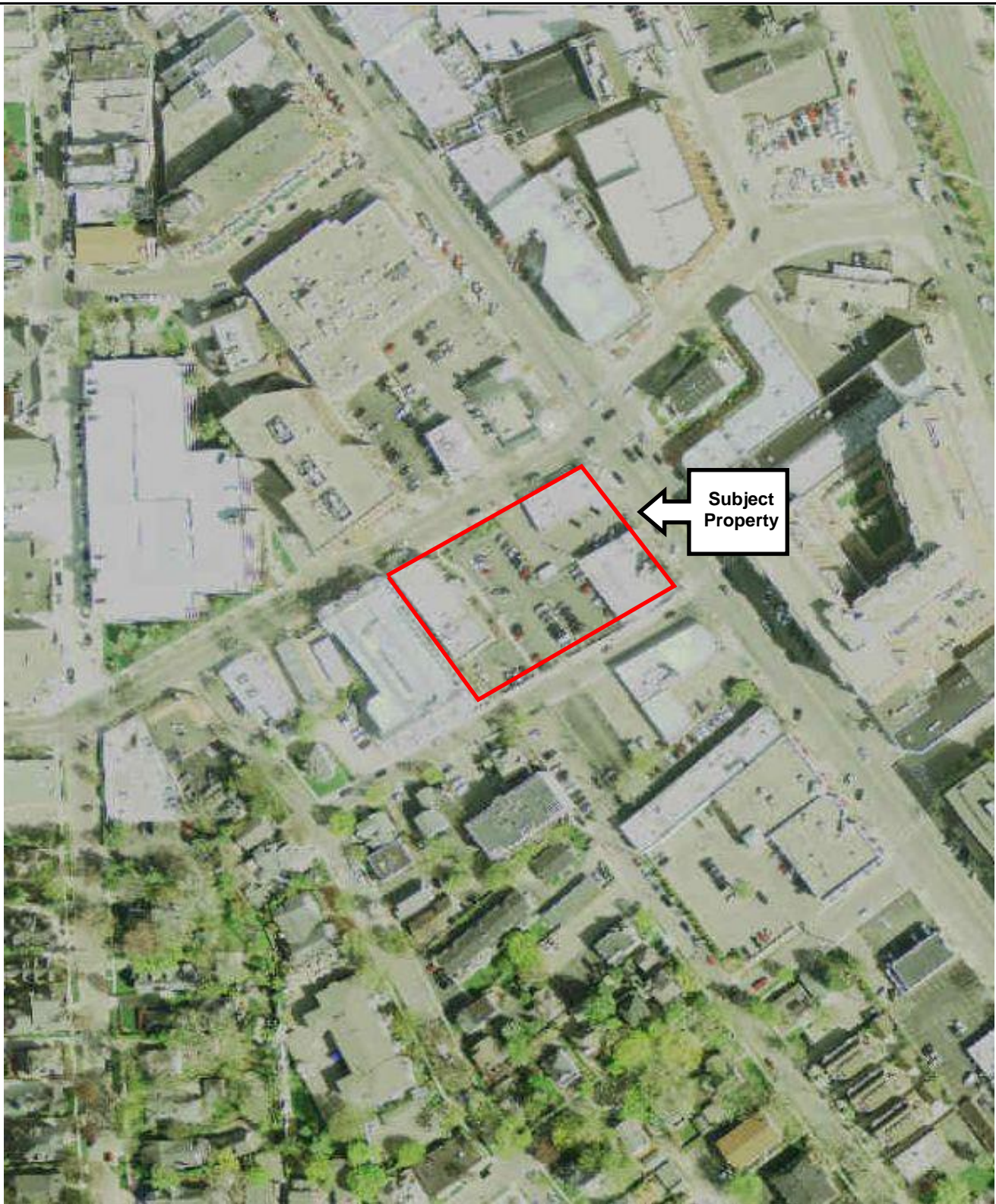
Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

Aerial Year: 1997

Source: Oakland County



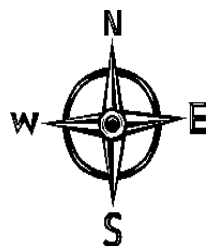


Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

Aerial Year: 2010

Source: Oakland County



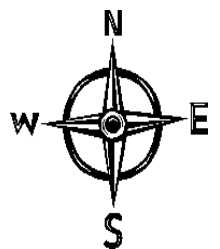


Location: 300-394 South Old Woodward Avenue and 294 East Brown Street, Birmingham, Michigan

PM Project No. 01-12660-0-0004

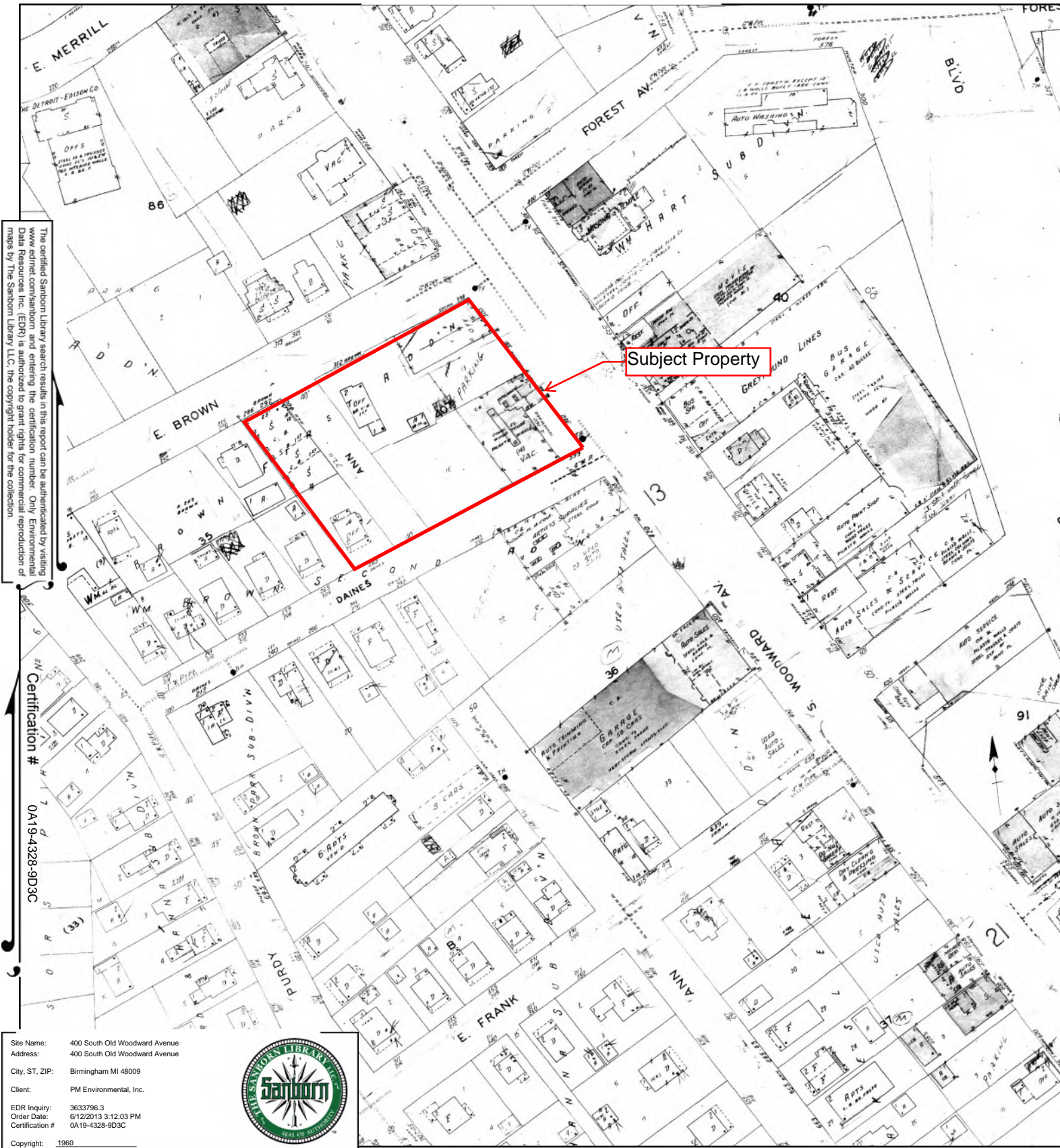
Aerial Year: 2017

Source: Oakland County

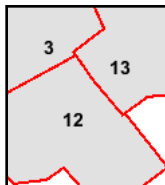


SANBORN FIRE INSURANCE MAPS

1960 Certified Sanborn Map



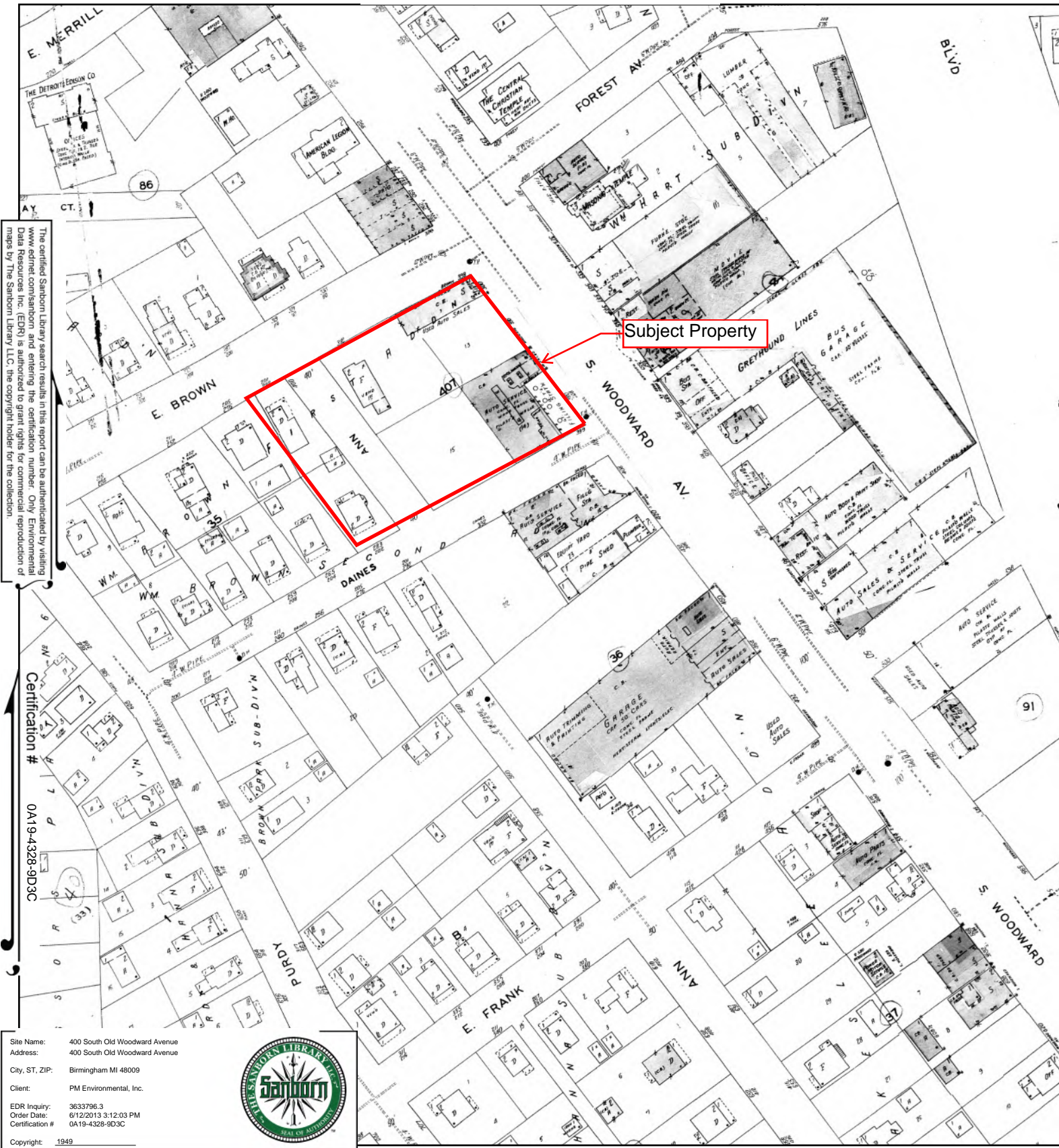
This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.



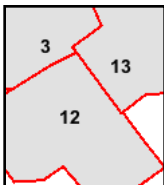
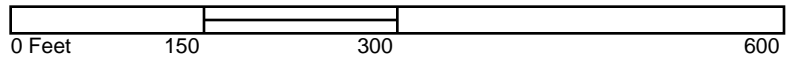
Volume 1, Sheet 3
 Volume 1, Sheet 12
 Volume 1, Sheet 13



1949 Certified Sanborn Map



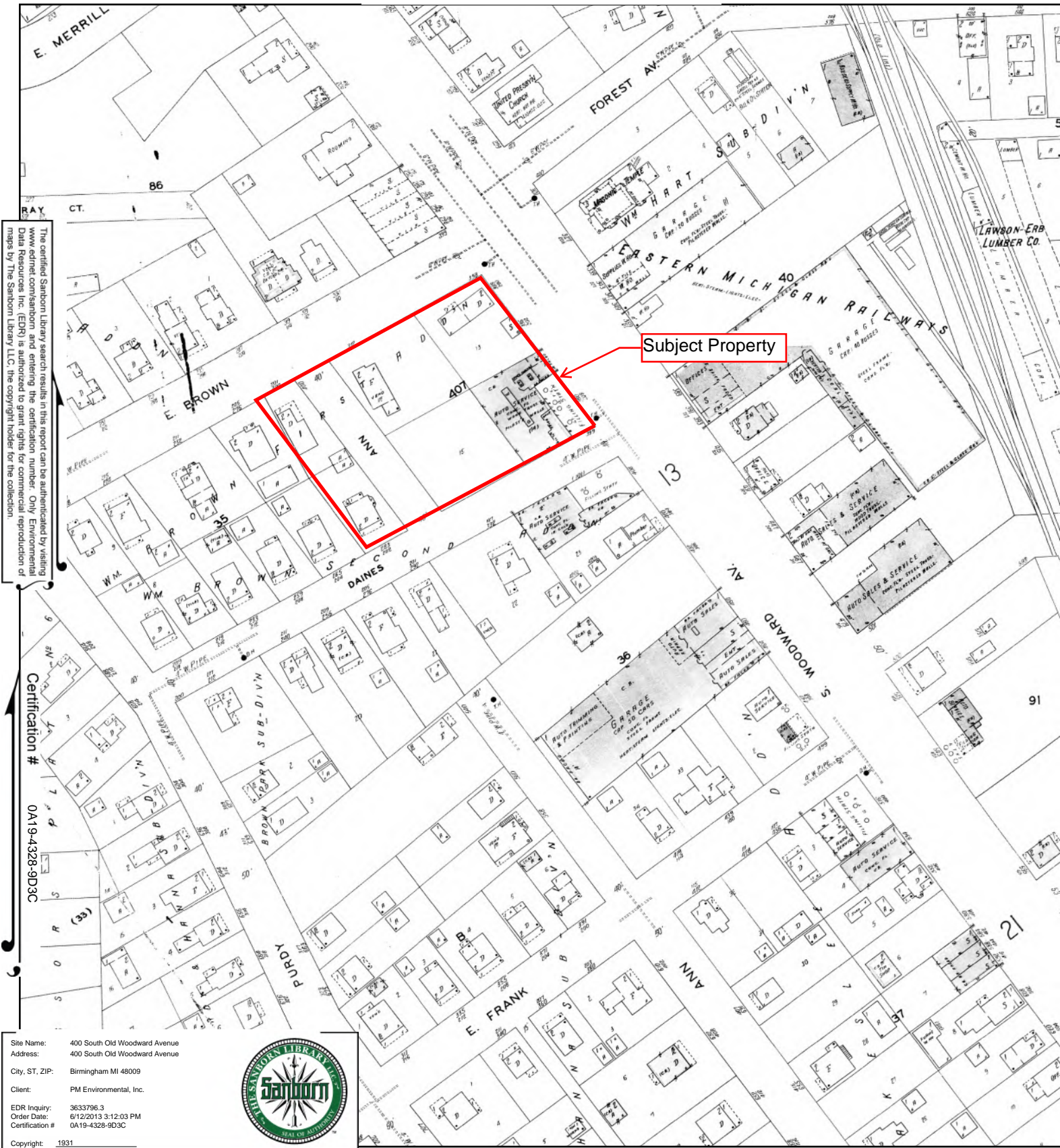
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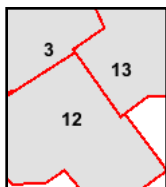
Volume 1, Sheet 3
Volume 1, Sheet 12
Volume 1, Sheet 13



1931 Certified Sanborn Map



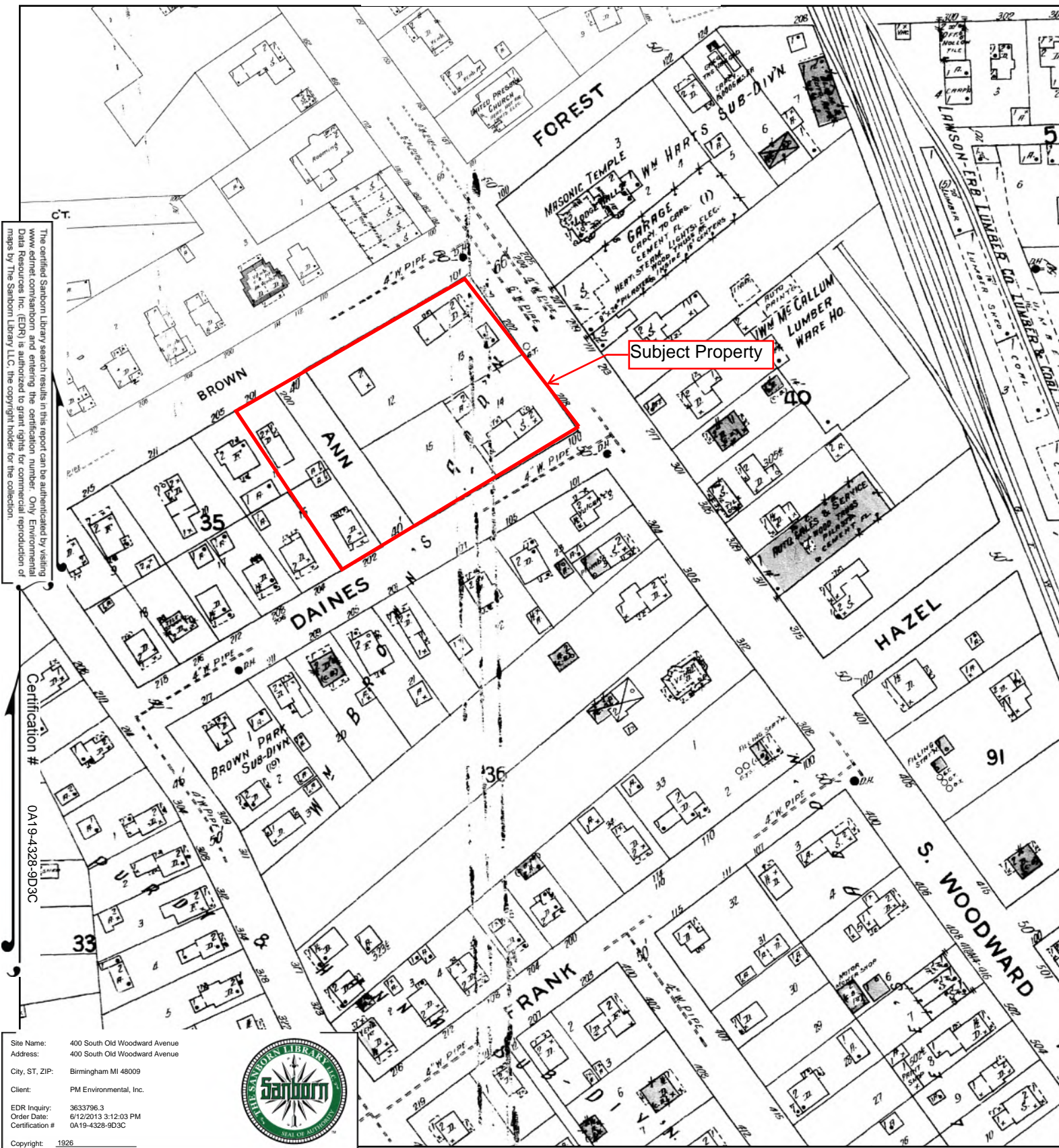
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 Outlined areas indicate map sheets within the collection.



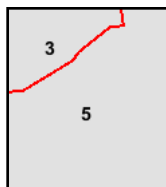
Volume 1, Sheet 3
 Volume 1, Sheet 12
 Volume 1, Sheet 13



1926 Certified Sanborn Map

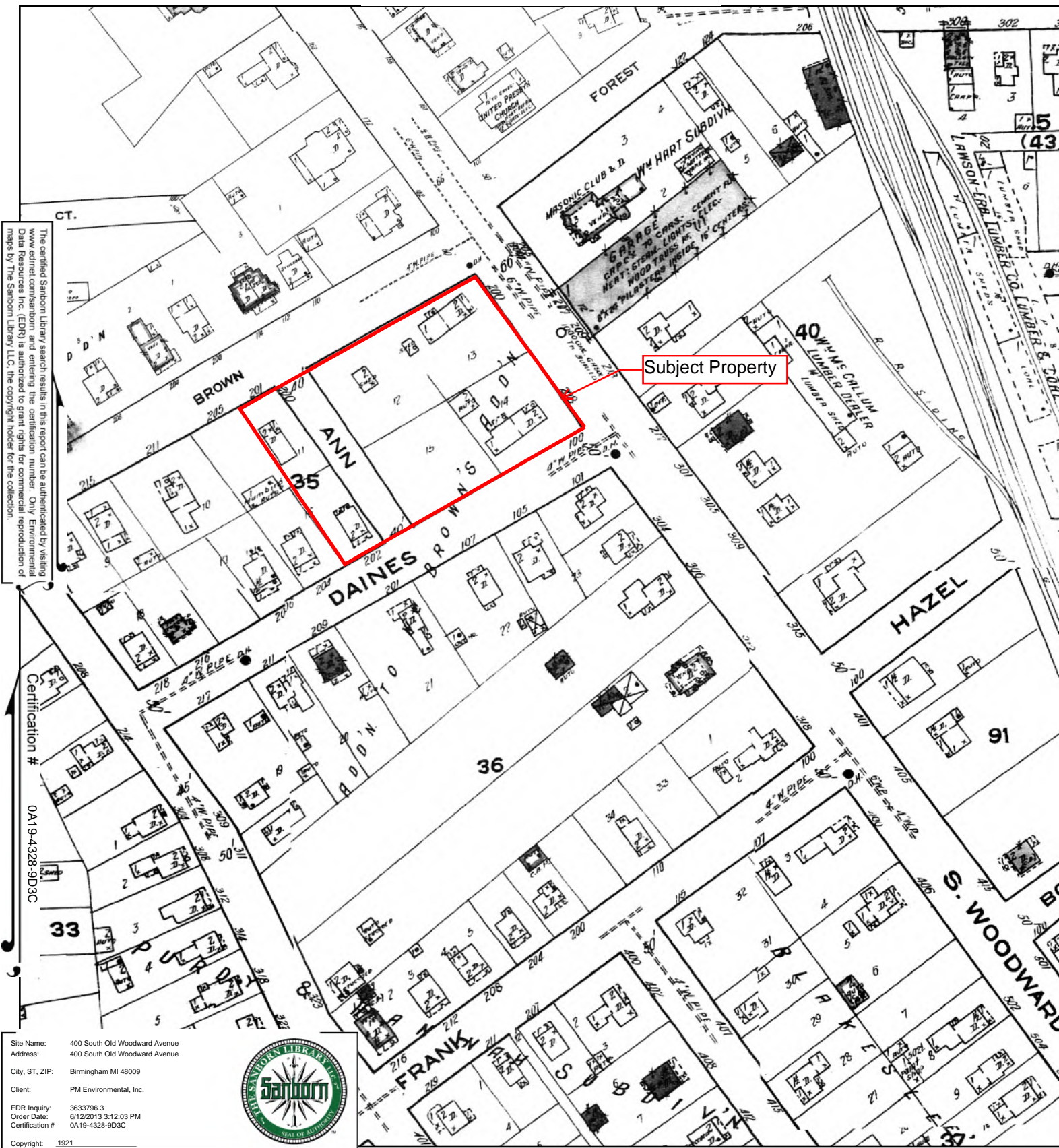


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Outlined areas indicate map sheets within the collection.

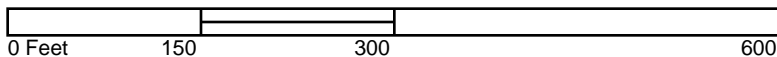


Volume 1, Sheet 5
Volume 1, Sheet 3

1921 Certified Sanborn Map



This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.



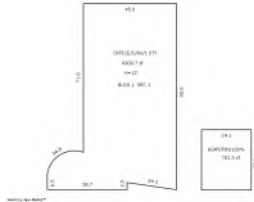
Volume 1, Sheet 4
 Volume 1, Sheet 5



ASSESSING DEPARTMENT RECORDS

300 S OLD WOODWARD AVE BIRMINGHAM, MI 48009-6254 (Property Address)

Parcel Number: 08-19-36-204-006 Account Number: 00383-10050



Item 1 of 1

0 Images / 1 Sketch

Property Owner: BRB EQUITIES LLC**Summary Information**

- > Commercial/Industrial Building Summary
 - Yr Built: 1968
 - # of Buildings: 1
 - Total Sq.Ft.: 4,300
- > 12 Special Assessments found
- > 50 Building Department records found
- > 4 Invoices Found, Amount Due: 0.00
- > Assessed Value: \$726,760 | Taxable Value: \$382,610
- > Property Tax information found
- > Utility Billing information found

Owner and Taxpayer Information

Owner	BRB EQUITIES LLC 300 S OLD WOODWARD AVE BIRMINGHAM, MI 48009-6254	Taxpayer	SEE OWNER INFORMATION
--------------	---	-----------------	-----------------------

General Information for Tax Year 2021

Property Class	201 COMMERCIAL-IMPROVED	Unit	08 City of Birmingham
School District	BIRMINGHAM CITY SCHOOL DIST	Assessed Value	\$726,760
ITOnly	POST	Taxable Value	\$382,610
PPBusCode	0	State Equalized Value	\$726,760
User Alpha 1	Not Available	Date of Last Name Change	01/28/2013
User Alpha 3	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
User Alpha 2	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information**Homestead Date** No Data to Display

Principal Residence Exemption	June 1st	Final
2021	0.0000 %	0.0000 %

Previous Year Information

Year	MBOR Assessed	Final SEV	Final Taxable
2020	\$652,670	\$652,670	\$377,330
2019	\$628,820	\$628,820	\$370,300
2018	\$599,100	\$599,100	\$361,630

Land Information

Zoning Code	BI	Total Acres	0.304
Land Value	\$1,024,260	Land Improvements	\$8,022
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	E.C.F. Table COF	Mortgage Code	00000
Lot Dimensions/Comments	No Data to Display	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
No lots found.		
Total Frontage: 0.00 ft		Average Depth: 0.00 ft

Legal Description

T2N, R10E, SEC 36 BROWN'S ADD E 50 FT OF LOT 12, ALSO WLY PART OF LOT 13 MEAS 82.45 FT ON N LOT LINE & 82.48 FT ON S LOT LINE

Land Division Act Information

Date of Last Split/Combine	No Data to Display	Number of Splits Left	0
Date Form Filed	No Data to Display	Unallocated Div.s of Parent	0
Date Created	01/01/0001	Unallocated Div.s Transferred	0
Acreage of Parent	0.00	Rights Were Transferred	Not Available
Split Number	0	Courtesy Split	Not Available
Parent Parcel	No Data to Display		

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
No sales history found.						

Building Information - 4300 sq ft Office Buildings (Commercial)

Floor Area	4,300 sq ft	Estimated TCV	Not Available
Occupancy	Office Buildings	Class	C
Stories Above Ground	1	Average Story Height	12 ft
Basement Wall Height	8 ft	Identical Units	Not Available
Year Built	1968	Year Remodeled	No Data to Display
Percent Complete	100%	Heat	Package Heating & Cooling
Physical Percent Good	40%	Functional Percent Good	100%
Economic Percent Good	100%	Effective Age	53 yrs

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394 S OLD WOODWARD AVE BIRMINGHAM, MI 48009-6254 (Property Address)

Parcel Number: 08-19-36-204-014 Account Number: 00381-22126



Item 1 of 1

[0 Images / 1 Sketch](#)**Property Owner: FRANK KONJAREVICH TRUST****Summary Information**

- > Commercial/Industrial Building Summary
 - Yr Built: 1963
 - # of Buildings: 1
 - Total Sq.Ft.: 7,913
- > 11 Special Assessments found
- > 38 Building Department records found
- > 1 Invoice Found, Amount Due: 0.00
- > Assessed Value: \$752,970 | Taxable Value: \$533,370
- > Property Tax information found
- > Utility Billing information found

Owner and Taxpayer Information

Owner	FRANK KONJAREVICH TRUST LOIS KONJAREVICH TRUST 394 S OLD WOODWARD AVE BIRMINGHAM, MI 48009-6254	Taxpayer	SEE OWNER INFORMATION
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General Information for Tax Year 2021

Property Class	201 COMMERCIAL-IMPROVED	Unit	08 City of Birmingham
School District	BIRMINGHAM CITY SCHOOL DIST	Assessed Value	\$752,970
ITOnly	POST	Taxable Value	\$533,370
PPBusCode	0	State Equalized Value	\$752,970
User Alpha 1	Not Available	Date of Last Name Change	06/23/2010
User Alpha 3	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
User Alpha 2	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information**Homestead Date** No Data to Display

Principal Residence Exemption	June 1st	Final
2021	0.0000 %	0.0000 %

Previous Year Information

Year	MBOR Assessed	Final SEV	Final Taxable
2020	\$716,790	\$716,790	\$526,010
2019	\$698,400	\$698,400	\$516,210
2018	\$638,660	\$638,660	\$504,120

Land Information

Zoning Code	BI	Total Acres	0.189
Land Value	\$782,100	Land Improvements	\$0
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	E.C.F. Table CRL	Mortgage Code	00000
Lot Dimensions/Comments	No Data to Display	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
No lots found.		
Total Frontage: 0.00 ft		Average Depth: 0.00 ft

Legal Description

T2N, R10E, SEC 36 BROWN'S ADD NO 1 LOT 14 EXC PART TAKEN FOR WOODWARD AVE WIDENING

Land Division Act Information

Date of Last Split/Combine	No Data to Display	Number of Splits Left	0
Date Form Filed	No Data to Display	Unallocated Div.s of Parent	0
Date Created	01/01/0001	Unallocated Div.s Transferred	0
Acreage of Parent	0.00	Rights Were Transferred	Not Available
Split Number	0	Courtesy Split	Not Available
Parent Parcel	No Data to Display		

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
No sales history found.						

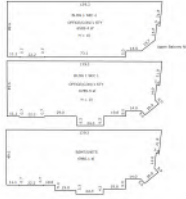
Building Information - 7913 sq ft Stores - Retail (Commercial)

Floor Area	7,913 sq ft	Estimated TCV	Not Available
Occupancy	Stores - Retail	Class	C
Stories Above Ground	1	Average Story Height	18 ft
Basement Wall Height	8 ft	Identical Units	Not Available
Year Built	1963	Year Remodeled	No Data to Display
Percent Complete	100%	Heat	Zoned A.C. Warm & Cooled Air
Physical Percent Good	42%	Functional Percent Good	100%
Economic Percent Good	100%	Effective Age	43 yrs

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294 E BROWN ST BIRMINGHAM, MI 48009-6205 (Property Address)

Parcel Number: 08-19-36-204-021 Account Number: 33317-10080



Item 1 of 1

[0 Images / 1 Sketch](#)**Property Owner: TROTT PROPERTIES 294 LLC****Summary Information**

- > Commercial/Industrial Building Summary
 - Yr Built: 1956
 - # of Buildings: 2
 - Total Sq.Ft.: 13,290
- > 11 Special Assessments found
- > 79 Building Department records found
- > 4 Invoices Found, Amount Due: 0.00
- > Assessed Value: \$1,908,090 | Taxable Value: \$1,368,110
- > Property Tax information found
- > Utility Billing information found

Owner and Taxpayer Information

Owner	TROTT PROPERTIES 294 LLC 266 ELM ST STE 100 BIRMINGHAM, MI 48009-6337	Taxpayer	SEE OWNER INFORMATION
--------------	---	-----------------	-----------------------

General Information for Tax Year 2021

Property Class	201 COMMERCIAL-IMPROVED	Unit	08 City of Birmingham
School District	BIRMINGHAM CITY SCHOOL DIST	Assessed Value	\$1,908,090
ITOnly	POST	Taxable Value	\$1,368,110
PPBusCode	0	State Equalized Value	\$1,908,090
User Alpha 1	Not Available	Date of Last Name Change	09/01/2020
User Alpha 3	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
User Alpha 2	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information**Homestead Date** No Data to Display

Principal Residence Exemption	June 1st	Final
2021	0.0000 %	0.0000 %

Previous Year Information

Year	MBOR Assessed	Final SEV	Final Taxable
2020	\$1,759,570	\$1,759,570	\$1,349,230
2019	\$1,672,810	\$1,672,810	\$1,324,080
2018	\$1,565,230	\$1,565,230	\$1,293,050

Land Information

Zoning Code	BI	Total Acres	0.758
Land Value	\$2,271,720	Land Improvements	\$16,167
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	E.C.F. Table COF	Mortgage Code	00000
Lot Dimensions/Comments	No Data to Display	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
No lots found.		
Total Frontage: 0.00 ft		Average Depth: 0.00 ft

Legal Description

T2N, R10E, SEC 36 BROWN'S ADD NELY 1/2 OF LOT 11 & SWLY 1/2 OF LOT 12, ALSO LOT 15 & NELY 1/2 OF LOT 16 OF 'BROWN'S ADD NO 1', ALSO ALL OF VAC ANN ST ADJ TO SAME

Land Division Act Information

Date of Last Split/Combine	<i>No Data to Display</i>	Number of Splits Left	0
Date Form Filed	<i>No Data to Display</i>	Unallocated Div.s of Parent	0
Date Created	01/01/0001	Unallocated Div.s Transferred	0
Acreage of Parent	0.00	Rights Were Transferred	<i>Not Available</i>
Split Number	0	Courtesy Split	<i>Not Available</i>
Parent Parcel	<i>No Data to Display</i>		

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
12/30/2009	\$2,750,000.00	WD	DDJ BIRMINGHAM LLC	TROTT PROPERTIES	03-ARM'S LENGTH	41771:326
07/03/2007	\$5,628,000.00	WD	CAMBRIDGE PROPERTY MGMT	DDJ BIRMINGHAM	03-ARM'S LENGTH	39596:704

Building Information - 6785 sq ft Office Buildings (Commercial)

Floor Area	6,785 sq ft	Estimated TCV	<i>Not Available</i>
Occupancy	Office Buildings	Class	C
Stories Above Ground	1	Average Story Height	10 ft
Basement Wall Height	10 ft	Identical Units	<i>Not Available</i>
Year Built	1956	Year Remodeled	<i>No Data to Display</i>
Percent Complete	100%	Heat	Package Heating & Cooling
Physical Percent Good	40%	Functional Percent Good	100%
Economic Percent Good	100%	Effective Age	54 yrs

Building Information - 6505 sq ft Office Buildings (Commercial)

Floor Area	6,505 sq ft	Estimated TCV	<i>Not Available</i>
Occupancy	Office Buildings	Class	C
Stories Above Ground	1	Average Story Height	10 ft
Basement Wall Height	0 ft	Identical Units	<i>Not Available</i>
Year Built	1956	Year Remodeled	<i>No Data to Display</i>
Percent Complete	100%	Heat	Package Heating & Cooling
Physical Percent Good	40%	Functional Percent Good	100%
Economic Percent Good	100%	Effective Age	54 yrs

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Appendix D

ENVIRONMENTAL DATABASE SEARCH

300-394 S Old Woodward Ave and 294 E Brown St

300-394 S Old Woodward Ave and 294 E Brown St
Birmingham, MI 48009

Inquiry Number: 06655522.2r
September 09, 2021

The EDR Radius Map™ Report



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	255
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

300-394 S OLD WOODWARD AVE AND 294 E BROWN ST
BIRMINGHAM, MI 48009

COORDINATES

Latitude (North):	42.5444390 - 42° 32' 39.98"
Longitude (West):	83.2125880 - 83° 12' 45.31"
Universal Transverse Mercator:	Zone 17
UTM X (Meters):	318320.0
UTM Y (Meters):	4712386.0
Elevation:	768 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	6066350 BIRMINGHAM, MI
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140628
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:

300-394 S OLD WOODWARD AVE AND 294 E BROWN ST
BIRMINGHAM, MI 48009

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	FORMER GASOLINE DISP	400 S OLD WOODWARD A	UST	Lower	100, 0.019, SE
A2	400 SOUTH OLD WOODWA	400 SOUTH OLD WOODWA	BEA	Lower	100, 0.019, SE
A3	GREEN'S ART SUPPLY	400 SOUTH OLD WOODWA	INVENTORY	Lower	100, 0.019, SE
A4	GREEN'S ART SUPPLY	400 SOUTH OLD WOODWA	US BROWNFIELDS	Lower	100, 0.019, SE
A5	WOODWARD DETROIT CVS	444 S OLD WOODWARD A	RCRA-VSQG	Lower	195, 0.037, SE
6	BROWN STREET OFFICE	200 EAST BROWN	BEA	Higher	197, 0.037, WSW
A7	MITCHELL GEORGE E CL	458 S WOODWARD AVE	EDR Hist Cleaner	Lower	211, 0.040, SE
A8	MITCHELL GEORGE E CL	458 S OLD WOODWARD A	EDR Hist Cleaner	Lower	221, 0.042, SE
A9	ESTATE MOTORS	464 S WOODWARD AVE	LUST, UST	Lower	230, 0.044, SE
A10	ESTATE MOTORS LTD	464 S OLD WOODWARD A	RCRA NonGen / NLR, FINDS, ECHO	Lower	231, 0.044, SE
B11	GAS STATION TV	255 S OLD WOODWARD A	EDR Hist Auto	Higher	280, 0.053, North
B12	ESSCO OF BIRMINGHAM	255 S OLD WOODWARD A	RCRA-VSQG	Higher	280, 0.053, North
C13	BRITANNIA PROPERTIES	401 S OLD WOODWARD A	EDR Hist Auto	Lower	286, 0.054, East
D14	JAX KAR WASH #048	34745 WOODWARD AVE	LUST, UST, INVENTORY, BEA, WDS	Higher	381, 0.072, NE
C15	FRANKLIN SAVINGS BAN	479 S OLD WOODWARD A	UST	Lower	399, 0.076, ESE
B16	UPTOWN ENTERTAINMENT	211 S OLD WOODWARD A	RCRA NonGen / NLR	Higher	450, 0.085, North
E17	MAVERICK EXPRESS INC	555 S WOODWARD	EDR Hist Auto	Lower	459, 0.087, SE
E18	BIRMINGHAM CLEANERS	1253 555 S WOODWARD	EDR Hist Cleaner	Lower	459, 0.087, SE
D19	WOODWARD BROWN ASSOC	34901 WOODWARD AVENU	INVENTORY	Higher	482, 0.091, NE
D20	WOODWARD BROWN ASSOC	34901 WOODWARD AVENU	BEA	Higher	498, 0.094, NE
D21	WEISS SAMONA	34901 WOODWARD AVENU	US BROWNFIELDS, FINDS	Higher	498, 0.094, NE
D22	WOODWARD BROWN ASSOC	34901 WOODWARD	INVENTORY, BEA	Higher	498, 0.094, NE
E23	MITCHELL GEORGE E CL	534 S WOODWARD AVE	EDR Hist Cleaner	Lower	519, 0.098, SE
F24	BIRMINGHAM CAMERA SH	168 S OLD WOODWARD A	RCRA NonGen / NLR, FINDS, ECHO	Higher	612, 0.116, NNW
G25	34965 WOODWARD AVENU	34965 WOODWARD AVENU	INVENTORY, BEA	Higher	627, 0.119, NNE
H26	SPEEDWAY #8721	34750 WOODWARD 347 B	LUST, INVENTORY, Financial Assurance	Higher	679, 0.129, ENE
H27	SPEEDWAY LLC	34750 WOODWARD AVE	RCRA-VSQG, UST, FINDS, ECHO	Higher	679, 0.129, ENE
G28	SHELL - HUNTER	34977 WOODWARD AVE	LUST, UST, INVENTORY, BEA	Higher	725, 0.137, NNE
G29	CATALYST DEVELOPMENT	34977 WOODWARD AVE	RCRA-VSQG, FINDS, ECHO	Higher	725, 0.137, NNE
G30	BIRMINGHAM SERVICES	34977 WOODWARD AVENU	AUL, BEA, WDS	Higher	725, 0.137, NNE
31	BURTON KATZMAN	336 E MAPLE RD	RCRA NonGen / NLR	Higher	735, 0.139, North
G32	CATALYST DEVELOPMENT	34977 WOODWARD AVENU	INVENTORY	Higher	751, 0.142, NNE
H33	MALLY, C . LANE PROP	575 SOUTH HUNTER BLV	BEA	Lower	774, 0.147, ENE
H34	CARMAN TILLARD	910 N HUNTER BLVD	LUST, UST	Lower	777, 0.147, East
I35	FRED LAVERY CO	34602 WOODWARD AVE	UST	Lower	783, 0.148, East
I36	FRED LAVERY CO	34602 WOODWARD AVE	RCRA-VSQG, FINDS, ECHO	Lower	783, 0.148, East
J37	165 - 217 PIERCE STR	165 - 217 PIERCE STR	INVENTORY, BEA	Higher	793, 0.150, NW
F38	FULLER CENTRAL PARK	111 S OLD WOODWARD	RCRA-VSQG, FINDS, ECHO	Higher	804, 0.152, NNW
39	BARNUM HEALTH CENTER	746 PURDY ST	UST	Lower	835, 0.158, South

MAPPED SITES SUMMARY

Target Property Address:
300-394 S OLD WOODWARD AVE AND 294 E BROWN ST
BIRMINGHAM, MI 48009

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
K40	VILLAGE JEEP EAGLE	666 S WOODWARD	UST	Lower	857, 0.162, SE
L41	HOLIDAY INN	34952 WOODWARD AVE	RCRA-VSQG	Higher	858, 0.162, NE
M42	GOLLING MOTORS, INC.	34500 WOODWARD AVENU	INVENTORY	Lower	870, 0.165, ESE
M43	GOLLING MOTORS, INC.	34500 WOODWARD	INVENTORY, BEA	Lower	870, 0.165, ESE
K44	VILLAGE AMC/JEEP INC	666 S OLD WOODWARD A	RCRA NonGen / NLR, FINDS, ECHO	Lower	894, 0.169, SE
N45	SUNOCO SERVICE STATI	35001 WOODWARD AVE	RCRA NonGen / NLR, FINDS, ECHO	Higher	894, 0.169, North
N46	SUNOCO #0008-4178	35001 WOODWARD AVE	LUST, UST, INVENTORY, BEA, WDS	Higher	894, 0.169, North
J47	BIRMINGHAM CO (M5711	155 HENRIETTA ST	UST	Higher	936, 0.177, NW
J48	MICHIGAN BELL TELEPH	155 HENRIETTA ST	RCRA-VSQG, FINDS, ECHO	Higher	936, 0.177, NW
L49	JERRY BURNS CLEANERS	615 E MAPLE RD	RCRA NonGen / NLR, FINDS, ECHO	Higher	1008, 0.191, NNE
L50	JERRY BURNS DRY CLEA	615 E. MAPLE	DRYCLEANERS	Higher	1020, 0.193, NE
K51	JIMMIES RUSTICS	690 SOUTH OLD WOODWA	BEA	Lower	1054, 0.200, SE
L52	KROGER CO OF MICHIGA	685 E MAPLE RD	RCRA-VSQG	Higher	1055, 0.200, NE
L53	J C & C ENTERPRISES	700 E MAPLE RD	RCRA NonGen / NLR	Higher	1074, 0.203, NE
O54	772-784 SOUTH OLD WO	772-784 SOUTH OLD WO	BEA	Lower	1161, 0.220, SE
O55	TIFFANY FLORIST	772 S OLD WOODWARD A	LUST, UST, INVENTORY	Lower	1161, 0.220, SE
O56	VIRGINIA C CLOHSET T	784 S OLD WOODWARD A	RCRA NonGen / NLR	Lower	1165, 0.221, SE
O57	WOODWARD AND GEORGE,	772-784 SOUTH OLD WO	INVENTORY	Lower	1184, 0.224, SE
O58	WOODWARD AND GEORGE,	772-784 SOUTH OLD WO	BEA	Lower	1184, 0.224, SE
59	WM BEAUMONT HOSPITAL	35046 WOODWARD AVE	RCRA-VSQG, FINDS, ECHO	Higher	1198, 0.227, NNE
P60	GOODYEAR TIRE CENTER	835 HAYNES ST	LUST, UST, WDS	Lower	1205, 0.228, SE
P61	HALBEISEN TOM INC	835 HAYNES ST	RCRA-VSQG, FINDS, ECHO	Lower	1205, 0.228, SE
Q62	MAPLE ELM DEVELOPMEN	820 E MAPLE	RCRA NonGen / NLR, FINDS, ECHO	Higher	1281, 0.243, NE
63	WABEEK ASSOC GEN PAR	280 W MAPLE RD	UST	Higher	1300, 0.246, NW
Q64	HAMILTON FUNERAL HOM	820 EAST MAPLE ROAD	INVENTORY, BEA	Higher	1327, 0.251, NE
P65	LAVERY MI DEALERSHIP	907 AND 911 HAYNES S	INVENTORY	Lower	1366, 0.259, ESE
P66	FRED LAVERY COMPANY	907 AND 911 HAYNES S	INVENTORY	Lower	1366, 0.259, ESE
P67	907 AND 911 HAYNES S	907 AND 911 HAYNES S	BEA	Lower	1366, 0.259, ESE
68	PROPOSED BALDWIN HOU	200 CHESTER ST	LUST, UST, WDS	Higher	1455, 0.276, WNW
69	AMERICAR	860 S OLD WOODWARD A	LUST, UST, WDS	Lower	1501, 0.284, SE
R70	ELMWOOD PROPERTIES I	920-970 EAST MAPLE R	BEA	Higher	1513, 0.287, ENE
S71	COMERICA BANK BIRMIN	322 N. OLD WOODWARD	INVENTORY	Higher	1585, 0.300, NNW
R72	PARKING LOT (DIETZ C	985 E MAPLE RD	INVENTORY, BEA	Higher	1644, 0.311, ENE
R73	PARKING LOT (DIETZ C	985 E MAPLE RD	LUST, UST	Higher	1644, 0.311, ENE
R74	BUDGET RENT-A-CAR	1000 E MAPLE RD	LUST, UST, INVENTORY, WDS	Lower	1645, 0.312, ENE
R75	OSOS TONTOS LLC	985 EAST MAPLE	BEA	Lower	1647, 0.312, ENE
S76	344 NORTH OLD WOODWA	344 NORTH OLD WOODWA	INVENTORY, BEA	Higher	1710, 0.324, NNW
77	BIRMINGHAM PUBLIC SC	550 W MERRILL ST	LUST, INVENTORY	Higher	1720, 0.326, West
78	FIRST CHURCH OF CHRI	191 N. CHESTER ST.	INVENTORY	Higher	1780, 0.337, WNW

MAPPED SITES SUMMARY

Target Property Address:
300-394 S OLD WOODWARD AVE AND 294 E BROWN ST
BIRMINGHAM, MI 48009

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
79	597-725 SOUTH ADAMS	597 SOUTH ADAMS ROAD	INVENTORY, BEA, WDS	Lower	1787, 0.338, ESE
80	THE PLANT STATION	720 S ADAMS RD	LUST, UST	Lower	1803, 0.341, ESE
T81	BIRMINGHAM STANDARD	1088 E MAPLE RD	LUST, UST, WDS	Lower	1865, 0.353, ENE
U82	912 OLD WOODWARD, LL	912 SOUTH OLD WOODWA	INVENTORY, BEA	Lower	1872, 0.355, SE
U83	912 SOUTH OLD WOODWA	912 SOUTH OLD WOODWA	US BROWNFIELDS, FINDS	Lower	1872, 0.355, SE
U84	912 OLD WOODWARD, LL	912 SOUTH OLD WOODWA	INVENTORY	Lower	1872, 0.355, SE
T85	MOBIL OIL CORP	1065 E MAPLE RD	INVENTORY, AIRS, WDS	Lower	1917, 0.363, ENE
U86	OFFICE BUILDING & PA	1000 SOUTH OLD WOODW	BEA	Lower	1963, 0.372, SE
U87	FORMER BIRMINGHAM CL	1253 S. WOODWARD AVE	BEA	Lower	1968, 0.373, SE
U88	SILK AND MORGAN, INC	1253 S. WOODWARD	BEA	Lower	1968, 0.373, SE
U89	WOODLINC/MICH LTD PA	1050 S OLD WOODWARD	LUST, INVENTORY	Lower	1978, 0.375, SE
90	QUARTON WOODWARD SER	1599 S WOODWARD AVE	LUST, UST, AUL, INVENTORY, WDS	Lower	2127, 0.403, SE
V91	908 S. ADAMS, LLC	908 SOUTH ADAMS ROAD	INVENTORY	Lower	2163, 0.410, SE
V92	908 SOUTH ADAMS ROAD	908 SOUTH ADAMS ROAD	BEA	Lower	2163, 0.410, SE
93	GHEEN RESIDENCE	272 RAVINE ROAD	INVENTORY, WDS	Lower	2350, 0.445, NNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

EXECUTIVE SUMMARY

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Facilities Database

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing

AST..... Aboveground Tanks

INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields and UST Site Database

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF..... Inactive Solid Waste Facilities

SWRCY..... Recycling Facilities

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

ODI..... Open Dump Inventory

IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

PART 201..... Part 201 Site List

CDL..... Clandestine Drug Lab Listing

DEL PART 201..... Delisted List of Contaminated Sites

US CDL..... National Clandestine Laboratory Register

PFAS..... PFAS Contaminated Sites Listing

Local Land Records

LIENS..... Lien List

EXECUTIVE SUMMARY

LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
 SPILLS..... Pollution Emergency Alerting System

Other Ascertainable Records

FUDS..... Formerly Used Defense Sites
 DOD..... Department of Defense Sites
 SCRDRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
 USFINASSUR..... Financial Assurance Information
 EPAWATCHLIST..... EPA WATCH LIST
 2020CORACTION..... 2020 Corrective Action Program List
 TSCA..... Toxic Substances Control Act
 TRIS..... Toxic Chemical Release Inventory System
 SSTs..... Section 7 Tracking Systems
 ROD..... Records Of Decision
 RMP..... Risk Management Plans
 RAATS..... RCRA Administrative Action Tracking System
 PRP..... Potentially Responsible Parties
 PADS..... PCB Activity Database System
 ICIS..... Integrated Compliance Information System
 FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
 MLTS..... Material Licensing Tracking System
 COALASHDOE..... Steam-Electric Plant Operation Data
 COALASHEPA..... Coal Combustion Residues Surface Impoundments List
 PCBTRANSFORMER..... PCB Transformer Registration Database
 RADINFO..... Radiation Information Database
 HISTFTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
 DOTOPS..... Incident and Accident Data
 CONSENT..... Superfund (CERCLA) Consent Decrees
 INDIANRESERV..... Indian Reservations
 FUSRAP..... Formerly Utilized Sites Remedial Action Program
 UMTRA..... Uranium Mill Tailings Sites
 LEADSMELTERS..... Lead Smelter Sites
 USAIRS..... Aerometric Information Retrieval System Facility Subsystem
 USMINES..... Mines Master Index File
 ABANDONEDMINES..... Abandoned Mines
 FINDS..... Facility Index System/Facility Registry System
 UXO..... Unexploded Ordnance Sites
 ECHO..... Enforcement & Compliance History Information
 DOCKETHWC..... Hazardous Waste Compliance Docket Listing
 FUELSPROGRAM..... EPA Fuels Program Registered Listing
 AIRS..... Permit and Emissions Inventory Data
 ASBESTOS..... ASBESTOS
 COALASH..... Coal Ash Disposal Sites
 Financial Assurance..... Financial Assurance Information Listing
 LEAD..... Lead Safe Housing Registry
 NPDES..... List of Active NPDES Permits
 UIC..... Underground Injection Wells Database
 WDS..... Waste Data System
 MINESMRDS..... Mineral Resources Data System

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA PART 201..... Recovered Government Archive State Hazardous Waste Facilities List

RGA LF..... Recovered Government Archive Solid Waste Facilities List

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-VSQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-VSQG list, as provided by EDR, and dated 03/22/2021 has revealed that there are 11 RCRA-VSQG sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ESSCO OF BIRMINGHAM EPA ID:: MIK656803600	255 S OLD WOODWARD A	N 0 - 1/8 (0.053 mi.)	B12	54
<i>SPEEDWAY LLC</i> EPA ID:: MID985666387	<i>34750 WOODWARD AVE</i>	<i>ENE 1/8 - 1/4 (0.129 mi.)</i>	<i>H27</i>	<i>84</i>
<i>CATALYST DEVELOPMENT</i> EPA ID:: MIR000044230	<i>34977 WOODWARD AVE</i>	<i>NNE 1/8 - 1/4 (0.137 mi.)</i>	<i>G29</i>	<i>104</i>
<i>FULLER CENTRAL PARK</i>	<i>111 S OLD WOODWARD</i>	<i>NNW 1/8 - 1/4 (0.152 mi.)</i>	<i>F38</i>	<i>134</i>

EXECUTIVE SUMMARY

EPA ID:: MIK478599987				
HOLIDAY INN	34952 WOODWARD AVE	NE 1/8 - 1/4 (0.162 mi.)	L41	142
EPA ID:: MIK541799672				
MICHIGAN BELL TELEPH	155 HENRIETTA ST	NW 1/8 - 1/4 (0.177 mi.)	J48	168
EPA ID:: MIT270013519				
KROGER CO OF MICHIGA	685 E MAPLE RD	NE 1/8 - 1/4 (0.200 mi.)	L52	177
EPA ID:: MIK996275632				
WM BEAUMONT HOSPITAL	35046 WOODWARD AVE	NNE 1/8 - 1/4 (0.227 mi.)	59	189
EPA ID:: MIK132883016				
Lower Elevation	Address	Direction / Distance	Map ID	Page
WOODWARD DETROIT CVS	444 S OLD WOODWARD A	SE 0 - 1/8 (0.037 mi.)	A5	20
EPA ID:: MIK166505639				
FRED LAVERY CO	34602 WOODWARD AVE	E 1/8 - 1/4 (0.148 mi.)	I36	125
EPA ID:: MID985613389				
HALBEISEN TOM INC	835 HAYNES ST	SE 1/8 - 1/4 (0.228 mi.)	P61	194
EPA ID:: MID985643790				

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Quality's Leaking Underground Storage Tank (LUST) Database.

A review of the LUST list, as provided by EDR, and dated 05/06/2021 has revealed that there are 17 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
JAX KAR WASH #048	34745 WOODWARD AVE	NE 0 - 1/8 (0.072 mi.)	D14	57
Release Status: Open				
Substance Release: Unknown				
Facility Id: 00001952				
SPEEDWAY #8721	34750 WOODWARD 347 B	ENE 1/8 - 1/4 (0.129 mi.)	H26	83
Release Status: Closed				
Release Status: Open				
Substance Release: Unknown				
Substance Release: Gasoline,Gasoline,Gasoline,Diesel				
Facility Id: 00016370				
SHELL - HUNTER	34977 WOODWARD AVE	NNE 1/8 - 1/4 (0.137 mi.)	G28	95
Release Status: Closed				
Release Status: Open				
Substance Release: Unknown,Unknown				
Substance Release: Gasoline				
Substance Release: Used Oil				
Facility Id: 00002267				
SUNOCO #0008-4178	35001 WOODWARD AVE	N 1/8 - 1/4 (0.169 mi.)	N46	160
Release Status: Closed				

EXECUTIVE SUMMARY

Substance Release: Unknown
Facility Id: 00005935

PROPOSED BALDWIN HOU **200 CHESTER ST** **WNW 1/4 - 1/2 (0.276 mi.)** **68** **207**

Release Status: Closed
Substance Release: Heating Oil
Facility Id: 00037464

PARKING LOT (DIETZ C **985 E MAPLE RD** **ENE 1/4 - 1/2 (0.311 mi.)** **R73** **215**

Release Status: Open
Substance Release: Unknown
Facility Id: 50002129

BIRMINGHAM PUBLIC SC **550 W MERRILL ST** **W 1/4 - 1/2 (0.326 mi.)** **77** **222**

Release Status: Open
Facility Id: 50000584

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ESTATE MOTORS Release Status: Closed Substance Release: Gasoline Substance Release: Unknown Facility Id: 00015180	464 S WOODWARD AVE	SE 0 - 1/8 (0.044 mi.)	A9	31
CARMAN TILLARD Release Status: Closed Facility Id: 50001216	910 N HUNTER BLVD	E 1/8 - 1/4 (0.147 mi.)	H34	116
TIFFANY FLORIST Release Status: Open Substance Release: Gasoline,Gasoline Facility Id: 00042132	772 S OLD WOODWARD A	SE 1/8 - 1/4 (0.220 mi.)	O55	182
GOODYEAR TIRE CENTER Release Status: Closed Substance Release: Used Oil Facility Id: 00021777	835 HAYNES ST	SE 1/8 - 1/4 (0.228 mi.)	P60	192
AMERICAR Release Status: Closed Facility Id: 00034958	860 S OLD WOODWARD A	SE 1/4 - 1/2 (0.284 mi.)	69	209
BUDGET RENT-A-CAR Release Status: Open Facility Id: 00007720	1000 E MAPLE RD	ENE 1/4 - 1/2 (0.312 mi.)	R74	217
THE PLANT STATION Release Status: Closed Substance Release: Gasoline,Unknown Facility Id: 00018613	720 S ADAMS RD	ESE 1/4 - 1/2 (0.341 mi.)	80	224
BIRMINGHAM STANDARD Release Status: Closed Facility Id: 00001897	1088 E MAPLE RD	ENE 1/4 - 1/2 (0.353 mi.)	T81	228
WOODLINC/MICH LTD PA Release Status: Open Substance Release: Gasoline Facility Id: 00039226	1050 S OLD WOODWARD	SE 1/4 - 1/2 (0.375 mi.)	U89	244
QUARTON WOODWARD SER	1599 S WOODWARD AVE	SE 1/4 - 1/2 (0.403 mi.)	90	245

EXECUTIVE SUMMARY

Release Status: Closed
 Substance Release: Gasoline
 Facility Id: 00033030

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Quality's Michigan UST database.

A review of the UST list, as provided by EDR, has revealed that there are 15 UST sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
JAX KAR WASH #048 Database: UST, Date of Government Version: 04/26/2021 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00001952	34745 WOODWARD AVE	NE 0 - 1/8 (0.072 mi.)	D14	57
SPEEDWAY LLC Database: UST, Date of Government Version: 04/26/2021 Tank Status: Removed from Ground Tank Status: Currently In Use Facility Type: ACTIVE Facility Id: 00016370	34750 WOODWARD AVE	ENE 1/8 - 1/4 (0.129 mi.)	H27	84
SHELL - HUNTER Database: UST, Date of Government Version: 04/26/2021 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00002267	34977 WOODWARD AVE	NNE 1/8 - 1/4 (0.137 mi.)	G28	95
SUNOCO #0008-4178 Database: UST, Date of Government Version: 04/26/2021 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00005935	35001 WOODWARD AVE	N 1/8 - 1/4 (0.169 mi.)	N46	160
BIRMINGHAM CO (M5711) Database: UST, Date of Government Version: 04/26/2021 Tank Status: Currently In Use Facility Type: ACTIVE Facility Id: 00011669	155 HENRIETTA ST	NW 1/8 - 1/4 (0.177 mi.)	J47	166
WABEEK ASSOC GEN PAR Database: UST, Date of Government Version: 04/26/2021 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00034440	280 W MAPLE RD	NW 1/8 - 1/4 (0.246 mi.)	63	203
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FORMER GASOLINE DISP Database: UST, Date of Government Version: 04/26/2021	400 S OLD WOODWARD A	SE 0 - 1/8 (0.019 mi.)	A1	8

EXECUTIVE SUMMARY

Tank Status: Removed from Ground
 Facility Type: CLOSED
 Facility Id: 00042635

ESTATE MOTORS	464 S WOODWARD AVE	SE 0 - 1/8 (0.044 mi.)	A9	31
Database: UST 2, Date of Government Version: 04/09/2021				
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Removed from Ground				
Tank Status: Currently In Use				
Facility ID: 00015180				
Facility Type: Removed from Ground				
Facility Type: CLOSED				
Facility Id: 00015180				
FRANKLIN SAVINGS BAN	479 S OLD WOODWARD A	ESE 0 - 1/8 (0.076 mi.)	C15	60
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Removed from Ground				
Facility Type: CLOSED				
Facility Id: 00013244				
CARMAN TILLARD	910 N HUNTER BLVD	E 1/8 - 1/4 (0.147 mi.)	H34	116
Database: UST 2, Date of Government Version: 04/09/2021				
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Non-Registered Tank				
Facility ID: 50001216				
Facility Type: CLOSED				
Facility Id: 50001216				
FRED LAVERY CO	34602 WOODWARD AVE	E 1/8 - 1/4 (0.148 mi.)	I35	117
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Removed from Ground				
Tank Status: Currently In Use				
Facility Type: Removed from Ground				
Facility Type: CLOSED				
Facility Id: 00014864				
BARNUM HEALTH CENTER	746 PURDY ST	S 1/8 - 1/4 (0.158 mi.)	39	137
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Temporarily Out of Use				
Facility Type: CLOSED				
Facility Id: 00017691				
VILLAGE JEEP EAGLE	666 S WOODWARD	SE 1/8 - 1/4 (0.162 mi.)	K40	138
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Currently In Use				
Tank Status: Removed from Ground				
Facility Type: Currently In Use				
Facility Type: CLOSED				
Facility Id: 00005612				
TIFFANY FLORIST	772 S OLD WOODWARD A	SE 1/8 - 1/4 (0.220 mi.)	O55	182
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Closed in Ground				
Tank Status: Removed from Ground				
Facility Type: CLOSED				
Facility Id: 00042132				
GOODYEAR TIRE CENTER	835 HAYNES ST	SE 1/8 - 1/4 (0.228 mi.)	P60	192
Database: UST, Date of Government Version: 04/26/2021				
Tank Status: Removed from Ground				

EXECUTIVE SUMMARY

Facility Type: CLOSED
Facility Id: 00021777

State and tribal institutional control / engineering control registries

AUL: A listing of sites with institutional and/or engineering controls in place.

A review of the AUL list, as provided by EDR, and dated 05/21/2021 has revealed that there are 2 AUL sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
BIRMINGHAM SERVICES Facility ID: 00002267	34977 WOODWARD AVENU	NNE 1/8 - 1/4 (0.137 mi.)	G30	108

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
QUARTON WOODWARD SER Facility ID: 00033030	1599 S WOODWARD AVE	SE 1/4 - 1/2 (0.403 mi.)	90	245

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA's listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

A review of the US BROWNFIELDS list, as provided by EDR, and dated 06/10/2021 has revealed that there are 3 US BROWNFIELDS sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
WEISS SAMONA ACRES property ID: 115761 Cleanup Completion Date: -	34901 WOODWARD AVENU	NE 0 - 1/8 (0.094 mi.)	D21	65

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GREEN'S ART SUPPLY ACRES property ID: 170095 Cleanup Completion Date: -	400 SOUTH OLD WOODWA	SE 0 - 1/8 (0.019 mi.)	A4	10
912 SOUTH OLD WOODWA ACRES property ID: 171161 Cleanup Completion Date: -	912 SOUTH OLD WOODWA	SE 1/4 - 1/2 (0.355 mi.)	U83	234

EXECUTIVE SUMMARY

Local Lists of Hazardous waste / Contaminated Sites

INVENTORY: The Inventory of Facilities has three data sources: Facilities under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) identified through state funded or private party response activities (Projects); Facilities under Part 213, Leaking Underground Storage Tanks of the NREPA; and Facilities identified through submittals of Baseline Environmental Assessments (BEA) submitted pursuant to Part 201 or Part 213 of the NREPA. The Part 201 Projects Inventory does not include all of the facilities that are subject to regulation under Part 201 because owners are not required to inform the Department of Environmental Quality (DEQ) about the facilities and can pursue cleanup independently. Facilities that are not known to DEQ are not on the Inventory, nor are locations with releases that resulted in low environmental impact. Part 213 facilities listed here may have more than one release; a list of releases for which corrective actions have been completed and list of releases for which corrective action has not been completed is located on the Leaking Underground Storage Tanks Site Search webpage. The DEQ may or may not have reviewed and concurred with the conclusion that the corrective actions described in a closure report meets criteria. A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

A review of the INVENTORY list, as provided by EDR, and dated 01/20/2021 has revealed that there are 31 INVENTORY sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
JAX KAR WASH #048 Facility ID: 00001952	34745 WOODWARD AVE	NE 0 - 1/8 (0.072 mi.)	D14	57
WOODWARD BROWN ASSOC Facility ID: 63005920	34901 WOODWARD AVENUE	NE 0 - 1/8 (0.091 mi.)	D19	64
WOODWARD BROWN ASSOC Facility ID: 63005920	34901 WOODWARD	NE 0 - 1/8 (0.094 mi.)	D22	76
34965 WOODWARD AVENUE Facility ID: 63006065	34965 WOODWARD AVENUE	NNE 0 - 1/8 (0.119 mi.)	G25	81
SPEEDWAY #8721 Facility ID: 00016370	34750 WOODWARD 347 B	ENE 1/8 - 1/4 (0.129 mi.)	H26	83
SHELL - HUNTER Facility ID: 00002267	34977 WOODWARD AVE	NNE 1/8 - 1/4 (0.137 mi.)	G28	95
CATALYST DEVELOPMENT Facility ID: 63005889	34977 WOODWARD AVENUE	NNE 1/8 - 1/4 (0.142 mi.)	G32	115
165 - 217 PIERCE STR	165 - 217 PIERCE STR	NW 1/8 - 1/4 (0.150 mi.)	J37	133
SUNOCO #0008-4178	35001 WOODWARD AVE	N 1/8 - 1/4 (0.169 mi.)	N46	160
HAMILTON FUNERAL HOM	820 EAST MAPLE ROAD	NE 1/4 - 1/2 (0.251 mi.)	Q64	204
COMERICA BANK BIRMIN Facility ID: 63005254	322 N. OLD WOODWARD	NNW 1/4 - 1/2 (0.300 mi.)	S71	212
PARKING LOT (DIETZ C Facility ID: 50002129	985 E MAPLE RD	ENE 1/4 - 1/2 (0.311 mi.)	R72	212
344 NORTH OLD WOODWA Facility ID: 63500536	344 NORTH OLD WOODWA	NNW 1/4 - 1/2 (0.324 mi.)	S76	221
BIRMINGHAM PUBLIC SC Facility ID: 50000584	550 W MERRILL ST	W 1/4 - 1/2 (0.326 mi.)	77	222
FIRST CHURCH OF CHRI Facility ID: 63005278	191 N. CHESTER ST.	WNW 1/4 - 1/2 (0.337 mi.)	78	223
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GREEN'S ART SUPPLY	400 SOUTH OLD WOODWA	SE 0 - 1/8 (0.019 mi.)	A3	10

EXECUTIVE SUMMARY

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GOLLING MOTORS, INC. Facility ID: 63005949	34500 WOODWARD AVENUE	ESE 1/8 - 1/4 (0.165 mi.)	M42	145
GOLLING MOTORS, INC. Facility ID: 63005949	34500 WOODWARD	ESE 1/8 - 1/4 (0.165 mi.)	M43	146
TIFFANY FLORIST Facility ID: 00042132	772 S OLD WOODWARD A	SE 1/8 - 1/4 (0.220 mi.)	O55	182
WOODWARD AND GEORGE, LAVERY MI DEALERSHIP	772-784 SOUTH OLD WO 907 AND 911 HAYNES S	SE 1/8 - 1/4 (0.224 mi.) ESE 1/4 - 1/2 (0.259 mi.)	O57 P65	188 205
FRED LAVERY COMPANY	907 AND 911 HAYNES S	ESE 1/4 - 1/2 (0.259 mi.)	P66	206
BUDGET RENT-A-CAR Facility ID: 00007720	1000 E MAPLE RD	ENE 1/4 - 1/2 (0.312 mi.)	R74	217
597-725 SOUTH ADAMS Facility ID: 63501342	597 SOUTH ADAMS ROAD	ESE 1/4 - 1/2 (0.338 mi.)	79	223
912 OLD WOODWARD, LL Facility ID: 63006025	912 SOUTH OLD WOODWA	SE 1/4 - 1/2 (0.355 mi.)	U82	234
912 OLD WOODWARD, LL Facility ID: 63006025	912 SOUTH OLD WOODWA	SE 1/4 - 1/2 (0.355 mi.)	U84	240
MOBIL OIL CORP WOODLINC/MICH LTD PA Facility ID: 00039226	1065 E MAPLE RD 1050 S OLD WOODWARD	ENE 1/4 - 1/2 (0.363 mi.) SE 1/4 - 1/2 (0.375 mi.)	T85 U89	241 244
QUARTON WOODWARD SER Facility ID: 00033030	1599 S WOODWARD AVE	SE 1/4 - 1/2 (0.403 mi.)	90	245
908 S. ADAMS, LLC	908 SOUTH ADAMS ROAD	SE 1/4 - 1/2 (0.410 mi.)	V91	252
GHEEN RESIDENCE Facility ID: 63006037	272 RAVINE ROAD	NNW 1/4 - 1/2 (0.445 mi.)	93	253

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/22/2021 has revealed that there are 10 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
UPTOWN ENTERTAINMENT EPA ID: MIK151544753	211 S OLD WOODWARD A	N 0 - 1/8 (0.085 mi.)	B16	61
BIRMINGHAM CAMERA SH EPA ID: MID985652064	168 S OLD WOODWARD A	NNW 0 - 1/8 (0.116 mi.)	F24	77
BURTON KATZMAN EPA ID: MIK851343467	336 E MAPLE RD	N 1/8 - 1/4 (0.139 mi.)	31	111
SUNOCO SERVICE STATI EPA ID: MID087750204	35001 WOODWARD AVE	N 1/8 - 1/4 (0.169 mi.)	N45	151
JERRY BURNS CLEANERS	615 E MAPLE RD	NNE 1/8 - 1/4 (0.191 mi.)	L49	172

EXECUTIVE SUMMARY

EPA ID:: MID985605112				
J C & C ENTERPRISES	700 E MAPLE RD	NE 1/8 - 1/4 (0.203 mi.)	L53	179
EPA ID:: MIK559424759				
MAPLE ELM DEVELOPMEN	820 E MAPLE	NE 1/8 - 1/4 (0.243 mi.)	Q62	200
EPA ID:: MIK204939963				
Lower Elevation	Address	Direction / Distance	Map ID	Page
ESTATE MOTORS LTD	464 S OLD WOODWARD A	SE 0 - 1/8 (0.044 mi.)	A10	50
EPA ID:: MID040571135				
VILLAGE AMC/JEEP INC	666 S OLD WOODWARD A	SE 1/8 - 1/4 (0.169 mi.)	K44	147
EPA ID:: MID058819707				
VIRGINIA C CLOHSET T	784 S OLD WOODWARD A	SE 1/8 - 1/4 (0.221 mi.)	O56	185
EPA ID:: MIK322432543				

BEA: A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

A review of the BEA list, as provided by EDR, and dated 05/11/2021 has revealed that there are 27 BEA sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BROWN STREET OFFICE	200 EAST BROWN	WSW 0 - 1/8 (0.037 mi.)	6	29
JAX KAR WASH #048	34745 WOODWARD AVE	NE 0 - 1/8 (0.072 mi.)	D14	57
WOODWARD BROWN ASSOC	34901 WOODWARD AVENU	NE 0 - 1/8 (0.094 mi.)	D20	64
WOODWARD BROWN ASSOC	34901 WOODWARD	NE 0 - 1/8 (0.094 mi.)	D22	76
34965 WOODWARD AVENU	34965 WOODWARD AVENU	NNE 0 - 1/8 (0.119 mi.)	G25	81
SHELL - HUNTER	34977 WOODWARD AVE	NNE 1/8 - 1/4 (0.137 mi.)	G28	95
BIRMINGHAM SERVICES	34977 WOODWARD AVENU	NNE 1/8 - 1/4 (0.137 mi.)	G30	108
165 - 217 PIERCE STR	165 - 217 PIERCE STR	NW 1/8 - 1/4 (0.150 mi.)	J37	133
SUNOCO #0008-4178	35001 WOODWARD AVE	N 1/8 - 1/4 (0.169 mi.)	N46	160
HAMILTON FUNERAL HOM	820 EAST MAPLE ROAD	NE 1/4 - 1/2 (0.251 mi.)	Q64	204
ELMWOOD PROPERTIES I	920-970 EAST MAPLE R	ENE 1/4 - 1/2 (0.287 mi.)	R70	211
PARKING LOT (DIETZ C	985 E MAPLE RD	ENE 1/4 - 1/2 (0.311 mi.)	R72	212
344 NORTH OLD WOODWA	344 NORTH OLD WOODWA	NNW 1/4 - 1/2 (0.324 mi.)	S76	221
Lower Elevation	Address	Direction / Distance	Map ID	Page
400 SOUTH OLD WOODWA	400 SOUTH OLD WOODWA	SE 0 - 1/8 (0.019 mi.)	A2	9
MALLY, C. LANE PROP	575 SOUTH HUNTER BLV	ENE 1/8 - 1/4 (0.147 mi.)	H33	115
GOLLING MOTORS, INC.	34500 WOODWARD	ESE 1/8 - 1/4 (0.165 mi.)	M43	146
JIMMIES RUSTICS	690 SOUTH OLD WOODWA	SE 1/8 - 1/4 (0.200 mi.)	K51	176
772-784 SOUTH OLD WO	772-784 SOUTH OLD WO	SE 1/8 - 1/4 (0.220 mi.)	O54	182
WOODWARD AND GEORGE,	772-784 SOUTH OLD WO	SE 1/8 - 1/4 (0.224 mi.)	O58	188
907 AND 911 HAYNES S	907 AND 911 HAYNES S	ESE 1/4 - 1/2 (0.259 mi.)	P67	206
OSOS TONTOS LLC	985 EAST MAPLE	ENE 1/4 - 1/2 (0.312 mi.)	R75	221
597-725 SOUTH ADAMS	597 SOUTH ADAMS ROAD	ESE 1/4 - 1/2 (0.338 mi.)	79	223
912 OLD WOODWARD, LL	912 SOUTH OLD WOODWA	SE 1/4 - 1/2 (0.355 mi.)	U82	234
OFFICE BUILDING & PA	1000 SOUTH OLD WOODW	SE 1/4 - 1/2 (0.372 mi.)	U86	242
FORMER BIRMINGHAM CL	1253 S. WOODWARD AVE	SE 1/4 - 1/2 (0.373 mi.)	U87	243
SILK AND MORGAN, INC	1253 S. WOODWARD	SE 1/4 - 1/2 (0.373 mi.)	U88	243
908 SOUTH ADAMS ROAD	908 SOUTH ADAMS ROAD	SE 1/4 - 1/2 (0.410 mi.)	V92	253

EXECUTIVE SUMMARY

DRYCLEANERS: A listing of drycleaning facilities in Michigan.

A review of the DRYCLEANERS list, as provided by EDR, and dated 01/07/2021 has revealed that there is 1 DRYCLEANERS site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
JERRY BURNS DRY CLEA Establishment#: 6300337	615 E. MAPLE	NE 1/8 - 1/4 (0.193 mi.)	L50	176

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 3 EDR Hist Auto sites within approximately 0.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GAS STATION TV	255 S OLD WOODWARD A	N 0 - 1/8 (0.053 mi.)	B11	53
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
BRITANNIA PROPERTIES	401 S OLD WOODWARD A	E 0 - 1/8 (0.054 mi.)	C13	56
MAVERICK EXPRESS INC	555 S WOODWARD	SE 0 - 1/8 (0.087 mi.)	E17	63

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there are 4 EDR Hist Cleaner sites within approximately 0.125 miles of the target property.

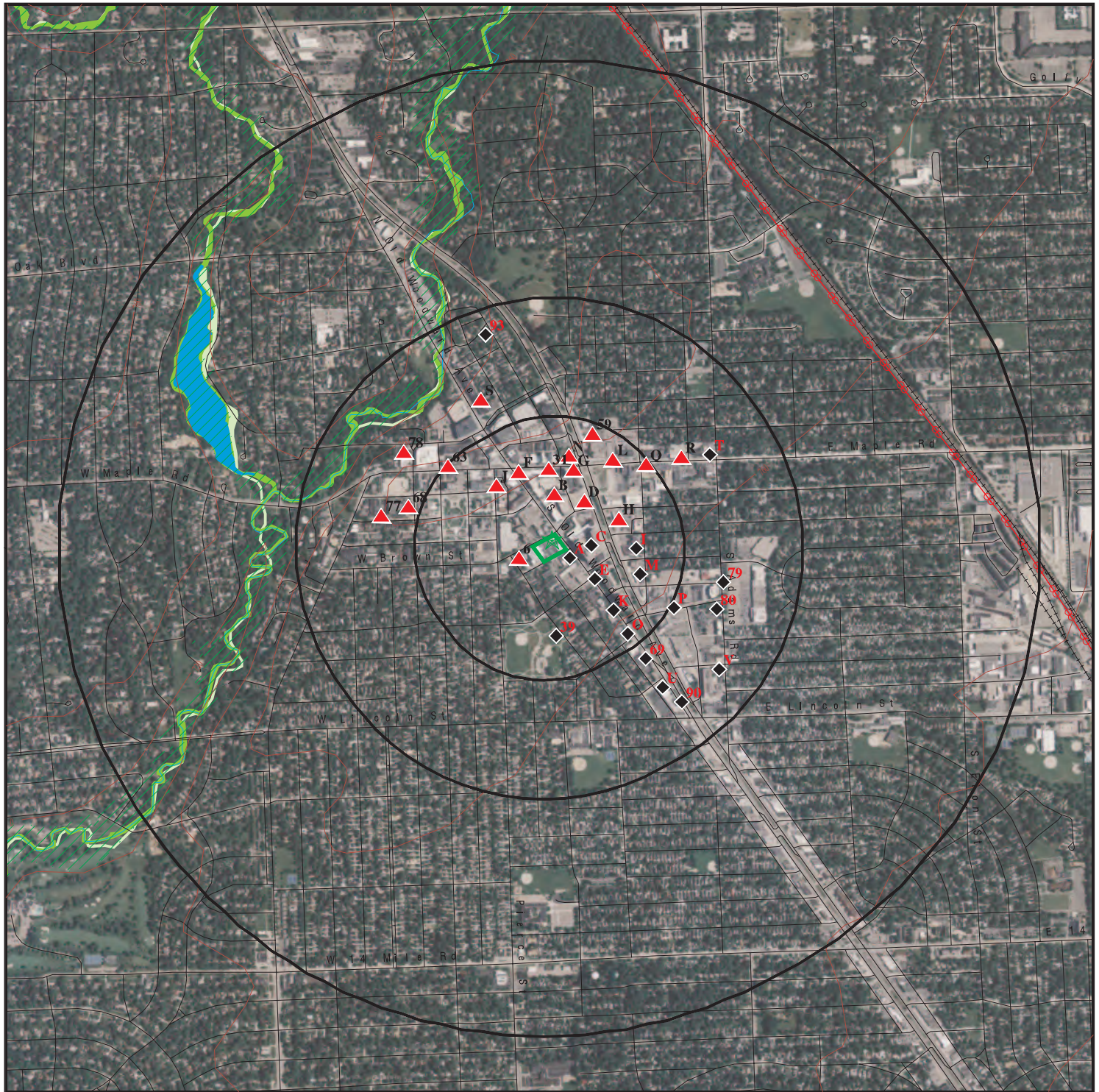
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
MITCHELL GEORGE E CL	458 S WOODWARD AVE	SE 0 - 1/8 (0.040 mi.)	A7	30
MITCHELL GEORGE E CL	458 S OLD WOODWARD A	SE 0 - 1/8 (0.042 mi.)	A8	30
BIRMINGHAM CLEANERS	1253 555 S WOODWARD	SE 0 - 1/8 (0.087 mi.)	E18	63
MITCHELL GEORGE E CL	534 S WOODWARD AVE	SE 0 - 1/8 (0.098 mi.)	E23	77

EXECUTIVE SUMMARY


Due to poor or inadequate address information, the following sites were not mapped. Count: 4 records.


<u>Site Name</u>	<u>Database(s)</u>
EVART MOTORS COMPANY	PRP
ANDERSON SAFEWAY CORP	PRP
DIAMLER-CHRYSLER CORPORATION	PRP
	CDL

OVERVIEW MAP - 06655522.2R



 Target Property

 Sites at elevations higher than or equal to the target property

 Sites at elevations lower than the target property


 Manufactured Gas Plants

 National Priority List Sites

 Dept. Defense Sites

 Indian Reservations BIA

 Power transmission lines

 Special Flood Hazard Area (1%)

 0.2% Annual Chance Flood Hazard

 National Wetland Inventory

 State Wetlands

0 1/4 1/2 1 Miles










This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.






SITE NAME: 300-394 S Old Woodward Ave and 294 E Brown St
ADDRESS: 300-394 S Old Woodward Ave and 294 E Brown St
Birmingham MI 48009
LAT/LONG: 42.544439 / 83.212588

CLIENT: PM Environmental, Inc.
CONTACT: Karaline Mccullough
INQUIRY #: 06655522.2r
DATE: September 09, 2021 4:47 pm

DETAIL MAP - 06655522.2R



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  Special Flood Hazard Area (1%)
-  0.2% Annual Chance Flood Hazard
-  National Wetland Inventory
-  State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 300-394 S Old Woodward Ave and 294 E Brown St
 ADDRESS: 300-394 S Old Woodward Ave and 294 E Brown St
 Birmingham MI 48009
 LAT/LONG: 42.544439 / 83.212588

CLIENT: PM Environmental, Inc.
 CONTACT: Karaline Mccullough
 INQUIRY #: 06655522.2r
 DATE: September 09, 2021 4:48 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site list</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		2	9	NR	NR	NR	11
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS	1.000		0	0	0	0	NR	0
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500		2	6	9	NR	NR	17
INDIAN LUST	0.500		0	0	0	NR	NR	0
<i>State and tribal registered storage tank lists</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		4	11	NR	NR	NR	15
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL	0.500		0	1	1	NR	NR	2
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		2	0	1	NR	NR	3
Local Lists of Landfill / Solid Waste Disposal Sites								
HIST LF	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
INVENTORY	0.500		5	9	17	NR	NR	31
PART 201	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
DEL PART 201	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		3	7	NR	NR	NR	10
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
BEA	0.500		6	9	12	NR	NR	27
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	1	NR	NR	NR	1
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Hist Auto	0.125		3	NR	NR	NR	NR	3
EDR Hist Cleaner	0.125		4	NR	NR	NR	NR	4
<u>EDR RECOVERED GOVERNMENT ARCHIVES</u>								
<i>Exclusive Recovered Govt. Archives</i>								
RGA PART 201	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	31	53	40	0	0	124

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

A1
SE
< 1/8
0.019 mi.
100 ft.

FORMER GASOLINE DISPENSING STATION
400 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009
Site 1 of 9 in cluster A

UST **U004241575**
N/A

Relative:
Lower

UST:

Actual:
766 ft.

Name: FORMER GASOLINE DISPENSING STATION
Address: 400 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6610
Facility Type: CLOSED
Facility ID: 00042635
Owner Name: 400 S OLD WOODWARD LLC
Owner Address: 640 N OLD WOODWARD SUITE 100
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009
Owner Contact: Not reported
Owner Phone: 2483209995
Contact: Joseph Jonna
Contact Phone: (248) 320-9995
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 2000
Tank Status: Removed from Ground
Substance: Diesel
Install Date: 01/01/1930
Remove Date: 10/16/2015
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FORMER GASOLINE DISPENSING STATION
Address: 400 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6610
Facility Type: CLOSED
Facility ID: 00042635
Owner Name: 400 S OLD WOODWARD LLC
Owner Address: 640 N OLD WOODWARD SUITE 100
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009
Owner Contact: Not reported
Owner Phone: 2483209995

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FORMER GASOLINE DISPENSING STATION (Continued)

U004241575

Contact: Joseph Jonna
Contact Phone: (248) 320-9995
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 2000
Tank Status: Removed from Ground
Substance: Diesel
Install Date: 01/01/1930
Remove Date: 10/16/2015
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

A2 **400 SOUTH OLD WOODWARD**
SE **400 SOUTH OLD WOODWARD**
< 1/8 **OAKLAND (County), MI 48009**
0.019 mi.
100 ft. **Site 2 of 9 in cluster A**

BEA **S127499865**
N/A

Relative: **BEA:**
Lower Name: 400 SOUTH OLD WOODWARD
Address: 400 SOUTH OLD WOODWARD
City,State,Zip: MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 07/16/2014
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63500998
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201406069LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2014-07-16 17:18:53
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

400 SOUTH OLD WOODWARD (Continued)

S127499865

Comments: Not reported
Organization: 400 S. Old Woodward LLC
Contact: PM Environmental, Inc.
Contact Type: Submitter Contact

**A3
SE
< 1/8
0.019 mi.
100 ft.**

**GREEN'S ART SUPPLY
400 SOUTH OLD WOODWARD
OAKLAND (County), MI 48009**

**INVENTORY S122898711
N/A**

Site 3 of 9 in cluster A

**Relative:
Lower**

INVENTORY:

**Actual:
766 ft.**

Name: GREEN'S ART SUPPLY
Address: 400 SOUTH OLD WOODWARD
City,State,Zip: MI 48009
Bea Number: 201406069LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

**A4
SE
< 1/8
0.019 mi.
100 ft.**

**GREEN'S ART SUPPLY
400 SOUTH OLD WOODWARD AVENUE
BIRMINGHAM, MI 48009**

**US BROWNFIELDS 1016603767
N/A**

Site 4 of 9 in cluster A

**Relative:
Lower**

US BROWNFIELDS:

**Actual:
766 ft.**

Name: GREEN'S ART SUPPLY
Address: 400 SOUTH OLD WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Recipient Name: Oakland County Michigan
Grant Type: Assessment
Property Number: 19-36-205-042
Parcel size: .58
Latitude: 42.543816
Longitude: -83.21211
HCM Label: Address Matching-House Number
Map Scale: -
Point of Reference: Entrance Point of a Facility or Station
Highlights: Planned mixed use development consisting of commercial retail, office, and residential condominiums Former Use: Original development of the subject property occurred prior to 1921 with four residential dwellings. The former northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. The eastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s when the building was demolished. The central dwelling was demolished in 1930, and the northern and central portions of the subject property were redeveloped with a gasoline filling station and automotive service garage in late 1930. The former western dwelling was demolished between 1931 and 1940, and the area was converted into a parking lot. The northern and central portions of the property were occupied by Sternal s Auto Supply/Service until 1957 and Standard Oil

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

Company in at least 1945. The southern warehouse portion of the current building was constructed between 1949 and 1952, and was historically utilized as offices for an Edsel automotive dealership until approximately 1957. The building was redeveloped for retail use in 1958 and the northern portion of the building was expanded between 1963 and 1967 to include the current layout. The property has been occupied by Green s Art Supply since 1958.

Datum: North American Datum of 1983
Acres Property ID: 170095
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 1200
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Petroleum
Accomplishment Type: Phase I Environmental Assessment
Accomplishment Count: Y
Cooperative Agreement Number: 00E01208
Start Date: 12/20/2013
Ownership Entity: -
Completion Date: 02/07/2014
Current Owner: -
Did Owner Change: -
Cleanup Required: N
Video Available: N
Photo Available: Y
Institutional Controls Required: N
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -
IC in place: N
State/tribal program date: -
State/tribal program ID: -
State/tribal NFA date: -
Air cleaned: -
Asbestos found: -
Asbestos cleaned: -
Controlled substance found: -
Controlled substance cleaned: -
Drinking water affected: -
Drinking water cleaned: -
Groundwater affected: -
Groundwater cleaned: -
Lead contaminant found: Y
Lead cleaned up: -

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	-
Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.58
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-
Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-
No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-
Future Use: Multistory	0

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

Media affected Bluiding Material:	-
Media affected indoor air:	-
Building material media cleaned up:	-
Indoor air media cleaned up:	-
Unknown media cleaned up:	-
Past Use: Multistory	Not reported
Property Description:	Original development of the subject property occurred prior to 1921 with four residential dwellings. The former northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. The eastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s when the building was demolished. The central dwelling was demolished in 1930, and the northern and central portions of the subject property were redeveloped with a gasoline filling station and automotive service garage in late 1930. The former western dwelling was demolished between 1931 and 1940, and the area was converted into a parking lot. The northern and central portions of the property were occupied by Sternal s Auto Supply/Service until 1957 and Standard Oil Company in at least 1945. The southern warehouse portion of the current building was constructed between 1949 and 1952, and was historically utilized as offices for an Edsel automotive dealership until approximately 1957. The building was redeveloped for retail use in 1958 and the northern portion of the building was expanded between 1963 and 1967 to include the current layout. The property has been occupied by Green s Art Supply since 1958.
Below Poverty Number:	103
Below Poverty Percent:	2.74
Meidan Income:	7180
Meidan Income Number:	282
Meidan Income Percent:	7.5
Vacant Housing Number:	191
Vacant Housing Percent:	9.26
Unemployed Number:	90
Unemployed Percent:	2.39
Name:	GREEN'S ART SUPPLY
Address:	400 SOUTH OLD WOODWARD AVENUE
City,State,Zip:	BIRMINGHAM, MI 48009
Recipient Name:	Oakland County Michigan
Grant Type:	Assessment
Property Number:	19-36-205-042
Parcel size:	.58
Latitude:	42.543816
Longitude:	-83.21211
HCM Label:	Address Matching-House Number
Map Scale:	-
Point of Reference:	Entrance Point of a Facility or Station
Highlights:	Planned mixed use development consisting of commercial retail, office, and residential condominiums Former Use: Original development of the subject property occurred prior to 1921 with four residential dwellings. The former northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. The eastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s when the building was demolished. The central dwelling

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

was demolished in 1930, and the northern and central portions of the subject property were redeveloped with a gasoline filling station and automotive service garage in late 1930. The former western dwelling was demolished between 1931 and 1940, and the area was converted into a parking lot. The northern and central portions of the property were occupied by Sternal s Auto Supply/Service until 1957 and Standard Oil Company in at least 1945. The southern warehouse portion of the current building was constructed between 1949 and 1952, and was historically utilized as offices for an Edsel automotive dealership until approximately 1957. The building was redeveloped for retail use in 1958 and the northern portion of the building was expanded between 1963 and 1967 to include the current layout. The property has been occupied by Green s Art Supply since 1958.

Datum: North American Datum of 1983
Acres Property ID: 170095
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 9900
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Petroleum
Accomplishment Type: Phase II Environmental Assessment
Accomplishment Count: N
Cooperative Agreement Number: 00E01208
Start Date: 12/20/2013
Ownership Entity: -
Completion Date: 02/07/2014
Current Owner: -
Did Owner Change: -
Cleanup Required: N
Video Available: N
Photo Available: Y
Institutional Controls Required: N
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -
IC in place: N
State/tribal program date: -
State/tribal program ID: -
State/tribal NFA date: -
Air cleaned: -
Asbestos found: -
Asbestos cleaned: -
Controlled substance found: -
Controlled substance cleaned: -

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

Drinking water affected:	-
Drinking water cleaned:	-
Groundwater affected:	-
Groundwater cleaned:	-
Lead contaminant found:	Y
Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	-
Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.58
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-
Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-
Future Use: Multistory	0
Media affected Bluiding Material:	-
Media affected indoor air:	-
Building material media cleaned up:	-
Indoor air media cleaned up:	-
Unknown media cleaned up:	-
Past Use: Multistory	Not reported
Property Description:	<p>Original development of the subject property occurred prior to 1921 with four residential dwellings. The former northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. The eastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s when the building was demolished. The central dwelling was demolished in 1930, and the northern and central portions of the subject property were redeveloped with a gasoline filling station and automotive service garage in late 1930. The former western dwelling was demolished between 1931 and 1940, and the area was converted into a parking lot. The northern and central portions of the property were occupied by Sternal s Auto Supply/Service until 1957 and Standard Oil Company in at least 1945. The southern warehouse portion of the current building was constructed between 1949 and 1952, and was historically utilized as offices for an Edsel automotive dealership until approximately 1957. The building was redeveloped for retail use in 1958 and the northern portion of the building was expanded between 1963 and 1967 to include the current layout. The property has been occupied by Green s Art Supply since 1958.</p>
Below Poverty Number:	103
Below Poverty Percent:	2.74
Meidan Income:	7180
Meidan Income Number:	282
Meidan Income Percent:	7.5
Vacant Housing Number:	191
Vacant Housing Percent:	9.26
Unemployed Number:	90
Unemployed Percent:	2.39
Name:	GREEN'S ART SUPPLY
Address:	400 SOUTH OLD WOODWARD AVENUE
City,State,Zip:	BIRMINGHAM, MI 48009
Recipient Name:	Oakland County Michigan
Grant Type:	Assessment
Property Number:	19-36-205-042
Parcel size:	.58
Latitude:	42.543816
Longitude:	-83.21211
HCM Label:	Address Matching-House Number
Map Scale:	-
Point of Reference:	Entrance Point of a Facility or Station
Highlights:	Planned mixed use development consisting of commercial retail, office, and residential condominiums Former Use: Original development of the subject property occurred prior to 1921 with four residential

Map ID
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

dwelling. The former northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. The eastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s when the building was demolished. The central dwelling was demolished in 1930, and the northern and central portions of the subject property were redeveloped with a gasoline filling station and automotive service garage in late 1930. The former western dwelling was demolished between 1931 and 1940, and the area was converted into a parking lot. The northern and central portions of the property were occupied by Sternal s Auto Supply/Service until 1957 and Standard Oil Company in at least 1945. The southern warehouse portion of the current building was constructed between 1949 and 1952, and was historically utilized as offices for an Edsel automotive dealership until approximately 1957. The building was redeveloped for retail use in 1958 and the northern portion of the building was expanded between 1963 and 1967 to include the current layout. The property has been occupied by Green s Art Supply since 1958.

Datum: North American Datum of 1983
Acres Property ID: 170095
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 1200
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Petroleum
Accomplishment Type: Phase I Environmental Assessment
Accomplishment Count: Y
Cooperative Agreement Number: 00E01208
Start Date: 12/20/2013
Ownership Entity: -
Completion Date: 02/07/2014
Current Owner: -
Did Owner Change: -
Cleanup Required: N
Video Available: N
Photo Available: Y
Institutional Controls Required: N
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -
IC in place: N
State/tribal program date: -
State/tribal program ID: -

Map ID
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Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

State/tribal NFA date:	-
Air cleaned:	-
Asbestos found:	-
Asbestos cleaned:	-
Controlled substance found:	-
Controlled substance cleaned:	-
Drinking water affected:	-
Drinking water cleaned:	-
Groundwater affected:	-
Groundwater cleaned:	-
Lead contaminant found:	Y
Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	-
Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.58
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-

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Site

Database(s)

EDR ID Number
EPA ID Number

GREEN'S ART SUPPLY (Continued)

1016603767

Cadmium contaminant found: -
Chromium contaminant found: -
Copper contaminant found: -
Iron contaminant found: -
Mercury contaminant found: -
Nickel contaminant found: -
No contaminant found: -
Pesticides contaminant found: -
Selenium contaminant found: -
SVOCs contaminant found: -
Unknown contaminant found: -
Future Use: Multistory 0
Media affected Bluiding Material: -
Media affected indoor air: -
Building material media cleaned up: -
Indoor air media cleaned up: -
Unknown media cleaned up: -

Past Use: Multistory
Property Description:

Not reported

Original development of the subject property occurred prior to 1921 with four residential dwellings. The former northern dwelling was converted into a vulcanizing operation between 1921 and 1926, which operated at the property until the structure was demolished in 1930. The eastern dwelling was redeveloped as a plumbing supply company between 1921 and 1926, which operated (and included several additions) until the early 1950s when the building was demolished. The central dwelling was demolished in 1930, and the northern and central portions of the subject property were redeveloped with a gasoline filling station and automotive service garage in late 1930. The former western dwelling was demolished between 1931 and 1940, and the area was converted into a parking lot. The northern and central portions of the property were occupied by Sternal s Auto Supply/Service until 1957 and Standard Oil Company in at least 1945. The southern warehouse portion of the current building was constructed between 1949 and 1952, and was historically utilized as offices for an Edsel automotive dealership until approximately 1957. The building was redeveloped for retail use in 1958 and the northern portion of the building was expanded between 1963 and 1967 to include the current layout. The property has been occupied by Green s Art Supply since 1958.

Below Poverty Number: 103
Below Poverty Percent: 2.74
Meidan Income: 7180
Meidan Income Number: 282
Meidan Income Percent: 7.5
Vacant Housing Number: 191
Vacant Housing Percent: 9.26
Unemployed Number: 90
Unemployed Percent: 2.39

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EDR ID Number
EPA ID Number

	Site	Database(s)	EDR ID Number EPA ID Number
A5 SE < 1/8 0.037 mi. 195 ft.	WOODWARD DETROIT CVS LLC 444 S OLD WOODWARD AVE BIRMINGHAM, MI 48009 Site 5 of 9 in cluster A	RCRA-VSQQ	1014954689 MIK166505639
Relative: Lower	RCRA-VSQQ:		
Actual: 766 ft.	Date Form Received by Agency:	2016-05-06 00:00:00.0	
	Handler Name:	WOODWARD DETROIT CVS LLC	
	Handler Address:	444 S OLD WOODWARD AVE	
	Handler City,State,Zip:	BIRMINGHAM, MI 48009	
	EPA ID:	MIK166505639	
	Contact Name:	NICOLE WILKINSON	
	Contact Address:	Not reported	
	Contact City,State,Zip:	Not reported	
	Contact Telephone:	401-770-7132	
	Contact Fax:	Not reported	
	Contact Email:	NICOLE.WILKINSON@CVSHEALTH.COM	
	Contact Title:	Not reported	
	EPA Region:	05	
	Land Type:	Private	
	Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator	
	Non-Notifier:	Not reported	
	Biennial Report Cycle:	Not reported	
	Accessibility:	Not reported	
	Active Site Indicator:	Handler Activities	
	State District Owner:	Not reported	
	State District:	Not reported	
	Mailing Address:	ONE CVS DR	
	Mailing City,State,Zip:	WOONSOCKET, RI 02895	
	Owner Name:	WOODWARD DETROIT CVS LLC	
	Owner Type:	Private	
	Operator Name:	WOODWARD DETROIT CVS LLC	
	Operator Type:	Private	
	Short-Term Generator Activity:	No	
	Importer Activity:	No	
	Mixed Waste Generator:	No	
	Transporter Activity:	No	
	Transfer Facility Activity:	No	
	Recycler Activity with Storage:	No	
	Small Quantity On-Site Burner Exemption:	No	
	Smelting Melting and Refining Furnace Exemption:	No	
	Underground Injection Control:	No	
	Off-Site Waste Receipt:	No	
	Universal Waste Indicator:	No	
	Universal Waste Destination Facility:	No	
	Federal Universal Waste:	No	
	Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site Converter Treatment storage and Disposal Facility:	Not reported	
	Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site State-Reg Handler:	---	
	Federal Facility Indicator:	Not reported	
	Hazardous Secondary Material Indicator:	NN	
	Sub-Part K Indicator:	Not reported	
	Commercial TSD Indicator:	No	
	Treatment Storage and Disposal Type:	Not reported	
	2018 GPRA Permit Baseline:	Not on the Baseline	
	2018 GPRA Renewals Baseline:	Not on the Baseline	
	Permit Renewals Workload Universe:	Not reported	

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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2016-12-05 14:10:26.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Biennial: List of Years

Year: 2013

[Click Here for Biennial Reporting System Data:](#)

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE
Waste Code:	D002
Waste Description:	CORROSIVE WASTE
Waste Code:	D007
Waste Description:	CHROMIUM
Waste Code:	D009
Waste Description:	MERCURY
Waste Code:	D010
Waste Description:	SELENIUM
Waste Code:	D011
Waste Description:	SILVER
Waste Code:	D024

Map ID
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Waste Description:	M-CRESOL
Waste Code:	P001
Waste Description:	2H-1-BENZOPYRAN-2-ONE, 4-HYDROXY-3-(3-OXO-1-PHENYLBUTYL)-, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3% (OR) WARFARIN, & SALTS, WHEN PRESENT AT CONCENTRATIONS GREATER THAN 0.3%
Waste Code:	P075
Waste Description:	NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-,(S)-, & SALTS
Waste Code:	P081
Waste Description:	1,2,3-PROPANETRIOL, TRINITRATE (R) (OR) NITROGLYCERINE (R)
Waste Code:	P188
Waste Description:	BENZOIC ACID, 2-HYDROXY-, COMPD. WITH (3AS-CIS)-1,2,3,3A,8,8A-HEXAHYDRO-1,3A,8-TRIMETHYLPYRROLO[2,3-B]INDOL-5-YL METHYLCARBAMATE ESTER (1:1) (OR) PHYSOSTIGMINE SALICYLATE
Waste Code:	U122
Waste Description:	FORMALDEHYDE
Waste Code:	U165
Waste Description:	NAPHTHALENE
Waste Code:	U188
Waste Description:	PHENOL

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	GALYN ASSOCIATES LTD PARTNERSHIP (PROPER
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
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Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
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Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Owner/Operator Name:	GALYN ASSOCIATES LTD PARTNERSHIP (PROPER
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
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Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported

Map ID
Direction
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
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Owner/Operator Address:	Not reported
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Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported

Map ID
Direction
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	GALYN ASSOCIATES LP
Legal Status:	Private
Date Became Current:	1993-04-29 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	1435 N GLENGARRY RD
Owner/Operator City,State,Zip:	BLOOMFIELD VILLAGE, MI 48301
Owner/Operator Telephone:	248-642-8289
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	WOODWARD DETROIT CVS LLC
Legal Status:	Private
Date Became Current:	1998-03-31 00:00:00.

Map ID
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2014-02-28 00:00:00.0
Handler Name:	CVS PHARMACY #8136
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2012-05-21 00:00:00.0
Handler Name:	WOODWARD DETROIT CVS LLC
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2013-07-29 00:00:00.0
Handler Name:	WOODWARD DETROIT CVS LLC
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2014-05-16 00:00:00.0
Handler Name:	WOODWARD DETROIT CVS LLC
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No

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Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2014-10-22 00:00:00.0
Handler Name: WOODWARD DETROIT CVS LLC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2015-01-21 00:00:00.0
Handler Name: WOODWARD DETROIT CVS LLC
Federal Waste Generator Description: Large Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2015-04-24 00:00:00.0
Handler Name: WOODWARD DETROIT CVS LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2015-06-22 00:00:00.0
Handler Name: WOODWARD DETROIT CVS LLC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2015-10-26 00:00:00.0

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD DETROIT CVS LLC (Continued)

1014954689

Handler Name: WOODWARD DETROIT CVS LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2016-05-06 00:00:00.0
Handler Name: WOODWARD DETROIT CVS LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 44611
NAICS Description: PHARMACIES AND DRUG STORES

NAICS Code: 812922
NAICS Description: ONE-HOUR PHOTOFINISHING

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

6
WSW
< 1/8
0.037 mi.
197 ft.

BROWN STREET OFFICE BUILDING
200 EAST BROWN
BIRMINGHAM, MI

BEA S109094147
N/A

Relative:
Higher
Actual:
769 ft.

BEA:
Name: BROWN STREET OFFICE BUILDING
Address: 200 EAST BROWN
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 3891
District: Southeast MI
Date Received: 05/02/2008
Submitter Name: SMS & Associates, LLC

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BROWN STREET OFFICE BUILDING (Continued)

S109094147

Petition Determination: Affirmed
Petition Disclosure: 1
Category: N
Determination 20107A: No Request
Reviewer: tiernang
Division Assigned: RRD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

**A7
SE
< 1/8
0.040 mi.
211 ft.**

**MITCHELL GEORGE E CLEANERS
458 S WOODWARD AVE
BIRMINGHAM, MI 48009**

**EDR Hist Cleaner 1019994874
N/A**

Site 6 of 9 in cluster A

**Relative:
Lower** EDR Hist Cleaner

**Actual:
766 ft.**

Year:	Name:	Type:
1995	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
1996	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2011	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC
2012	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC
2013	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC
2014	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC

**A8
SE
< 1/8
0.042 mi.
221 ft.**

**MITCHELL GEORGE E CLEANERS
458 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009**

**EDR Hist Cleaner 1018699216
N/A**

Site 7 of 9 in cluster A

**Relative:
Lower** EDR Hist Cleaner

**Actual:
766 ft.**

Year:	Name:	Type:
1997	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
1998	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
1999	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2000	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2001	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2002	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2003	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2004	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2005	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2006	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs, NEC
2007	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MITCHELL GEORGE E CLEANERS (Continued)

1018699216

2008	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC
2009	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC
2010	GEORGE E MITCHELL CLEANERS	Drycleaning Plants, Except Rugs, NEC

A9
SE
< 1/8
0.044 mi.
230 ft.

ESTATE MOTORS
464 S WOODWARD AVE
BIRMINGHAM, MI 48011

Site 8 of 9 in cluster A

LUST **U004181541**
UST **N/A**

Relative:
Lower

LUST:

Actual:
765 ft.

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 99999
Facility ID: 00015180
Source: STATE OF MICHIGAN
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City,St,Zip: Not Recorded, XX 99999
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Estate Motors
Latitude: 42.54384
Longitude: -83.21181
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-1669-91
Release Date: 08/09/1991
Substance Released: Unknown
Release Status: Closed
Release Closed Date: 01/06/1993

Leak Number: C-2071-92
Release Date: 11/20/1992
Substance Released: Gasoline
Release Status: Closed
Release Closed Date: 06/30/1994

UST:

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48011
Facility Type: CLOSED
Facility ID: 00015180

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported
Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	9
Capacity:	6000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	05/01/1986
Remove Date:	09/13/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported

Name:	ESTATE MOTORS
Address:	464 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48011
Facility Type:	Removed from Ground
Facility ID:	00015180
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported
Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

District:	Not reported
Tank ID:	8
Capacity:	55
Tank Status:	Removed from Ground
Substance:	Other(HYD. OIL)
Install Date:	1976-04-04 00:00:00
Remove Date:	1990-08-02 00:00:00
Tank Number:	UTK-076432-15
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Tank Construction:	Asphalt Coated or Bare Steel
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	ESTATE MOTORS
Address:	464 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48011
Facility Type:	Currently In Use
Facility ID:	00015180
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported
Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	7
Capacity:	55
Tank Status:	Currently In Use
Substance:	Other(HYD. OIL)
Install Date:	1976-04-04 00:00:00
Remove Date:	Not reported
Tank Number:	UTK-016735-15
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Tank Construction:	Asphalt Coated or Bare Steel
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Facility Type: Currently In Use
Facility ID: 00015180
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: NOT RECORDED
Owner City: NOT RECORDED
Owner State: XX
Owner Zip: 99999
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 6
Capacity: 55
Tank Status: Currently In Use
Substance: Other(HYD. OIL)
Install Date: 1976-04-04 00:00:00
Remove Date: Not reported
Tank Number: UTK-038362-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48011
Facility Type: CLOSED
Facility ID: 00015180
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: NOT RECORDED
Owner City: NOT RECORDED
Owner State: XX
Owner Zip: 99999
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	5
Capacity:	3000
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	04/05/1971
Remove Date:	09/13/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	ESTATE MOTORS
Address:	464 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48011
Facility Type:	CLOSED
Facility ID:	00015180
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported
Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	4
Capacity:	10000
Tank Status:	Removed from Ground
Substance:	Diesel
Install Date:	04/05/1975
Remove Date:	09/13/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	ESTATE MOTORS
Address:	464 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48011
Facility Type:	CLOSED
Facility ID:	00015180
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported
Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	3
Capacity:	2000
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	04/04/1974
Remove Date:	05/01/1986
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	ESTATE MOTORS
Address:	464 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48011
Facility Type:	CLOSED
Facility ID:	00015180
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	2
Capacity:	2000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	04/04/1974
Remove Date:	05/01/1986
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	ESTATE MOTORS
Address:	464 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48011
Facility Type:	CLOSED
Facility ID:	00015180
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	NOT RECORDED
Owner City:	NOT RECORDED
Owner State:	XX
Owner Zip:	99999
Owner Contact:	Not reported
Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	13
Capacity:	1000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Remove Date: 01/01/1992
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48011
Facility Type: CLOSED
Facility ID: 00015180
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: NOT RECORDED
Owner City: NOT RECORDED
Owner State: XX
Owner Zip: 99999
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 12
Capacity: 1000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 01/01/1992
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

[Click this hyperlink](#) while viewing on your computer to access
3 additional MI_UST: record(s) in the EDR Site Report.

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

City,State,Zip: BIRMINGHAM 48011
Facility Type: CLOSED
Facility ID: 00015180
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: NOT RECORDED
Owner City: NOT RECORDED
Owner State: XX
Owner Zip: 99999
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 11
Capacity: 1000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 01/01/1992
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

UST 2:

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-086611-15
Facility Status: Inactive
Tank ID: 11
Tank Status: Removed from Ground
Tank Capacity: 1000
Tank Content: Gasoline
Install Date: Not reported
Removal Date: 01/01/1992

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Tank Release Detect: Not reported
Pipe Release Detect: Other
Tank Piping Material: Bare Steel
Tank Constr. Material: Asphalt Coated or Bare Steel,Other

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-086615-15
Facility Status: Inactive
Tank ID: 13
Tank Status: Removed from Ground
Tank Capacity: 1000
Tank Content: Gasoline
Install Date: Not reported
Removal Date: 01/01/1992
Tank Release Detect: Not reported
Pipe Release Detect: Other
Tank Piping Material: Bare Steel
Tank Constr. Material: Asphalt Coated or Bare Steel,Other

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-022981-15
Facility Status: Inactive
Tank ID: 9
Tank Status: Removed from Ground
Tank Capacity: 6000
Tank Content: Gasoline
Install Date: 05/01/1986
Removal Date: 09/13/1991
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-076416-15
Facility Status: Inactive
Tank ID: 3
Tank Status: Removed from Ground
Tank Capacity: 2000
Tank Content: Used Oil
Install Date: 04/04/1974
Removal Date: 05/01/1986
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-013217-15
Facility Status: Inactive
Tank ID: 5
Tank Status: Removed from Ground
Tank Capacity: 3000
Tank Content: Used Oil
Install Date: 04/05/1971
Removal Date: 09/13/1991
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-086608-15
Facility Status: Inactive
Tank ID: 10
Tank Status: Removed from Ground
Tank Capacity: 1000
Tank Content: Gasoline
Install Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Removal Date: 01/01/1992
Tank Release Detect: Not reported
Pipe Release Detect: Other
Tank Piping Material: Bare Steel
Tank Constr. Material: Asphalt Coated or Bare Steel,Other

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-016735-15
Facility Status: Inactive
Tank ID: 7
Tank Status: Currently In Use
Tank Capacity: 55
Tank Content: Other
Install Date: 04/04/1976
Removal Date: Not reported
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-038362-15
Facility Status: Inactive
Tank ID: 6
Tank Status: Currently In Use
Tank Capacity: 55
Tank Content: Other
Install Date: 04/04/1976
Removal Date: Not reported
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-030692-15
Facility Status: Inactive
Tank ID: 4
Tank Status: Removed from Ground
Tank Capacity: 10000
Tank Content: Diesel
Install Date: 04/05/1975
Removal Date: 09/13/1991
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-076411-15
Facility Status: Inactive
Tank ID: 2
Tank Status: Removed from Ground
Tank Capacity: 2000
Tank Content: Gasoline
Install Date: 04/04/1974
Removal Date: 05/01/1986
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-076432-15
Facility Status: Inactive
Tank ID: 8
Tank Status: Removed from Ground
Tank Capacity: 55
Tank Content: Other

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Install Date: 04/04/1976
Removal Date: 08/02/1990
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-011057-15
Facility Status: Inactive
Tank ID: 12
Tank Status: Removed from Ground
Tank Capacity: 1000
Tank Content: Gasoline
Install Date: Not reported
Removal Date: 01/01/1992
Tank Release Detect: Not reported
Pipe Release Detect: Other
Tank Piping Material: Bare Steel
Tank Constr. Material: Asphalt Coated or Bare Steel,Other

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-011057-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-013217-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-016735-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Currently In Use
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-022981-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-030692-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-038362-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Currently In Use
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-076407-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-076411-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-076416-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-076432-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-086608-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-086611-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-086615-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Removed from Ground
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

Name: ESTATE MOTORS
Address: 464 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48011
Region: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City: Not reported
Owner State: Not reported
Owner Zip: Not reported
Owner Phone: Not reported
Record ID: UTK-076407-15
Facility Status: Inactive
Tank ID: 1

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS (Continued)

U004181541

Tank Status: Removed from Ground
Tank Capacity: 2000
Tank Content: Gasoline
Install Date: 04/04/1974
Removal Date: 05/01/1986
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Galvanized Steel
Tank Constr. Material: Asphalt Coated or Bare Steel

A10
SE
< 1/8
0.044 mi.
231 ft.

ESTATE MOTORS LTD
464 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

RCRA NonGen / NLR
FINDS
ECHO

1000158893
MID040571135

Site 9 of 9 in cluster A

Relative:
Lower

Actual:
765 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 1998-11-02 00:00:00.0
Handler Name: ESTATE MOTORS LTD
Handler Address: 464 S OLD WOODWARD AVE
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MID040571135
Contact Name: JOHN POLK
Contact Address: 464 S OLD WOODWARD AVE
Contact City,State,Zip: BIRMINGHAM, MI 48009
Contact Telephone: 313-644-8400
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 464 S OLD WOODWARD AVE
Mailing City,State,Zip: BIRMINGHAM, MI 48009
Owner Name: HESQUIERE CHARLES G JR
Owner Type: Private
Operator Name: NAME NOT REPORTED
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: No
Universal Waste Destination Facility: No
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS LTD (Continued)

1000158893

Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	HESQUIERE CHARLES G JR
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS LTD (Continued)

1000158893

Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: NAME NOT REPORTED
Legal Status: Private
Date Became Current: 1970-01-01 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HESQUIERE CHARLES G JR
Legal Status: Private
Date Became Current: 1970-01-01 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: NAME NOT REPORTED
Legal Status: Private
Date Became Current: 1970-01-01 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 1998-11-02 00:00:00.0
Handler Name: ESTATE MOTORS LTD
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1986-10-06 00:00:00.0
Handler Name: ESTATE MOTORS LTD
Federal Waste Generator Description: Small Quantity Generator

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESTATE MOTORS LTD (Continued)

1000158893

State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	11131
NAICS Description:	ORANGE GROVES

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

FINDS:

Registry ID:	110003593111
--------------	--------------

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000158893
Registry ID:	110003593111
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110003593111
Name:	ESTATE MOTORS LTD
Address:	464 S OLD WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48009

B11
North
< 1/8
0.053 mi.
280 ft.

GAS STATION TV
255 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

Site 1 of 3 in cluster B

Relative:
Higher

EDR Hist Auto

Actual:
773 ft.

Year:	Name:	Type:
2009	GAS STATION TV	Gasoline Service Stations
2010	GAS STATION TV	Gasoline Service Stations
2011	GAS STATION TV	Gasoline Service Stations

EDR Hist Auto **1022226173**
N/A

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GAS STATION TV (Continued)

1022226173

2012 GAS STATION TV

Gasoline Service Stations

B12
North
< 1/8
0.053 mi.
280 ft.

ESSCO OF BIRMINGHAM LLC
255 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

RCRA-VSQQ 1017770828
MIK656803600

Site 2 of 3 in cluster B

Relative:
Higher
Actual:
773 ft.

RCRA-VSQQ:
Date Form Received by Agency: 2015-01-21 00:00:00.0
Handler Name: ESSCO OF BIRMINGHAM LLC
Handler Address: 255 S OLD WOODWARD AVE
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIK656803600
Contact Name: STEFANIE FOUMIA
Contact Address: Not reported
Contact City,State,Zip: Not reported
Contact Telephone: 248-645-5900
Contact Fax: 248-645-5922
Contact Email: JESSHAKI@ESSCODEVELOPMENT.COM
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 210 OLD WOODWARD AVE
Mailing City,State,Zip: BIRMINGHAM, MI 48009
Owner Name: ESSCO OF BIRMINGHAM LLC
Owner Type: Private
Operator Name: ESSCO OF BIRMINGHAM LLC
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: No
Universal Waste Destination Facility: No
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported
Active Site State-Reg Treatment Storage and Disposal Facility: Not reported
Active Site State-Reg Handler: ---
Federal Facility Indicator: Not reported
Hazardous Secondary Material Indicator: NN
Sub-Part K Indicator: Not reported
Commercial TSD Indicator: No
Treatment Storage and Disposal Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESSCO OF BIRMINGHAM LLC (Continued)

1017770828

2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2015-01-30 09:08:48.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	ESSCO OF BIRMINGHAM LLC
Legal Status:	Private
Date Became Current:	2000-06-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	ESSCO OF BIRMINGHAM LLC
Legal Status:	Private
Date Became Current:	2000-06-01 00:00:00.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ESSCO OF BIRMINGHAM LLC (Continued)

1017770828

Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2015-01-21 00:00:00.0
Handler Name: ESSCO OF BIRMINGHAM LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 531190
NAICS Description: LESSORS OF OTHER REAL ESTATE PROPERTY

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

C13
East
< 1/8
0.054 mi.
286 ft.

BRITANNIA PROPERTIES LLC
401 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

Site 1 of 2 in cluster C

EDR Hist Auto 1020586160
N/A

Relative:
Lower

EDR Hist Auto

Actual:
767 ft.

Year:	Name:	Type:
2009	BRITANNIA PROPERTIES LLC	Gasoline Service Stations, NEC
2010	BRITANNIA PROPERTIES LLC	Gasoline Service Stations, NEC
2011	BRITANNIA PROPERTIES LLC	Gasoline Service Stations, NEC
2011	GAS CITY CORPORATE OFFICES	Gasoline Service Stations
2012	BRITANNIA PROPERTIES LLC	Gasoline Service Stations, NEC
2012	GAS CITY LTD	Gasoline Service Stations, NEC
2012	GAS CITY CORPORATE OFFICES	Gasoline Service Stations
2013	GAS CITY LTD	Gasoline Service Stations, NEC
2013	GAS CITY CORPORATE OFFICES	Gasoline Service Stations
2014	GAS CITY CORPORATE OFFICES	Gasoline Service Stations
2014	GAS CITY LTD	Gasoline Service Stations, NEC

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

D14
NE
< 1/8
0.072 mi.
381 ft.
JAX KAR WASH #048
34745 WOODWARD AVE
BIRMINGHAM, MI 48009
Site 1 of 5 in cluster D

LUST
UST
INVENTORY
BEA
WDS
U003319644
N/A

Relative:
Higher

Actual:
770 ft.

LUST:
Name: JAX KAR WASH #048
Address: 34745 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00001952
Source: STATE OF MICHIGAN
Owner Name: JaxKar Wash #048
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Jax Kar Wash #048
Latitude: 42.53949
Longitude: -83.20706
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0859-00
Release Date: 10/27/2000
Substance Released: Unknown
Release Status: Open
Release Closed Date: Not reported

UST:
Name: JAX KAR WASH #048
Address: 34745 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0927
Facility Type: CLOSED
Facility ID: 00001952
Owner Name: JAX KAR WASH #048
Owner Address: 34745 WOODWARD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48011
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Abdeem Shakoor
Contact Phone: (781) 231-9300
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JAX KAR WASH #048 (Continued)

U003319644

Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 10000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 01/01/1966
Remove Date: 10/27/2000
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53949
Longitude: -83.20706

Name: JAX KAR WASH #048
Address: 34745 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0927
Facility Type: CLOSED
Facility ID: 00001952
Owner Name: JAX KAR WASH #048
Owner Address: 34745 WOODWARD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48011
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Abdeem Shakoor
Contact Phone: (781) 231-9300
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 10000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 01/01/1966
Remove Date: 10/27/2000
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JAX KAR WASH #048 (Continued)

U003319644

Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53949
Longitude: -83.20706

INVENTORY:

Name: JAX KAR WASH
Address: 34745 WOODWARD AVENUE
City,State,Zip: MI 48009
Bea Number: 200101459LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

Name: JAX KAR WASH #048
Address: 34745 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.53949
Longitude: -83.20706

BEA:

Name: JAX KAR WASH
Address: 34745 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: 1459
District: Southeast MI
Date Received: 08/08/2001
Submitter Name: BMW CAR WASH, L.L.C.
Petition Determination: No Request
Petition Disclosure: 0
Category: S
Determination 20107A: No Request
Reviewer: cokt
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JAX KAR WASH #048 (Continued)

U003319644

WDS:

Name: WASH DEPOT
Address: 34745 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIG000026887
WMD Id: 429618
Site Specific Name: WASH DEPOT
Mailing Address: 34745 WOODWARD AVE
Mailing City/State/Zip: 48009
Mailing County: OAKLAND

C15
ESE
< 1/8
0.076 mi.
399 ft.

FRANKLIN SAVINGS BANK
479 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

Site 2 of 2 in cluster C

UST U003867174
N/A

Relative:
Lower

UST:

Actual:
765 ft.

Name: FRANKLIN SAVINGS BANK
Address: 479 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6652
Facility Type: CLOSED
Facility ID: 00013244
Owner Name: FRANKLIN BANK
Owner Address: PO BOX 5006
Owner City: SOUTHFIELD
Owner State: MI
Owner Zip: 48086-5006
Owner Contact: Not reported
Owner Phone: 2483589526
Contact: DOUGLAS DOSSIN
Contact Phone: (313) 358-0818
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 1000
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: Not reported
Remove Date: 09/28/1988
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54392
Longitude: -83.21143

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

	Site	Database(s)	EDR ID Number EPA ID Number
B16 North < 1/8 0.085 mi. 450 ft.	UPTOWN ENTERTAINMENT 211 S OLD WOODWARD AVE BIRMINGHAM, MI 48009 Site 3 of 3 in cluster B	RCRA NonGen / NLR	1016958103 MIK151544753
Relative: Higher	RCRA NonGen / NLR:		
Actual: 776 ft.	Date Form Received by Agency:	2014-01-10 00:00:00.0	
	Handler Name:	UPTOWN ENTERTAINMENT	
	Handler Address:	211 S OLD WOODWARD AVE	
	Handler City,State,Zip:	BIRMINGHAM, MI 48009	
	EPA ID:	MIK151544753	
	Contact Name:	DUSTIN HAURWELL	
	Contact Address:	Not reported	
	Contact City,State,Zip:	Not reported	
	Contact Telephone:	248-723-6230	
	Contact Fax:	Not reported	
	Contact Email:	Not reported	
	Contact Title:	Not reported	
	EPA Region:	05	
	Land Type:	Private	
	Federal Waste Generator Description:	Not a generator, verified	
	Non-Notifier:	Not reported	
	Biennial Report Cycle:	Not reported	
	Accessibility:	Not reported	
	Active Site Indicator:	Not reported	
	State District Owner:	Not reported	
	State District:	Not reported	
	Mailing Address:	211 S OLD WOODWARD AVE	
	Mailing City,State,Zip:	BIRMINGHAM, MI 48009	
	Owner Name:	UPTOWN ENTERTAINMENT	
	Owner Type:	Private	
	Operator Name:	UPTOWN ENTERTAINMENT	
	Operator Type:	Private	
	Short-Term Generator Activity:	No	
	Importer Activity:	No	
	Mixed Waste Generator:	No	
	Transporter Activity:	No	
	Transfer Facility Activity:	No	
	Recycler Activity with Storage:	No	
	Small Quantity On-Site Burner Exemption:	No	
	Smelting Melting and Refining Furnace Exemption:	No	
	Underground Injection Control:	No	
	Off-Site Waste Receipt:	No	
	Universal Waste Indicator:	No	
	Universal Waste Destination Facility:	No	
	Federal Universal Waste:	No	
	Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site Converter Treatment storage and Disposal Facility:	Not reported	
	Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site State-Reg Handler:	---	
	Federal Facility Indicator:	Not reported	
	Hazardous Secondary Material Indicator:	NN	
	Sub-Part K Indicator:	Not reported	
	Commercial TSD Indicator:	No	
	Treatment Storage and Disposal Type:	Not reported	
	2018 GPRA Permit Baseline:	Not on the Baseline	
	2018 GPRA Renewals Baseline:	Not on the Baseline	
	Permit Renewals Workload Universe:	Not reported	

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

UPTOWN ENTERTAINMENT (Continued)

1016958103

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2015-01-05 10:34:24.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	UPTOWN ENTERTAINMENT
Legal Status:	Private
Date Became Current:	2014-01-10 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	UPTOWN ENTERTAINMENT
Legal Status:	Private
Date Became Current:	2014-01-10 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

UPTOWN ENTERTAINMENT (Continued)

1016958103

Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2014-01-10 00:00:00.0
Handler Name: UPTOWN ENTERTAINMENT
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 562910
NAICS Description: REMEDIATION SERVICES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

E17
SE
< 1/8
0.087 mi.
459 ft.
Relative:
Lower
Actual:
764 ft.

MAVERICK EXPRESS INC
555 S WOODWARD
BIRMINGHAM, MI 48011

Site 1 of 3 in cluster E

EDR Hist Auto

Year: Name: Type:
1983 MAVERICK EXPRESS INC Gasoline Service Stations

EDR Hist Auto 1022110556
N/A

E18
SE
< 1/8
0.087 mi.
459 ft.

BIRMINGHAM CLEANERS INC
1253 555 S WOODWARD
BIRMINGHAM, MI 48009

Site 2 of 3 in cluster E

EDR Hist Cleaner

Year: Name: Type:
1991 MUNSON JAMES S INC Drycleaning Plants, Except Rugs
1991 BIRMINGHAM CLEANERS INC Drycleaning Plants, Except Rugs
1991 WATKINS MANAGEMENT CO Drycleaning Plants, Except Rugs, NEC
1992 WATKINS MANAGEMENT CO Drycleaning Plants, Except Rugs, NEC

EDR Hist Cleaner 1019940021
N/A

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM CLEANERS INC (Continued)

1019940021

1992 BIRMINGHAM CLEANERS INC
1992 MUNSON JAMES S INC

Drycleaning Plants, Except Rugs
Drycleaning Plants, Except Rugs

D19
NE
< 1/8
0.091 mi.
482 ft.

WOODWARD BROWN ASSOCIATES, LLC
34901 WOODWARD AVENUE
OAKLAND (County), MI 48073

INVENTORY S114029255
N/A

Site 2 of 5 in cluster D

Relative:
Higher

INVENTORY:

Actual:
773 ft.

Name: WOODWARD BROWN ASSOCIATES, LLC
Address: 34901 WOODWARD AVENUE
City,State,Zip: MI 48073
Bea Number: 201004572LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: 42.54567
Longitude: -83.21134

D20
NE
< 1/8
0.094 mi.
498 ft.

WOODWARD BROWN ASSOCIATES, LLC
34901 WOODWARD AVENUE
BIRMINGHAM, MI 48073

BEA S110624723
N/A

Site 3 of 5 in cluster D

Relative:
Higher

BEA:

Actual:
773 ft.

Name: WOODWARD BROWN ASSOCIATES, LLC
Address: 34901 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48073
Secondary Address: Not reported
BEA Number: 4572
District: Southeast MI
Date Received: 09/16/2010
Submitter Name: Woodward Brown Associates, LLC
Petition Determination: No Request
Petition Disclosure: 0
Category: N
Determination 20107A: No Request
Reviewer: berakr
Division Assigned: RRD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

D21
NE
< 1/8
0.094 mi.
498 ft.

WEISS SAMONA
34901 WOODWARD AVENUE
BIRMINGHAM, MI 48009

US BROWNFIELDS **1016357344**
FINDS **N/A**

Site 4 of 5 in cluster D

Relative:
Higher

US BROWNFIELDS:

Actual:
773 ft.

Name: WEISS SAMONA
Address: 34901 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Recipient Name: Oakland County
Grant Type: Assessment
Property Number: -
Parcel size: .52
Latitude: 42.545658
Longitude: -83.2113339
HCM Label: -
Map Scale: -
Point of Reference: -
Highlights:

Former Use: The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.

Datum: -
Acres Property ID: 115761
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 2800
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Hazardous
Accomplishment Type: Phase I Environmental Assessment
Accomplishment Count: N
Cooperative Agreement Number: 00E92301
Start Date: 04/27/2010
Ownership Entity: Private
Completion Date: -
Current Owner: -
Did Owner Change: -
Cleanup Required: U
Video Available: -

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Photo Available:	Y
Institutional Controls Required:	U
IC Category Proprietary Controls:	-
IC Cat. Info. Devices:	-
IC Cat. Gov. Controls:	-
IC Cat. Enforcement Permit Tools:	-
IC in place date:	-
IC in place:	-
State/tribal program date:	-
State/tribal program ID:	-
State/tribal NFA date:	-
Air cleaned:	-
Asbestos found:	-
Asbestos cleaned:	-
Controlled substance found:	-
Controlled substance cleaned:	-
Drinking water affected:	-
Drinking water cleaned:	-
Groundwater affected:	Y
Groundwater cleaned:	-
Lead contaminant found:	Y
Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	Y
Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.52
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Copper cleaned up: -
Iron cleaned up: -
mercury cleaned up: -
Nickel Cleaned Up: -
No clean up: -
Pesticides cleaned up: -
Selenium cleaned up: -
SVOCs cleaned up: -
Unknown clean up: -
Arsenic contaminant found: -
Cadmium contaminant found: -
Chromium contaminant found: -
Copper contaminant found: -
Iron contaminant found: -
Mercury contaminant found: -
Nickel contaminant found: -
No contaminant found: -
Pesticides contaminant found: -
Selenium contaminant found: -
SVOCs contaminant found: -
Unknown contaminant found: -
Future Use: Multistory -
Media affected Bluiding Material: -
Media affected indoor air: -
Building material media cleaned up: -
Indoor air media cleaned up: -
Unknown media cleaned up: -
Past Use: Multistory
Property Description:

Not reported

The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.

Below Poverty Number: 80
Below Poverty Percent: 2.48
Meidan Income: 10501
Meidan Income Number: 237
Meidan Income Percent: 7.33
Vacant Housing Number: 169
Vacant Housing Percent: 9.31
Unemployed Number: 75
Unemployed Percent: 2.32

Name: WEISS SAMONA
Address: 34901 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Recipient Name: Oakland County
Grant Type: Assessment
Property Number: -
Parcel size: .52
Latitude: 42.545658

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Longitude: -83.2113339
HCM Label: -
Map Scale: -
Point of Reference: -
Highlights: Former Use: The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.

Datum: -
Acres Property ID: 115761
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 2800
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Hazardous
Accomplishment Type: Phase I Environmental Assessment
Accomplishment Count: N
Cooperative Agreement Number: 00E92301
Start Date: 04/27/2010
Ownership Entity: Private
Completion Date: -
Current Owner: -
Did Owner Change: -
Cleanup Required: U
Video Available: -
Photo Available: Y
Institutional Controls Required: U
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -
IC in place: -
State/tribal program date: -
State/tribal program ID: -
State/tribal NFA date: -
Air cleaned: -
Asbestos found: -

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Asbestos cleaned:	-
Controlled substance found:	-
Controlled substance cleaned:	-
Drinking water affected:	-
Drinking water cleaned:	-
Groundwater affected:	Y
Groundwater cleaned:	-
Lead contaminant found:	Y
Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	Y
Other metals cleaned:	-
Other contaminants found:	-
Other contaminants found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.52
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-
No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-
Future Use: Multistory	-
Media affected Bluiding Material:	-
Media affected indoor air:	-
Building material media cleaned up:	-
Indoor air media cleaned up:	-
Unknown media cleaned up:	-
Past Use: Multistory	Not reported
Property Description:	The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.
Below Poverty Number:	80
Below Poverty Percent:	2.48
Meidan Income:	10501
Meidan Income Number:	237
Meidan Income Percent:	7.33
Vacant Housing Number:	169
Vacant Housing Percent:	9.31
Unemployed Number:	75
Unemployed Percent:	2.32
Name:	WEISS SAMONA
Address:	34901 WOODWARD AVENUE
City,State,Zip:	BIRMINGHAM, MI 48009
Recipient Name:	Oakland County
Grant Type:	Assessment
Property Number:	-
Parcel size:	.52
Latitude:	42.545658
Longitude:	-83.2113339
HCM Label:	-
Map Scale:	-
Point of Reference:	-
Highlights:	Former Use: The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.

Datum: -
Acres Property ID: 115761
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 5400
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Hazardous
Accomplishment Type: Phase II Environmental Assessment
Accomplishment Count: N
Cooperative Agreement Number: 00E92301
Start Date: 05/26/2010
Ownership Entity: Private
Completion Date: -
Current Owner: -
Did Owner Change: -
Cleanup Required: U
Video Available: -
Photo Available: Y
Institutional Controls Required: U
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -
IC in place: -
State/tribal program date: -
State/tribal program ID: -
State/tribal NFA date: -
Air cleaned: -
Asbestos found: -
Asbestos cleaned: -
Controlled substance found: -
Controlled substance cleaned: -
Drinking water affected: -
Drinking water cleaned: -
Groundwater affected: Y
Groundwater cleaned: -
Lead contaminant found: Y
Lead cleaned up: -
No media affected: Not reported
Unknown media affected: -
Other cleaned up: -
Other metals found: Y

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.52
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-
Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-
No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-
Future Use: Multistory	-
Media affected Bluiding Material:	-
Media affected indoor air:	-
Building material media cleaned up:	-
Indoor air media cleaned up:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Unknown media cleaned up:	-
Past Use: Multistory	Not reported
Property Description:	The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.
Below Poverty Number:	80
Below Poverty Percent:	2.48
Meidan Income:	10501
Meidan Income Number:	237
Meidan Income Percent:	7.33
Vacant Housing Number:	169
Vacant Housing Percent:	9.31
Unemployed Number:	75
Unemployed Percent:	2.32
Name:	WEISS SAMONA
Address:	34901 WOODWARD AVENUE
City,State,Zip:	BIRMINGHAM, MI 48009
Recipient Name:	Oakland County
Grant Type:	Assessment
Property Number:	-
Parcel size:	.52
Latitude:	42.545658
Longitude:	-83.2113339
HCM Label:	-
Map Scale:	-
Point of Reference:	-
Highlights:	Former Use: The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.
Datum:	-
Acres Property ID:	115761
IC Data Access:	-
Start Date:	-
Redev Completion Date:	-
Completed Date:	-
Acres Cleaned Up:	-
Cleanup Funding:	-
Cleanup Funding Source:	-
Assessment Funding:	5400

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Assessment Funding Source:	EPA
Redevelopment Funding:	-
Redev. Funding Source:	-
Redev. Funding Entity Name:	-
Redevelopment Start Date:	-
Assessment Funding Entity:	US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity:	-
Grant Type:	Hazardous
Accomplishment Type:	Phase II Environmental Assessment
Accomplishment Count:	N
Cooperative Agreement Number:	00E92301
Start Date:	05/26/2010
Ownership Entity:	Private
Completion Date:	-
Current Owner:	-
Did Owner Change:	-
Cleanup Required:	U
Video Available:	-
Photo Available:	Y
Institutional Controls Required:	U
IC Category Proprietary Controls:	-
IC Cat. Info. Devices:	-
IC Cat. Gov. Controls:	-
IC Cat. Enforcement Permit Tools:	-
IC in place date:	-
IC in place:	-
State/tribal program date:	-
State/tribal program ID:	-
State/tribal NFA date:	-
Air cleaned:	-
Asbestos found:	-
Asbestos cleaned:	-
Controlled substance found:	-
Controlled substance cleaned:	-
Drinking water affected:	-
Drinking water cleaned:	-
Groundwater affected:	Y
Groundwater cleaned:	-
Lead contaminant found:	Y
Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	Y
Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.52
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	-
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-
Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-
No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-
Future Use: Multistory	-
Media affected Bluiding Material:	-
Media affected indoor air:	-
Building material media cleaned up:	-
Indoor air media cleaned up:	-
Unknown media cleaned up:	-
Past Use: Multistory	Not reported
Property Description:	The Property was developed as a feed mill in 1915. From at least 1921 to at least 1931 the Property was used as a lumber and coal yard, with up to nine buildings and several areas labeled as lumber piles. By 1944 the northern portion of the Property was developed with a bowling alley and by 1949 the southwest corner of the Property was developed with a hand laundry building. The southern portion of the Property was occupied by a used car lot by 1960. The bowling alley reportedly operated until at least 1973 when it was occupied for retail uses. A commercial strip mall building was constructed by 1974 and occupied the southern portion of the Property until 2005. Since the demolition of the buildings in 2005, the Property has been used as a parking lot.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WEISS SAMONA (Continued)

1016357344

Below Poverty Number: 80
Below Poverty Percent: 2.48
Meidan Income: 10501
Meidan Income Number: 237
Meidan Income Percent: 7.33
Vacant Housing Number: 169
Vacant Housing Percent: 9.31
Unemployed Number: 75
Unemployed Percent: 2.32

FINDS:

Registry ID: 110043085050

Click Here:

Environmental Interest/Information System:

US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES)
is an federal online database for Brownfields Grantees to
electronically submit data directly to EPA.

[Click this hyperlink](#) while viewing on your computer to access
additional FINDS: detail in the EDR Site Report.

D22
NE
< 1/8
0.094 mi.
498 ft.

WOODWARD BROWN ASSOC LLC
34901 WOODWARD
BIRMINGHAM, MI 48009
Site 5 of 5 in cluster D

INVENTORY
BEA
S114029254
N/A

Relative:
Higher
Actual:
773 ft.

INVENTORY:
Name: WOODWARD BROWN ASSOC LLC
Address: 34901 WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.54567
Longitude: -83.21134

BEA:

Name: WOODWARD BROWN ASSOC LLC
Address: 34901 WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 09/16/2010
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63005920
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201004572LV

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD BROWN ASSOC LLC (Continued)

S114029254

Approval Status:	RRD Received
Workflow Status:	Submitted
Date Submitted:	2010-09-21 11:16:00
Date Completed:	Not reported
Township:	Birmingham
Work Unit:	Warren
Comments:	Not reported
Organization:	Woodward Brown Associates, LLC
Contact:	Daniel R. Cassidy
Contact Type:	Submitter Contact

**E23
SE
< 1/8
0.098 mi.
519 ft.**

**MITCHELL GEORGE E CLEANERS INC
534 S WOODWARD AVE
BIRMINGHAM, MI 48067**

**EDR Hist Cleaner 1020042154
N/A**

Site 3 of 3 in cluster E

**Relative:
Lower**

EDR Hist Cleaner

**Actual:
763 ft.**

Year:	Name:	Type:
1969	MITCHELL-DOUGLAS CLEANERS	Drycleaning Plants, Except Rugs
1970	MITCHELL-DOUGLAS CLEANERS	Drycleaning Plants, Except Rugs
1971	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1972	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1973	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1974	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1975	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1976	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1977	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1978	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1979	MITCHELL GEORGE E CLEANERS	Drycleaning Plants, Except Rugs
1980	MITCHELL GEORGE E CLEANERS INC	Drycleaning Plants, Except Rugs

**F24
NNW
< 1/8
0.116 mi.
612 ft.**

**BIRMINGHAM CAMERA SHOP
168 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009**

**RCRA NonGen / NLR 1000828149
FINDS MID985652064
ECHO**

Site 1 of 2 in cluster F

**Relative:
Higher**

RCRA NonGen / NLR:

**Actual:
780 ft.**

Date Form Received by Agency:	1994-06-20 00:00:00.0
Handler Name:	BIRMINGHAM CAMERA SHOP
Handler Address:	168 S OLD WOODWARD AVE
Handler City,State,Zip:	BIRMINGHAM, MI 48009
EPA ID:	MID985652064
Contact Name:	WILLIAM DAY
Contact Address:	168 S OLD WOODWARD AVE
Contact City,State,Zip:	BIRMINGHAM, MI 48009
Contact Telephone:	248-644-0510
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	05
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM CAMERA SHOP (Continued)

1000828149

Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	168 S OLD WOODWARD AVE
Mailing City,State,Zip:	BIRMINGHAM, MI 48009
Owner Name:	DAY WILLIAM
Owner Type:	Private
Operator Name:	DAY WILLIAM
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM CAMERA SHOP (Continued)

1000828149

Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	DAY WILLIAM
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	DAY WILLIAM
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	DAY WILLIAM
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	DAY WILLIAM
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM CAMERA SHOP (Continued)

1000828149

Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	1994-06-20 00:00:00.0
Handler Name:	BIRMINGHAM CAMERA SHOP
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	1992-10-01 00:00:00.0
Handler Name:	BIRMINGHAM CAMERA SHOP
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	44313
NAICS Description:	CAMERA AND PHOTOGRAPHIC SUPPLIES STORES

Facility Has Received Notices of Violations:

Violations:	No Violations Found
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Evaluation Action Summary:

Evaluations:	No Evaluations Found
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FINDS:

Registry ID:	110003675443
--------------	--------------

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport,

Map ID
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Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
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BIRMINGHAM CAMERA SHOP (Continued)

1000828149

and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000828149
Registry ID: 110003675443
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110003675443>
Name: BIRMINGHAM CAMERA SHOP
Address: 168 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009

G25
NNE
< 1/8
0.119 mi.
627 ft.

34965 WOODWARD AVENUE
34965 WOODWARD AVENUE
BIRMINGHAM, MI 48009

INVENTORY **S118622157**
BEA **N/A**

Site 1 of 5 in cluster G

Relative:
Higher

Actual:
777 ft.

INVENTORY:

Name: PEABODY OWNER, LLC
Address: 34965 WOODWARD AVENUE
City,State,Zip: MI 48009
Bea Number: 201607216LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: 42.54618
Longitude: -83.21161

Name: 34965 WOODWARD AVENUE
Address: 34965 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.54618
Longitude: -83.21161

Name: ALDEN DEVELOPMENT GROUP, LLC
Address: 34965 WOODWARD AVENUE
City,State,Zip: MI 48009
Bea Number: 201606862LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: 42.54618
Longitude: -83.21161

BEA:

Name: 34965 WOODWARD AVENUE
Address: 34965 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported

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Database(s)

EDR ID Number
EPA ID Number

34965 WOODWARD AVENUE (Continued)

S118622157

District: Not reported
Date Received: 01/28/2016
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63006065
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201606862LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2016-02-01 13:27:40
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: BEA SUBMITTED ON CD Associated with BEA 7216
Organization: Alden Development Group, LLC
Contact: Matthew A. Vander Eide
Contact Type: Submitter Contact

Name: 34965 WOODWARD AVENUE
Address: 34965 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 08/22/2016
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63006065
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201607216LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2016-08-23 08:42:26
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: BEA submitted on CD. Associate with BEA #6862.
Organization: Peabody Owner, LLC
Contact: SME
Contact Type: Submitter Contact

Map ID
Direction
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Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

H26
ENE
1/8-1/4
0.129 mi.
679 ft.

SPEEDWAY #8721
34750 WOODWARD 347 BLVD
BIRMINGHAM, MI 48009

Site 1 of 4 in cluster H

LUST
INVENTORY
Financial Assurance

S118615272
N/A

Relative:
Higher

Actual:
768 ft.

LUST:

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00016370
Source: STATE OF MICHIGAN
Owner Name: SpeedwayLLC
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Speedway #8721
Latitude: 42.54488
Longitude: -83.20977
Date of Collection: 04/06/2007
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0161-14
Release Date: 12/09/2014
Substance Released: Gasoline,Gasoline,Gasoline,Diesel
Release Status: Open
Release Closed Date: Not reported

Leak Number: C-1633-91
Release Date: 08/27/1991
Substance Released: Unknown
Release Status: Closed
Release Closed Date: 02/09/1996

INVENTORY:

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.54489
Longitude: -83.20977

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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY #8721 (Continued)

S118615272

FINANCIAL ASSURANCE 3:

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM, MI 48009
Facility ID: 00016370
Exempt: No
Expiration Date: 12/31/2020
Bond Rating Tests: Not reported
Commerical Insurance: Not reported
Guarantee: Not reported
Letter of Credit: Not reported
Risk Retention Group: Not reported
Self Insurance: Not reported
State Funds: Not reported
Surety Bond: CHECKED
Trust Funds: Not reported
Year: 2019

H27
ENE
1/8-1/4
0.129 mi.
679 ft.

SPEEDWAY LLC
34750 WOODWARD AVE
BIRMINGHAM, MI 48009

Site 2 of 4 in cluster H

RCRA-VSQG 1000844604
UST MID985666387
FINDS
ECHO

Relative:
Higher
Actual:
768 ft.

RCRA-VSQG:
Date Form Received by Agency: 2012-08-20 00:00:00.0
Handler Name: SPEEDWAY LLC
Handler Address: 34750 WOODWARD AVE
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MID985666387
Contact Name: CHARLES A BESSE
Contact Address: Not reported
Contact City,State,Zip: Not reported
Contact Telephone: 937-863-6272
Contact Fax: 937-863-6078
Contact Email: CABBESSE@SPEEDWAY.COM
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: PO BOX 1500
Mailing City,State,Zip: SPRINGFIELD, OH 45501
Owner Name: SPEEDWAY LLC
Owner Type: Private
Operator Name: SPEEDWAY LLC
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No

Map ID
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSD Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2012-09-05 15:29:56.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	SPEEDWAY SUPERAMERICA LLC
Legal Status:	Private
Date Became Current:	1999-12-11 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	SPEEDWAY SUPERAMERICA LLC
Legal Status:	Private
Date Became Current:	1999-12-11 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	SPEEDWAY LLC
Legal Status:	Private
Date Became Current:	1999-06-10 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	SPEEDWAY SUPERAMERICA LLC
Legal Status:	Private
Date Became Current:	1999-12-11 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	SPEEDWAY SUPERAMERICA LLC
Legal Status:	Private
Date Became Current:	1999-12-11 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported

Map ID
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	SPEEDWAY SUPERAMERICA LLC
Legal Status:	Private
Date Became Current:	1999-12-11 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	SPEEDWAY SUPERAMERICA LLC
Legal Status:	Private
Date Became Current:	1999-12-11 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	SPEEDWAY LLC
Legal Status:	Private
Date Became Current:	1999-06-10 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	1998-09-17 00:00:00.0
Handler Name:	SPEEDWAY SUPERAMERICA LLC
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported
Receive Date:	1993-09-02 00:00:00.0
Handler Name:	SPEEDWAY SUPERAMERICA LLC
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator

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MAP FINDINGS

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Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2005-06-03 00:00:00.0
Handler Name: SPEEDWAY SUPERAMERICA LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2012-08-20 00:00:00.0
Handler Name: SPEEDWAY LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 44711
NAICS Description: GASOLINE STATIONS WITH CONVENIENCE STORES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

UST:

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500

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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 9
Capacity: 8000
Tank Status: Currently In Use
Substance: Diesel
Install Date: 05/01/1992
Remove Date: Not reported
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500
Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 8

Map ID
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Capacity: 10000
Tank Status: Currently In Use
Substance: Gasoline
Install Date: 05/01/1992
Remove Date: Not reported
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500
Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 7
Capacity: 10000
Tank Status: Currently In Use
Substance: Gasoline
Install Date: 05/01/1992
Remove Date: Not reported
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

Name: SPEEDWAY #8721

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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500
Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 6
Capacity: 12000
Tank Status: Currently In Use
Substance: Gasoline
Install Date: 05/01/1992
Remove Date: Not reported
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500
Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET

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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 5
Capacity: 550
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: 04/22/1959
Remove Date: 03/01/1992
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500
Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 4
Capacity: 1000
Tank Status: Removed from Ground
Substance: Other(FUEL OIL)
Install Date: 04/22/1959
Remove Date: 03/01/1992
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported

Map ID
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Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	SPEEDWAY #8721
Address:	34750 WOODWARD 347 BLVD
City,State,Zip:	BIRMINGHAM 48009
Facility Type:	ACTIVE
Facility ID:	00016370
Owner Name:	SPEEDWAY LLC
Owner Address:	PO BOX 1500
Owner City:	SPRINGFIELD
Owner State:	OH
Owner Zip:	45501
Owner Contact:	Not reported
Owner Phone:	9378643000
Contact:	Eric Swaisgood
Contact Phone:	(937) 863-6513
Date of Collection:	04/06/2007
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	GPS Code Meas. Standard Positioning Service SA Off
District:	Region 1 - SE Michigan District Office
Tank ID:	3
Capacity:	12000
Tank Status:	Removed from Ground
Substance:	Diesel
Install Date:	04/21/1974
Remove Date:	03/01/1992
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54488
Longitude:	-83.20977
Name:	SPEEDWAY #8721
Address:	34750 WOODWARD 347 BLVD
City,State,Zip:	BIRMINGHAM 48009
Facility Type:	ACTIVE
Facility ID:	00016370
Owner Name:	SPEEDWAY LLC
Owner Address:	PO BOX 1500
Owner City:	SPRINGFIELD
Owner State:	OH
Owner Zip:	45501
Owner Contact:	Not reported
Owner Phone:	9378643000

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 12000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/21/1974
Remove Date: 03/01/1992
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

Name: SPEEDWAY #8721
Address: 34750 WOODWARD 347 BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: ACTIVE
Facility ID: 00016370
Owner Name: SPEEDWAY LLC
Owner Address: PO BOX 1500
Owner City: SPRINGFIELD
Owner State: OH
Owner Zip: 45501
Owner Contact: Not reported
Owner Phone: 9378643000
Contact: Eric Swaisgood
Contact Phone: (937) 863-6513
Date of Collection: 04/06/2007
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: GPS Code Meas. Standard Positioning Service SA Off
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/21/1972
Remove Date: 03/02/1992

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SPEEDWAY LLC (Continued)

1000844604

Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54488
Longitude: -83.20977

FINDS:

Registry ID: 110003685968

[Click Here:](#)

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

EnvId: 1000844604
Registry ID: 110003685968
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110003685968>
Name: SPEEDWAY LLC
Address: 34750 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009

**G28
NNE
1/8-1/4
0.137 mi.
725 ft.**

**SHELL - HUNTER
34977 WOODWARD AVE
BIRMINGHAM, MI 48009**

Site 2 of 5 in cluster G

**LUST U003319719
UST N/A
INVENTORY
BEA**

**Relative:
Higher
Actual:
779 ft.**

LUST:

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00002267
Source: STATE OF MICHIGAN
Owner Name: CatalystDevelopment Co LLC
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Shell - Hunter
Latitude: 42.53925
Longitude: -83.20683
Date of Collection: 01/11/2001

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0274-08
Release Date: 12/10/2008
Substance Released: Used Oil
Release Status: Open
Release Closed Date: Not reported

Leak Number: C-0480-89
Release Date: 12/08/1989
Substance Released: Not reported
Release Status: Closed
Release Closed Date: 05/23/2000

Leak Number: C-1061-89
Release Date: 12/08/1989
Substance Released: Gasoline
Release Status: Closed
Release Closed Date: 05/23/2000

Leak Number: C-1336-98
Release Date: 12/30/1998
Substance Released: Unknown,Unknown
Release Status: Closed
Release Closed Date: 08/04/1999

UST:

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0900
Facility Type: CLOSED
Facility ID: 00002267
Owner Name: CATALYST DEVELOPMENT CO LLC
Owner Address: 100 W MICHIGAN AVE STE 300
Owner City: KALAMAZOO
Owner State: MI
Owner Zip: 49007
Owner Contact: Not reported
Owner Phone: 2694926811
Contact: Ms Patti Ownes
Contact Phone: (269) 492-6811
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	9
Capacity:	1000
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	12/01/1989
Remove Date:	12/07/1999
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.53925
Longitude:	-83.20683
Name:	SHELL - HUNTER
Address:	34977 WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48009-0900
Facility Type:	CLOSED
Facility ID:	00002267
Owner Name:	CATALYST DEVELOPMENT CO LLC
Owner Address:	100 W MICHIGAN AVE STE 300
Owner City:	KALAMAZOO
Owner State:	MI
Owner Zip:	49007
Owner Contact:	Not reported
Owner Phone:	2694926811
Contact:	Ms Patti Ownes
Contact Phone:	(269) 492-6811
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	6
Capacity:	12000
Tank Status:	Removed from Ground
Substance:	Diesel,Gasoline
Install Date:	12/01/1999
Remove Date:	10/29/2003
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Latitude: 42.53925
Longitude: -83.20683

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0900
Facility Type: CLOSED
Facility ID: 00002267
Owner Name: CATALYST DEVELOPMENT CO LLC
Owner Address: 100 W MICHIGAN AVE STE 300
Owner City: KALAMAZOO
Owner State: MI
Owner Zip: 49007
Owner Contact: Not reported
Owner Phone: 2694926811
Contact: Ms Patti Ownes
Contact Phone: (269) 492-6811
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 5
Capacity: 15000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 12/01/1999
Remove Date: 10/29/2003
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53925
Longitude: -83.20683

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0900
Facility Type: CLOSED
Facility ID: 00002267
Owner Name: CATALYST DEVELOPMENT CO LLC
Owner Address: 100 W MICHIGAN AVE STE 300
Owner City: KALAMAZOO
Owner State: MI
Owner Zip: 49007
Owner Contact: Not reported
Owner Phone: 2694926811
Contact: Ms Patti Ownes
Contact Phone: (269) 492-6811

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	4
Capacity:	550
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	04/15/1949
Remove Date:	10/13/1989
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.53925
Longitude:	-83.20683
Name:	SHELL - HUNTER
Address:	34977 WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48009-0900
Facility Type:	CLOSED
Facility ID:	00002267
Owner Name:	CATALYST DEVELOPMENT CO LLC
Owner Address:	100 W MICHIGAN AVE STE 300
Owner City:	KALAMAZOO
Owner State:	MI
Owner Zip:	49007
Owner Contact:	Not reported
Owner Phone:	2694926811
Contact:	Ms Patti Ownes
Contact Phone:	(269) 492-6811
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	3
Capacity:	10000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	12/01/1982
Remove Date:	12/07/1999
Tank Number:	Not reported
Tank Details Compartments:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53925
Longitude: -83.20683

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0900
Facility Type: CLOSED
Facility ID: 00002267
Owner Name: CATALYST DEVELOPMENT CO LLC
Owner Address: 100 W MICHIGAN AVE STE 300
Owner City: KALAMAZOO
Owner State: MI
Owner Zip: 49007
Owner Contact: Not reported
Owner Phone: 2694926811
Contact: Ms Patti Ownes
Contact Phone: (269) 492-6811
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 10000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 12/01/1982
Remove Date: 12/07/1999
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53925
Longitude: -83.20683

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0900
Facility Type: CLOSED
Facility ID: 00002267
Owner Name: CATALYST DEVELOPMENT CO LLC
Owner Address: 100 W MICHIGAN AVE STE 300
Owner City: KALAMAZOO

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Owner State:	MI
Owner Zip:	49007
Owner Contact:	Not reported
Owner Phone:	2694926811
Contact:	Ms Patti Ownes
Contact Phone:	(269) 492-6811
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	11
Capacity:	500
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	Not reported
Remove Date:	02/09/2009
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.53925
Longitude:	-83.20683
Name:	SHELL - HUNTER
Address:	34977 WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48009-0900
Facility Type:	CLOSED
Facility ID:	00002267
Owner Name:	CATALYST DEVELOPMENT CO LLC
Owner Address:	100 W MICHIGAN AVE STE 300
Owner City:	KALAMAZOO
Owner State:	MI
Owner Zip:	49007
Owner Contact:	Not reported
Owner Phone:	2694926811
Contact:	Ms Patti Ownes
Contact Phone:	(269) 492-6811
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	10
Capacity:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Tank Status: Removed from Ground
Substance: Kerosene
Install Date: Not reported
Remove Date: 12/01/1998
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53925
Longitude: -83.20683

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0900
Facility Type: CLOSED
Facility ID: 00002267
Owner Name: CATALYST DEVELOPMENT CO LLC
Owner Address: 100 W MICHIGAN AVE STE 300
Owner City: KALAMAZOO
Owner State: MI
Owner Zip: 49007
Owner Contact: Not reported
Owner Phone: 2694926811
Contact: Ms Patti Ownes
Contact Phone: (269) 492-6811
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 8000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 09/01/1971
Remove Date: 12/07/1999
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53925
Longitude: -83.20683

INVENTORY:

Name: SHELL - HUNTER

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.53925
Longitude: -83.20683

BEA:

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 02/07/2000
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 00002267
Submittal Type: Baseline Environmental Assessment
Submittal Number: B200001071LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2004-01-31 07:29:04
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: RECORD CENTER - 895151 - BEA181
Organization: ANDREW BOJI
Contact: MS. LINA KASYOUHANAN
Contact Type: Submitter Contact

Name: SHELL - HUNTER
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 11/05/2003
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 00002267
Submittal Type: Baseline Environmental Assessment
Submittal Number: P200302187LV
Approval Status: RRD Received
Workflow Status: Submitted

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SHELL - HUNTER (Continued)

U003319719

Date Submitted: 2004-01-31 07:29:04
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: RECORD CENTER - 895168 - BEA198
Organization: Fuller Central Park Properties IV, LLC
Contact: McDowell & Associates
Contact Type: Submitter Contact

G29
NNE
1/8-1/4
0.137 mi.
725 ft.

CATALYST DEVELOPMENT CO 8 LLC
34977 WOODWARD AVE
BIRMINGHAM, MI 48104

Site 3 of 5 in cluster G

RCRA-VSQG **1001961007**
FINDS **MIR000044230**
ECHO

Relative:
Higher

Actual:
779 ft.

RCRA-VSQG:
Date Form Received by Agency: 2009-01-20 00:00:00.0
Handler Name: CATALYST DEVELOPMENT CO 8 LLC
Handler Address: 34977 WOODWARD AVE
Handler City,State,Zip: BIRMINGHAM, MI 48104
EPA ID: MIR000044230
Contact Name: MIKE BRYANT
Contact Address: 34977 WOODWARD AVE
Contact City,State,Zip: BIRMINGHAM, MI 48104
Contact Telephone: 269-217-5157
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 34977 WOODWARD AVE
Mailing City,State,Zip: BIRMINGHAM, MI 48104
Owner Name: CATALYST DEVELOPMENT CO & LLC
Owner Type: Private
Operator Name: CATALYST DEVELOPMENT CO & LLC
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No
Small Quantity On-Site Burner Exemption: No
Smelting Melting and Refining Furnace Exemption: No
Underground Injection Control: No
Off-Site Waste Receipt: No
Universal Waste Indicator: No
Universal Waste Destination Facility: No
Federal Universal Waste: No
Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported
Active Site Converter Treatment storage and Disposal Facility: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CATALYST DEVELOPMENT CO 8 LLC (Continued)

1001961007

Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	CATALYST DEVELOPMENT CO & LLC
Legal Status:	Private
Date Became Current:	2008-07-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CATALYST DEVELOPMENT CO 8 LLC (Continued)

1001961007

Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	CATALYST DEVELOPMENT CO & LLC
Legal Status:	Private
Date Became Current:	2008-07-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	CATALYST DEVELOPMENT CO & LLC
Legal Status:	Private
Date Became Current:	2008-07-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	CATALYST DEVELOPMENT CO & LLC
Legal Status:	Private
Date Became Current:	2008-07-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	CATALYST DEVELOPMENT CO & LLC
Legal Status:	Private
Date Became Current:	2008-07-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	CATALYST DEVELOPMENT CO & LLC
Legal Status:	Private
Date Became Current:	2008-07-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CATALYST DEVELOPMENT CO 8 LLC (Continued)

1001961007

Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2002-06-10 00:00:00.0
Handler Name: CATALYST DEVELOPMENT CO 8 LLC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2000-01-20 00:00:00.0
Handler Name: CATALYST DEVELOPMENT CO 8 LLC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2009-01-20 00:00:00.0
Handler Name: CATALYST DEVELOPMENT CO 8 LLC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 44719
NAICS Description: OTHER GASOLINE STATIONS

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CATALYST DEVELOPMENT CO 8 LLC (Continued)

1001961007

FINDS:

Registry ID: 110006413087

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1001961007
Registry ID: 110006413087
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110006413087>
Name: CATALYST DEVELOPMENT CO 8 LLC
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009

G30
NNE
1/8-1/4
0.137 mi.
725 ft.

BIRMINGHAM SERVICES INC. (SHELL - HUNTER)
34977 WOODWARD AVENUE
BIRMINGHAM, MI 44306
Site 4 of 5 in cluster G

AUL S104912434
BEA N/A
WDS

Relative:
Higher

Actual:
779 ft.

AUL:

Name: BIRMINGHAM SERVICES INC. (SHELL - HUNTER)
Address: 34977 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 44306
Status: Pending
Site Name: Not reported
Property: On-site location
Land Use Restriction Type: RC
Program Type: Part 213
Program Support Assigned User: Not reported
Program Support Assigned Date: Not reported
Legal Description Of Property: Not reported
Based On The Deq Ref #: 11121309003
MDEQ Reference Number: RC-RRD-213-09-003
Property Or Description Restricted Area: Not reported
Lead Division: RRD
File Name Of Hyperlinked Legal Doc: Not reported
Mapped Polygons Area In Acres: 0.29999999999999999
Mapped Polygons Area In Square Miles: Not reported
Date Data Entry Started: Not reported
Date Data Entry Finished: Not reported
Individual Or Staff Assoc With The Mapping: Not reported
Program Used To Map Restricted Features: Not reported
Date Legal Paperwork Stamped/Filed/Register Of Deeds: 01/12/2009
Commercial I Land Use Restriction: 0
Commercial Ii Land Use Restriction: 0
Commercial Iii Land Use Restriction: 0
Commercial Iv Land Use Restriction: 0

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM SERVICES INC. (SHELL - HUNTER) (Continued)

S104912434

Industrial Land Use Restriction:	0
Residential Land Use Restriction:	1
Recreational Land Use Restriction:	0
Multiple Land-Use Restrictions:	0
Site Specific Restrictions:	0
Groundwater Consumption Restrictions:	0
Groundwater Contact Restrictions:	0
Special Well Construction Requirements:	0
Special Building Restrictions:	0
Excavation And Soil Movement Restrictions:	0
Soil Movement Requirements:	0
There Is A Restriction On All Construction:	0
Monitoring Well Protected, No Tampering Or Removal:	0
There Is An Exposure Barrier In Place:	0
There Is A Health And Safety Plan:	0
There Is A Permanent Marker On The Site:	0
Comment:	Gas Station, Birmingham Services Inc
Map Comments:	Not reported

BEA:

Name:	CATALYST DEVELOPMENT CO. 8, LLC
Address:	34977 WOODWARD AVENUE
City,State,Zip:	BIRMINGHAM, MI
Secondary Address:	Not reported
BEA Number:	4000
District:	Southeast MI
Date Received:	09/12/2008
Submitter Name:	Catalyst Development Co. 8, LLC
Petition Determination:	No Request
Petition Disclosure:	0
Category:	S
Determination 20107A:	No Request
Reviewer:	tiernang
Division Assigned:	STD
Location ID:	Not reported
Submittal Type:	Not reported
Submittal Number:	Not reported
Approval Status:	Not reported
Workflow Status:	Not reported
Date Submitted:	Not reported
Date Completed:	Not reported
Township:	Not reported
Work Unit:	Not reported
Comments:	Not reported
Organization:	Not reported
Contact:	Not reported
Contact Type:	Not reported

Name:	BOJI/WOODWARD PROPERTY
Address:	34977 WOODWARD AVENUE
City,State,Zip:	BIRMINGHAM, MI
Secondary Address:	(FORMERLY 120 S. HUNTER STREET)
BEA Number:	1071
District:	Southeast MI
Date Received:	02/07/2000
Submitter Name:	ANDREW BOJI
Petition Determination:	No Request

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM SERVICES INC. (SHELL - HUNTER) (Continued)

S104912434

Petition Disclosure: 0
Category: S
Determination 20107A: No Request
Reviewer: temppm
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Name: FORMER GASOLINE STATION
Address: 34977 WOODWARD
City,State,Zip: BIRMINGHAM, MI
Secondary Address: (Formerly 120 Hunter)
BEA Number: 2187
District: Southeast MI
Date Received: 11/05/2003
Submitter Name: Fuller Central Park Properties IV, LLC
Petition Determination: Affirmed
Petition Disclosure: 1
Category: N
Determination 20107A: Affirmed
Reviewer: mitchelf
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

WDS:

Name: CATALYST DEVELOPMENT CO 8 LLC
Address: 34977 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48104
Site Id: MIR000044230
WMD Id: 413573
Site Specific Name: CATALYST DEVELOPMENT CO 8 LLC
Mailing Address: 34977 WOODWARD AVE
Mailing City/State/Zip: 48104
Mailing County: OAKLAND

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

	Site	Database(s)	EDR ID Number EPA ID Number
31 North 1/8-1/4 0.139 mi. 735 ft.	BURTON KATZMAN 336 E MAPLE RD BIRMINGHAM, MI 48009	RCRA NonGen / NLR	1007990194 MIK851343467
Relative: Higher	RCRA NonGen / NLR:		
Actual: 780 ft.	Date Form Received by Agency:	2005-11-01 00:00:00.0	
	Handler Name:	BURTON KATZMAN	
	Handler Address:	336 E MAPLE RD	
	Handler City,State,Zip:	BIRMINGHAM, MI 48009	
	EPA ID:	MIK851343467	
	Contact Name:	COLLEEN LOREDO	
	Contact Address:	336 E MAPLE RD	
	Contact City,State,Zip:	BIRMINGHAM, MI 48009	
	Contact Telephone:	313-382-2500	
	Contact Fax:	Not reported	
	Contact Email:	Not reported	
	Contact Title:	Not reported	
	EPA Region:	05	
	Land Type:	Other	
	Federal Waste Generator Description:	Not a generator, verified	
	Non-Notifier:	Not reported	
	Biennial Report Cycle:	Not reported	
	Accessibility:	Not reported	
	Active Site Indicator:	Not reported	
	State District Owner:	Not reported	
	State District:	Not reported	
	Mailing Address:	30100 TELEGRAPH RD	
	Mailing City,State,Zip:	BINGHAM FARMS, MI 48025	
	Owner Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE	
	Owner Type:	Private	
	Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE	
	Operator Type:	Private	
	Short-Term Generator Activity:	No	
	Importer Activity:	No	
	Mixed Waste Generator:	No	
	Transporter Activity:	No	
	Transfer Facility Activity:	No	
	Recycler Activity with Storage:	No	
	Small Quantity On-Site Burner Exemption:	No	
	Smelting Melting and Refining Furnace Exemption:	No	
	Underground Injection Control:	No	
	Off-Site Waste Receipt:	No	
	Universal Waste Indicator:	No	
	Universal Waste Destination Facility:	No	
	Federal Universal Waste:	No	
	Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site Converter Treatment storage and Disposal Facility:	Not reported	
	Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site State-Reg Handler:	---	
	Federal Facility Indicator:	Not reported	
	Hazardous Secondary Material Indicator:	NN	
	Sub-Part K Indicator:	Not reported	
	Commercial TSD Indicator:	No	
	Treatment Storage and Disposal Type:	Not reported	
	2018 GPRA Permit Baseline:	Not on the Baseline	
	2018 GPRA Renewals Baseline:	Not on the Baseline	
	Permit Renewals Workload Universe:	Not reported	

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BURTON KATZMAN (Continued)

1007990194

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2005-11-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2005-11-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BURTON KATZMAN (Continued)

1007990194

Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2005-11-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2005-11-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2005-11-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2005-11-02 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	1980-01-01 00:00:00.0
Handler Name:	BURTON KATZMAN
Federal Waste Generator Description:	Not a generator, verified

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BURTON KATZMAN (Continued)

1007990194

State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2005-02-22 00:00:00.0
Handler Name: BURTON KATZMAN
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2005-11-01 00:00:00.0
Handler Name: BURTON KATZMAN
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 45211
NAICS Description: DEPARTMENT STORES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

G32
NNE
1/8-1/4
0.142 mi.
751 ft.
CATALYST DEVELOPMENT CO. 8, LLC
34977 WOODWARD AVENUE
OAKLAND (County), MI
Site 5 of 5 in cluster G

INVENTORY **S114029235**
N/A

Relative: INVENTORY:
Higher Name: CATALYST DEVELOPMENT CO. 8, LLC
Address: 34977 WOODWARD AVENUE
Actual: City,State,Zip: MI
779 ft. Bea Number: 200804000LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: 42.54663
Longitude: -83.21171

H33
ENE
1/8-1/4
0.147 mi.
774 ft.
MALLY, C . LANE PROPERTY
575 SOUTH HUNTER BLVD.
BIRMINGHAM, MI
Site 3 of 4 in cluster H

BEA **S104910029**
N/A

Relative: BEA:
Lower Name: MALLY, C . LANE PROPERTY
Address: 575 SOUTH HUNTER BLVD.
Actual: City,State,Zip: BIRMINGHAM, MI
766 ft. Secondary Address: Not reported
BEA Number: 107
District: Southeast MI
Date Received: 05/09/1996
Submitter Name: C. LANE MALLY
Petition Determination: Affirmed
Petition Disclosure: 1
Category: N
Determination 20107A: No Request
Reviewer: mitchelf
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

H34
East
1/8-1/4
0.147 mi.
777 ft.
CARMAN TILLARD
910 N HUNTER BLVD
BIRMINGHAM, MI 48009
Site 4 of 4 in cluster H

LUST
UST
U004275219
N/A

Relative:
Lower

LUST:

Actual:
765 ft.

Name: CARMAN TILLARD
Address: 910 N HUNTER BLVD
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 50001216
Source: STATE OF MICHIGAN
Owner Name: NrtOwner
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Carman Tillard
Latitude: 42.55449
Longitude: -83.21908
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0309-90
Release Date: 02/20/1990
Substance Released: Not reported
Release Status: Closed
Release Closed Date: 04/04/1996

UST:

Name: CARMAN TILLARD
Address: 910 N HUNTER BLVD
City,State,Zip: BIRMINGHAM 48009
Facility Type: CLOSED
Facility ID: 50001216
Owner Name: NRT OWNER
Owner Address: UNKNOWN
Owner City: UNKNOWN
Owner State: MI
Owner Zip: 99999
Owner Contact: Not reported
Owner Phone: Not reported
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CARMAN TILLARD (Continued)

U004275219

Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 1
Capacity: Not reported
Tank Status: Non-Registered Tank
Substance: Not reported
Install Date: Not reported
Remove Date: Not reported
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

UST 2:

Name: CARMAN TILLARD
Address: 910 N HUNTER BLVD
City,State,Zip: BIRMINGHAM, MI 48009
Region: Not reported
Owner Name: OWNER ADDRESS UNKNOWN
Owner Address: Not Recorded
Owner City: Not reported
Owner State: Not reported
Owner Zip: 99999
Owner Phone: Not reported
Record ID: UTK-041616-15
Facility Status: Not reported
Tank ID: Not reported
Tank Status: Non-Registered Tank
Tank Capacity: Not reported
Tank Content: Not reported
Install Date: 01/01/1900
Removal Date: 01/01/1900
Tank Release Detect: Not reported
Pipe Release Detect: Not reported
Tank Piping Material: Not reported
Tank Constr. Material: Not reported

I35
East
1/8-1/4
0.148 mi.
783 ft.

FRED LAVERY CO
34602 WOODWARD AVE
BIRMINGHAM, MI 48009

Site 1 of 2 in cluster I

Relative:
Lower
Actual:
763 ft.

UST:
Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924

UST U003323187
N/A

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Facility Type: Removed from Ground
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 9
Capacity: 50
Tank Status: Removed from Ground
Substance: Other(HYD. OIL)
Install Date: 1982-02-26 00:00:00
Remove Date: 1990-07-19 00:00:00
Tank Number: UTK-098813-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924
Facility Type: Currently In Use
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 8
Capacity: 50
Tank Status: Currently In Use
Substance: Other(HYD. OIL)
Install Date: 1984-02-27 00:00:00
Remove Date: Not reported
Tank Number: UTK-098808-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924
Facility Type: Removed from Ground
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 7
Capacity: 50
Tank Status: Removed from Ground
Substance: Other(HYD. OIL)
Install Date: 1983-02-27 00:00:00
Remove Date: 1990-07-19 00:00:00
Tank Number: UTK-098802-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Latitude:	Not reported
Longitude:	Not reported
Name:	FRED LAVERY CO
Address:	34602 WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48009-0924
Facility Type:	Currently In Use
Facility ID:	00014864
Owner Name:	FRED LAVERY CO
Owner Address:	499 S HUNTER BLVD
Owner City:	BIRMINGHAM
Owner State:	MI
Owner Zip:	48009-6706
Owner Contact:	Not reported
Owner Phone:	3136455930
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	6
Capacity:	50
Tank Status:	Currently In Use
Substance:	Other(HYD. OIL)
Install Date:	1984-02-27 00:00:00
Remove Date:	Not reported
Tank Number:	UTK-098797-15
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Tank Construction:	Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	FRED LAVERY CO
Address:	34602 WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48009-0924
Facility Type:	Currently In Use
Facility ID:	00014864
Owner Name:	FRED LAVERY CO
Owner Address:	499 S HUNTER BLVD
Owner City:	BIRMINGHAM
Owner State:	MI
Owner Zip:	48009-6706
Owner Contact:	Not reported
Owner Phone:	3136455930
Contact:	Not reported
Contact Phone:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 5
Capacity: 50
Tank Status: Currently In Use
Substance: Other(HYD. OIL)
Install Date: 1981-02-26 00:00:00
Remove Date: Not reported
Tank Number: UTK-002436-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924
Facility Type: Currently In Use
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 4
Capacity: 50
Tank Status: Currently In Use
Substance: Other(HYD. OIL)
Install Date: 1983-02-27 00:00:00
Remove Date: Not reported
Tank Number: UTK-019253-15
Tank Details Compartments: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924
Facility Type: Currently In Use
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 3
Capacity: 50
Tank Status: Currently In Use
Substance: Other(HYD. OIL)
Install Date: 1976-02-27 00:00:00
Remove Date: Not reported
Tank Number: UTK-099233-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924
Facility Type: Removed from Ground
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 2
Capacity: 50
Tank Status: Removed from Ground
Substance: Other(HYD. OIL)
Install Date: 1976-02-27 00:00:00
Remove Date: 1990-07-19 00:00:00
Tank Number: UTK-011823-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-0924
Facility Type: Currently In Use
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 10
Capacity: 50

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

U003323187

Tank Status: Currently In Use
Substance: Other(HYD. OIL)
Install Date: 1976-02-27 00:00:00
Remove Date: Not reported
Tank Number: UTK-006571-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel,Fiberglass Reinforced Plastic
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: FRED LAVERY CO
Address: 34602 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0924
Facility Type: CLOSED
Facility ID: 00014864
Owner Name: FRED LAVERY CO
Owner Address: 499 S HUNTER BLVD
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009-6706
Owner Contact: Not reported
Owner Phone: 3136455930
Contact: BILL STANLEY
Contact Phone: (313) 645-5930
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 550
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: 02/27/1971
Remove Date: 07/19/1990
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54307
Longitude: -83.20982

[Click this hyperlink](#) while viewing on your computer to access additional MI_UST: detail in the EDR Site Report.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

	Site	Database(s)	EDR ID Number EPA ID Number
I36 East 1/8-1/4 0.148 mi. 783 ft.	FRED LAVERY CO 34602 WOODWARD AVE BIRMINGHAM, MI 48009 Site 2 of 2 in cluster I	RCRA-VSQG FINDS ECHO	1000528909 MID985613389
Relative: Lower	RCRA-VSQG:		
Actual: 763 ft.	Date Form Received by Agency:	2010-03-23 00:00:00.0	
	Handler Name:	FRED LAVERY CO	
	Handler Address:	34602 WOODWARD AVE	
	Handler City,State,Zip:	BIRMINGHAM, MI 48009	
	EPA ID:	MID985613389	
	Contact Name:	ALI HAJI-SHETKH	
	Contact Address:	34602 WOODWARD AVE	
	Contact City,State,Zip:	BIRMINGHAM, MI 48009	
	Contact Telephone:	248-645-5930	
	Contact Fax:	Not reported	
	Contact Email:	Not reported	
	Contact Title:	Not reported	
	EPA Region:	05	
	Land Type:	Private	
	Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator	
	Non-Notifier:	Not reported	
	Biennial Report Cycle:	Not reported	
	Accessibility:	Not reported	
	Active Site Indicator:	Handler Activities	
	State District Owner:	Not reported	
	State District:	Not reported	
	Mailing Address:	PO BOX 3017	
	Mailing City,State,Zip:	BIRMINGHAM, MI 48012	
	Owner Name:	LAVERY FRED	
	Owner Type:	Private	
	Operator Name:	LAVERY FRED	
	Operator Type:	Private	
	Short-Term Generator Activity:	No	
	Importer Activity:	No	
	Mixed Waste Generator:	No	
	Transporter Activity:	No	
	Transfer Facility Activity:	No	
	Recycler Activity with Storage:	No	
	Small Quantity On-Site Burner Exemption:	No	
	Smelting Melting and Refining Furnace Exemption:	No	
	Underground Injection Control:	No	
	Off-Site Waste Receipt:	No	
	Universal Waste Indicator:	No	
	Universal Waste Destination Facility:	No	
	Federal Universal Waste:	No	
	Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site Converter Treatment storage and Disposal Facility:	Not reported	
	Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site State-Reg Handler:	---	
	Federal Facility Indicator:	Not reported	
	Hazardous Secondary Material Indicator:	NN	
	Sub-Part K Indicator:	Not reported	
	Commercial TSD Indicator:	No	
	Treatment Storage and Disposal Type:	Not reported	
	2018 GPRA Permit Baseline:	Not on the Baseline	
	2018 GPRA Renewals Baseline:	Not on the Baseline	
	Permit Renewals Workload Universe:	Not reported	

Map ID
Direction
Distance
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MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported

Map ID
Direction
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Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	LAVERY FRED
Legal Status:	Private
Date Became Current:	1991-05-17 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Owner/Operator Name: LAVERY FRED
Legal Status: Private
Date Became Current: 1991-05-17 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: LAVERY FRED
Legal Status: Private
Date Became Current: 1991-05-17 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: LAVERY FRED
Legal Status: Private
Date Became Current: 1991-05-17 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 1998-10-14 00:00:00.0
Handler Name: FRED LAVERY CO
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1991-05-17 00:00:00.0
Handler Name: FRED LAVERY CO
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2002-08-13 00:00:00.0
Handler Name: FRED LAVERY CO
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2008-07-28 00:00:00.0
Handler Name: FRED LAVERY CO
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2009-03-16 00:00:00.0
Handler Name: FRED LAVERY CO
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2009-10-19 00:00:00.0
Handler Name: FRED LAVERY CO
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Receive Date:	2010-03-23 00:00:00.0
Handler Name:	FRED LAVERY CO
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	44112
NAICS Description:	USED CAR DEALERS

Facility Has Received Notices of Violation:

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	LDR - General
Date Violation was Determined:	2009-10-19 00:00:00.0
Actual Return to Compliance Date:	2009-11-09 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	001
Date of Enforcement Action:	2009-10-20 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	State Statute or Regulation
Date Violation was Determined:	2009-10-19 00:00:00.0
Actual Return to Compliance Date:	2009-11-09 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	001
Date of Enforcement Action:	2009-10-20 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Evaluation Action Summary:	
Evaluation Date:	2009-10-19 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-11-09 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported
Evaluation Date:	2009-10-19 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FRED LAVERY CO (Continued)

1000528909

Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2009-11-09 00:00:00.0
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

FINDS:

Registry ID: 110003657757

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000528909
Registry ID:	110003657757
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110003657757
Name:	FRED LAVERY CO
Address:	34602 WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48009

**J37
NW
1/8-1/4
0.150 mi.
793 ft.**

**165 - 217 PIERCE STREET
165 - 217 PIERCE STREET
OAKLAND (County), MI 48009**

**INVENTORY S120851764
BEA N/A**

Site 1 of 3 in cluster J

**Relative:
Higher
Actual:
781 ft.**

INVENTORY:

Name:	165 - 217 PIERCE STREET
Address:	165 - 217 PIERCE STREET
City,State,Zip:	MI 48009
Bea Number:	201707682LV
Township:	Birmingham
District:	Southeast MI
Data Source:	BEA
Latitude:	Not reported
Longitude:	Not reported

BEA:

Name:	165 - 217 PIERCE STREET
Address:	165 - 217 PIERCE STREET
City,State,Zip:	MI 48009
Secondary Address:	Not reported
BEA Number:	Not reported
District:	Not reported
Date Received:	05/24/2017

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

165 - 217 PIERCE STREET (Continued)

S120851764

Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63500679
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201707682LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2017-06-07 16:20:30
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: BEA Report submitted on CD.
Organization: Pierce Street Investments, LLC
Contact: PM Environmental, Inc.
Contact Type: Submitter Contact

**F38
NNW
1/8-1/4
0.152 mi.
804 ft.**

**FULLER CENTRAL PARK PROPERTIES LLC
111 S OLD WOODWARD
BIRMINGHAM, MI 48009**

**RCRA-VSQG 1016142307
FINDS MIK478599987
ECHO**

Site 2 of 2 in cluster F

**Relative:
Higher
Actual:
781 ft.**

RCRA-VSQG:
Date Form Received by Agency: 2013-03-12 00:00:00.0
Handler Name: FULLER CENTRAL PARK PROPERTIES LLC
Handler Address: 111 S OLD WOODWARD
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIK478599987
Contact Name: STEVEN G QUINTAL
Contact Address: Not reported
Contact City,State,Zip: Not reported
Contact Telephone: 248-642-0024
Contact Fax: 248-642-0136
Contact Email: STEVE@FULLERCENTRALPARK.COM
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 112 PEABODY ST
Mailing City,State,Zip: BIRMINGHAM, MI 48009
Owner Name: FULLER CENTRAL PARK PROPERTIES LLC
Owner Type: Private
Operator Name: FULLER CENTRAL PARK PROPERTIES LLC
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FULLER CENTRAL PARK PROPERTIES LLC (Continued)

1016142307

Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2013-03-13 09:15:57.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FULLER CENTRAL PARK PROPERTIES LLC (Continued)

1016142307

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	FULLER CENTRAL PARK PROPERTIES LLC
Legal Status:	Private
Date Became Current:	1976-06-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	FULLER CENTRAL PARK PROPERTIES LLC
Legal Status:	Private
Date Became Current:	1976-06-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2013-03-12 00:00:00.0
Handler Name:	FULLER CENTRAL PARK PROPERTIES LLC
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	531312
NAICS Description:	NONRESIDENTIAL PROPERTY MANAGERS

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

FINDS:

Registry ID:	110055448608
--------------	--------------

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FULLER CENTRAL PARK PROPERTIES LLC (Continued)

1016142307

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1016142307
Registry ID: 110055448608
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110055448608>
Name: FULLER CENTRAL PARK PROPERTIES LLC
Address: 111 S OLD WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009

39
South
1/8-1/4
0.158 mi.
835 ft.

BARNUM HEALTH CENTER
746 PURDY ST
BIRMINGHAM, MI 48009

UST U003833692
N/A

Relative:
Lower

UST:

Actual:
764 ft.

Name: BARNUM HEALTH CENTER
Address: 746 PURDY ST
City,State,Zip: BIRMINGHAM 48009-1768
Facility Type: CLOSED
Facility ID: 00017691
Owner Name: BEAUMONT INFORMATION SERVICE CENTER
Owner Address: 1350 STEPHENSON HWY
Owner City: TROY
Owner State: MI
Owner Zip: 48083
Owner Contact: Not reported
Owner Phone: 2485516351
Contact: JIM ANDERSON
Contact Phone: (734) 285-3737
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 10000
Tank Status: Temporarily Out of Use
Substance: Diesel,Other(HEAT-CONSUMPTIVE USE)
Install Date: 05/01/1951
Remove Date: Not reported
Tank Number: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BARNUM HEALTH CENTER (Continued)

U003833692

Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54198
Longitude: -83.21291

K40
SE
1/8-1/4
0.162 mi.
857 ft.
VILLAGE JEEP EAGLE
666 S WOODWARD
BIRMINGHAM, MI 48011
Site 1 of 3 in cluster K

UST **U003320620**
N/A

Relative:
Lower

Actual:
761 ft.

UST:
Name: VILLAGE JEEP EAGLE
Address: 666 S WOODWARD
City,State,Zip: BIRMINGHAM, MI 48011
Facility Type: Currently In Use
Facility ID: 00005612
Owner Name: CHRYSLER REALTY CORP
Owner Address: 1450 W LONG LAKE RD STE 280
Owner City: TROY
Owner State: MI
Owner Zip: 48098
Owner Contact: Not reported
Owner Phone: 3137370299
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 6
Capacity: 50
Tank Status: Currently In Use
Substance: Other(HYD. FLUID)
Install Date: 1966-05-07 00:00:00
Remove Date: Not reported
Tank Number: UTK-045881-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Unknown
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: VILLAGE JEEP EAGLE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE JEEP EAGLE (Continued)

U003320620

Address: 666 S WOODWARD
City,State,Zip: BIRMINGHAM, MI 48011
Facility Type: Currently In Use
Facility ID: 00005612
Owner Name: CHRYSLER REALTY CORP
Owner Address: 1450 W LONG LAKE RD STE 280
Owner City: TROY
Owner State: MI
Owner Zip: 48098
Owner Contact: Not reported
Owner Phone: 3137370299
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported
Source: Not reported
Point Line Area: Not reported
Desc Category: Not reported
Method of Collection: Not reported
District: Not reported
Tank ID: 5
Capacity: 50
Tank Status: Currently In Use
Substance: Other(HYD FLUID)
Install Date: 1966-05-07 00:00:00
Remove Date: Not reported
Tank Number: UTK-039618-15
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Unknown
Piping Type: Not reported
Tank Construction: Asphalt Coated or Bare Steel
Impressed Device: Not reported
Latitude: Not reported
Longitude: Not reported

Name: VILLAGE JEEP EAGLE
Address: 666 S WOODWARD
City,State,Zip: BIRMINGHAM, MI 48011
Facility Type: Currently In Use
Facility ID: 00005612
Owner Name: CHRYSLER REALTY CORP
Owner Address: 1450 W LONG LAKE RD STE 280
Owner City: TROY
Owner State: MI
Owner Zip: 48098
Owner Contact: Not reported
Owner Phone: 3137370299
Contact: Not reported
Contact Phone: Not reported
Date of Collection: Not reported
Accuracy: Not reported
Horizontal Datum: Not reported
Accuracy Value Unit: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE JEEP EAGLE (Continued)

U003320620

Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	4
Capacity:	50
Tank Status:	Currently In Use
Substance:	Other(HYD. FLUID)
Install Date:	1966-05-07 00:00:00
Remove Date:	Not reported
Tank Number:	UTK-048415-15
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Tank Construction:	Asphalt Coated or Bare Steel
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	VILLAGE JEEP EAGLE
Address:	666 S WOODWARD
City,State,Zip:	BIRMINGHAM, MI 48011
Facility Type:	Currently In Use
Facility ID:	00005612
Owner Name:	CHRYSLER REALTY CORP
Owner Address:	1450 W LONG LAKE RD STE 280
Owner City:	TROY
Owner State:	MI
Owner Zip:	48098
Owner Contact:	Not reported
Owner Phone:	3137370299
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	3
Capacity:	50
Tank Status:	Currently In Use
Substance:	Other(HYD. FLUID)
Install Date:	1966-05-07 00:00:00
Remove Date:	Not reported
Tank Number:	UTK-092432-15
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE JEEP EAGLE (Continued)

U003320620

Tank Construction:	Asphalt Coated or Bare Steel
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	VILLAGE JEEP EAGLE
Address:	666 S WOODWARD
City,State,Zip:	BIRMINGHAM, MI 48011
Facility Type:	Currently In Use
Facility ID:	00005612
Owner Name:	CHRYSLER REALTY CORP
Owner Address:	1450 W LONG LAKE RD STE 280
Owner City:	TROY
Owner State:	MI
Owner Zip:	48098
Owner Contact:	Not reported
Owner Phone:	3137370299
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	2
Capacity:	50
Tank Status:	Currently In Use
Substance:	Other(HYD. FLUID)
Install Date:	1966-05-07 00:00:00
Remove Date:	Not reported
Tank Number:	UTK-042842-15
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Tank Construction:	Asphalt Coated or Bare Steel
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Name:	VILLAGE JEEP EAGLE
Address:	666 S WOODWARD
City,State,Zip:	BIRMINGHAM 48011
Facility Type:	CLOSED
Facility ID:	00005612
Owner Name:	CHRYSLER REALTY CORP
Owner Address:	1450 W LONG LAKE RD STE 280
Owner City:	TROY
Owner State:	MI
Owner Zip:	48098
Owner Contact:	Not reported
Owner Phone:	3137370299

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE JEEP EAGLE (Continued)

U003320620

Contact: F.G. NEUMAN
Contact Phone: (313) 229-8639
Date of Collection: Not reported
Accuracy: 15
Horizontal Datum: NAD83
Accuracy Value Unit: METERS
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Not reported
Method of Collection: Interpolation-Map
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 250
Tank Status: Removed from Ground
Substance: Not reported
Install Date: 05/07/1966
Remove Date: 08/30/1990
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54253
Longitude: -83.20964

**L41
NE
1/8-1/4
0.162 mi.
858 ft.**

**HOLIDAY INN
34952 WOODWARD AVE
BIRMINGHAM, MI 48009**

**RCRA-VSQQ 1007098585
MIK541799672**

Site 1 of 5 in cluster L

**Relative:
Higher**

RCRA-VSQQ:

**Actual:
774 ft.**

Date Form Received by Agency: 2006-07-31 00:00:00.0
Handler Name: HOLIDAY INN
Handler Address: 34952 WOODWARD AVE
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIK541799672
Contact Name: JOHN SCHIMETZ
Contact Address: 34952 WOODWARD AVE
Contact City,State,Zip: BIRMINGHAM, MI 48009
Contact Telephone: 734-855-0105
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 11853 BELDEN CT
Mailing City,State,Zip: LIVONIA, MI 48150

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HOLIDAY INN (Continued)

1007098585

Owner Name:	HOLIDAY INNS
Owner Type:	Private
Operator Name:	HOLIDAY INNS
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HOLIDAY INN (Continued)

1007098585

Manifest Broker: Not reported
Sub-Part P Indicator: No

Hazardous Waste Summary:

Waste Code: D001
Waste Description: IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLIDAY INNS
Legal Status: Private
Date Became Current: 2001-09-18 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLIDAY INNS
Legal Status: Private
Date Became Current: 2001-09-18 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HOLIDAY INNS
Legal Status: Private
Date Became Current: 2001-09-18 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HOLIDAY INNS
Legal Status: Private
Date Became Current: 2001-09-18 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HOLIDAY INN (Continued)

1007098585

Historic Generators:

Receive Date:	2006-07-31 00:00:00.0
Handler Name:	HOLIDAY INN
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2001-09-18 00:00:00.0
Handler Name:	HOLIDAY INN
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	72111
NAICS Description:	HOTELS (EXCEPT CASINO HOTELS) AND MOTELS

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

M42
ESE
1/8-1/4
0.165 mi.
870 ft.

GOLLING MOTORS, INC.
34500 WOODWARD AVENUE
OAKLAND (County), MI 48009
Site 1 of 2 in cluster M

INVENTORY S114029283
N/A

Relative:
Lower
Actual:
762 ft.

INVENTORY:

Name:	GOLLING MOTORS, INC.
Address:	34500 WOODWARD AVENUE
City,State,Zip:	MI 48009
Bea Number:	201104941LV
Township:	Birmingham
District:	Southeast MI
Data Source:	BEA
Latitude:	42.54345
Longitude:	-83.20896

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

M43
ESE
1/8-1/4
0.165 mi.
870 ft.
GOLLING MOTORS, INC.
34500 WOODWARD
BIRMINGHAM, MI 48009
Site 2 of 2 in cluster M

INVENTORY
BEA
S111333595
N/A

Relative:
Lower

INVENTORY:

Actual:
762 ft.

Name: GOLLING MOTORS, INC.
Address: 34500 WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.54345
Longitude: -83.20896

BEA:

Name: GOLLING MOTORS, INC.
Address: 34500 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: 4941
District: Southeast MI
Date Received: 10/05/2011
Submitter Name: Golling Motors, Inc.
Petition Determination: No Request
Petition Disclosure: 0
Category: Not reported
Determination 20107A: No Request
Reviewer: berakr
Division Assigned: RD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Name: GOLLING MOTORS, INC.
Address: 34500 WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 10/05/2011
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOLLING MOTORS, INC. (Continued)

S111333595

Division Assigned:	Not reported
Location ID:	63005949
Submittal Type:	Baseline Environmental Assessment
Submittal Number:	B201104941LV
Approval Status:	RRD Received
Workflow Status:	Submitted
Date Submitted:	2011-10-11 13:14:21
Date Completed:	Not reported
Township:	Birmingham
Work Unit:	Warren
Comments:	Records Manager: Box 85 Sent to Lansing for Scanning: 1/7/16 Category A2 REVIEW CONCLUSION: BEA is entirely of previously identified concerns, and further follow up is needed, awaiting resources. Concentrations of ethylbenzene 23,900 ppb and xylenes - 52,900 exceed residential drinking water protection and GSI criteria.
Organization:	Golling Motors, Inc.
Contact:	Jennifer Lagerbohm
Contact Type:	Submitter Contact

**K44
SE
1/8-1/4
0.169 mi.
894 ft.**

**VILLAGE AMC/JEEP INC
666 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009**

**RCRA NonGen / NLR
FINDS
ECHO**

**1000276202
MID058819707**

Site 2 of 3 in cluster K

**Relative:
Lower
Actual:
760 ft.**

RCRA NonGen / NLR:	1998-09-17 00:00:00.0
Date Form Received by Agency:	
Handler Name:	VILLAGE AMC/JEEP INC
Handler Address:	666 S OLD WOODWARD AVE
Handler City,State,Zip:	BIRMINGHAM, MI 48009
EPA ID:	MID058819707
Contact Name:	ROBERT CANN
Contact Address:	666 S OLD WOODWARD AVE
Contact City,State,Zip:	BIRMINGHAM, MI 48009
Contact Telephone:	313-646-3900
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	05
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	666 S OLD WOODWARD AVE
Mailing City,State,Zip:	BIRMINGHAM, MI 48009
Owner Name:	VILLAGE AMC/JEEP INC
Owner Type:	Private
Operator Name:	VILLAGE AMC/JEEP INC
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE AMC/JEEP INC (Continued)

1000276202

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE AMC/JEEP INC (Continued)

1000276202

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	VILLAGE AMC/JEEP INC
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	VILLAGE AMC/JEEP INC
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	VILLAGE AMC/JEEP INC
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	VILLAGE AMC/JEEP INC
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	1998-09-17 00:00:00.0
Handler Name:	VILLAGE AMC/JEEP INC
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VILLAGE AMC/JEEP INC (Continued)

1000276202

Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported
Receive Date:	1985-09-09 00:00:00.0
Handler Name:	VILLAGE AMC/JEEP INC
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	11131
NAICS Description:	ORANGE GROVES

Facility Has Received Notices of Violations:

Violations:	No Violations Found
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Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

FINDS:

Registry ID:	110003599428
--------------	--------------

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000276202
Registry ID:	110003599428
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110003599428
Name:	VILLAGE AMC/JEEP INC
Address:	666 S OLD WOODWARD AVE
City,State,Zip:	BIRMINGHAM, MI 48009

Map ID
Direction
Distance
Elevation

MAP FINDINGS

	Site	Database(s)	EDR ID Number EPA ID Number
N45 North 1/8-1/4 0.169 mi. 894 ft.	SUNOCO SERVICE STATION 84178 35001 WOODWARD AVE BIRMINGHAM, MI 48009 Site 1 of 2 in cluster N	RCRA NonGen / NLR FINDS ECHO	1004722718 MID087750204
Relative: Higher Actual: 780 ft.	RCRA NonGen / NLR: Date Form Received by Agency: 2004-03-01 00:00:00.0 Handler Name: SUNOCO SERVICE STATION 84178 Handler Address: 35001 WOODWARD AVE Handler City,State,Zip: BIRMINGHAM, MI 48009 EPA ID: MID087750204 Contact Name: LINDA HOFFMAN Contact Address: Not reported Contact City,State,Zip: Not reported Contact Telephone: 215-977-6841 Contact Fax: Not reported Contact Email: Not reported Contact Title: Not reported EPA Region: 05 Land Type: Other Federal Waste Generator Description: Not a generator, verified Non-Notifier: Not reported Biennial Report Cycle: 2003 Accessibility: Not reported Active Site Indicator: Not reported State District Owner: Not reported State District: Not reported Mailing Address: 1801 MARKET STREET Mailing City,State,Zip: PHILADELPHIA, PA 19103 Owner Name: CURRENT OWNER-OPERATOR IS NOT REGULATED Owner Type: Other Operator Name: CURRENT OWNER-OPERATOR IS NOT REGULATED Operator Type: Other Short-Term Generator Activity: No Importer Activity: No Mixed Waste Generator: No Transporter Activity: No Transfer Facility Activity: No Recycler Activity with Storage: No Small Quantity On-Site Burner Exemption: No Smelting Melting and Refining Furnace Exemption: No Underground Injection Control: No Off-Site Waste Receipt: No Universal Waste Indicator: No Universal Waste Destination Facility: No Federal Universal Waste: No Active Site Fed-Reg Treatment Storage and Disposal Facility: Not reported Active Site Converter Treatment storage and Disposal Facility: Not reported Active Site State-Reg Treatment Storage and Disposal Facility: Not reported Active Site State-Reg Handler: --- Federal Facility Indicator: Not reported Hazardous Secondary Material Indicator: NN Sub-Part K Indicator: Not reported Commercial TSD Indicator: No Treatment Storage and Disposal Type: Not reported 2018 GPRA Permit Baseline: Not on the Baseline 2018 GPRA Renewals Baseline: Not on the Baseline Permit Renewals Workload Universe: Not reported		

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2004-11-23 00:00:00.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Biennial: List of Years

Year: 2003

[Click Here for Biennial Reporting System Data:](#)

Hazardous Waste Summary:

Waste Code: D001
Waste Description: IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	CURRENT OWNER-OPERATOR IS NOT REGULATED
Legal Status:	Other
Date Became Current:	2003-11-07 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Owner/Operator Indicator:	Owner
Owner/Operator Name:	CURRENT OWNER-OPERATOR IS NOT REGULATED
Legal Status:	Other
Date Became Current:	2003-11-07 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Legal Status:	Private
Date Became Current:	2003-11-08 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	1998-10-14 00:00:00.0
Handler Name:	SUNOCO INC
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2002-11-22 00:00:00.0
Handler Name:	SUNOCO INC
Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	1980-08-18 00:00:00.0
Handler Name:	SUNOCO INC
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date:	2003-11-07 00:00:00.0
Handler Name:	SUNOCO INC

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date: 2003-11-07 00:00:00.0

Handler Name: SUNOCO INC

Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date: 1992-01-01 00:00:00.0

Handler Name: SUNOCO SERVICE STATION

Federal Waste Generator Description:	Large Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

Receive Date: 2004-03-01 00:00:00.0

Handler Name: SUNOCO SERVICE STATION 84178

Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	4471
NAICS Description:	GASOLINE STATIONS

NAICS Code:	44711
NAICS Description:	GASOLINE STATIONS WITH CONVENIENCE STORES

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Facility Has Received Notices of Violation:

Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Used Oil - Generators
Date Violation was Determined:	2002-11-22 00:00:00.0
Actual Return to Compliance Date:	2003-03-13 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	2003-01-08 00:00:00.0
Enforcement Identifier:	001
Date of Enforcement Action:	2002-12-05 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	Universal Waste - Small Quantity Handlers
Date Violation was Determined:	2002-11-22 00:00:00.0
Actual Return to Compliance Date:	2003-03-13 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	2003-01-08 00:00:00.0
Enforcement Identifier:	001
Date of Enforcement Action:	2002-12-05 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported
Found Violation:	Yes
Agency Which Determined Violation:	State
Violation Short Description:	State Statute or Regulation
Date Violation was Determined:	2002-11-22 00:00:00.0
Actual Return to Compliance Date:	2003-03-13 00:00:00.0
Return to Compliance Qualifier:	Documented
Violation Responsible Agency:	State
Scheduled Compliance Date:	2003-01-08 00:00:00.0
Enforcement Identifier:	001
Date of Enforcement Action:	2002-12-05 00:00:00.0
Enforcement Responsible Agency:	State
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	No
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	WRITTEN INFORMAL
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

Evaluation Action Summary:

Evaluation Date:	2002-11-22 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2003-03-13 00:00:00.0
Scheduled Compliance Date:	2003-01-08 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2002-11-22 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2003-03-13 00:00:00.0
Scheduled Compliance Date:	2003-01-08 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

Evaluation Date:	2002-11-22 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	Yes
Evaluation Type Description:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	2003-03-13 00:00:00.0
Scheduled Compliance Date:	2003-01-08 00:00:00.0
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

FINDS:

Registry ID: 110003607124

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO SERVICE STATION 84178 (Continued)

1004722718

ECHO:

Envid: 1004722718
Registry ID: 110003607124
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110003607124>
Name: SUNOCO SERVICE STATION 84178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009

N46
North
1/8-1/4
0.169 mi.
894 ft.

SUNOCO #0008-4178
35001 WOODWARD AVE
BIRMINGHAM, MI 48009

Site 2 of 2 in cluster N

LUST **U003320721**
UST **N/A**
INVENTORY
BEA
WDS

Relative:
Higher

Actual:
780 ft.

LUST:

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00005935
Source: STATE OF MICHIGAN
Owner Name: SunocoInc (R&M)
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Sunoco #0008-4178
Latitude: 42.54698
Longitude: -83.21428
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0924-96
Release Date: 11/07/1996
Substance Released: Unknown
Release Status: Closed
Release Closed Date: 06/08/2010

UST:

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0933
Facility Type: CLOSED
Facility ID: 00005935
Owner Name: SUNOCO INC (R&M)
Owner Address: 1735 MARKET ST 12ND FLOOR

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO #0008-4178 (Continued)

U003320721

Owner City: PHILADELPHIA
Owner State: PA
Owner Zip: 19103
Owner Contact: Not reported
Owner Phone: 2152468513
Contact: Kathleen McCaney
Contact Phone: (215) 246-8513
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 6
Capacity: 1000
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: 04/01/1988
Remove Date: 10/14/1998
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54698
Longitude: -83.21428

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0933
Facility Type: CLOSED
Facility ID: 00005935
Owner Name: SUNOCO INC (R&M)
Owner Address: 1735 MARKET ST 12ND FLOOR
Owner City: PHILADELPHIA
Owner State: PA
Owner Zip: 19103
Owner Contact: Not reported
Owner Phone: 2152468513
Contact: Kathleen McCaney
Contact Phone: (215) 246-8513
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 5

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO #0008-4178 (Continued)

U003320721

Capacity: 8000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 05/05/1982
Remove Date: 10/01/2003
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54698
Longitude: -83.21428

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0933
Facility Type: CLOSED
Facility ID: 00005935
Owner Name: SUNOCO INC (R&M)
Owner Address: 1735 MARKET ST 12ND FLOOR
Owner City: PHILADELPHIA
Owner State: PA
Owner Zip: 19103
Owner Contact: Not reported
Owner Phone: 2152468513
Contact: Kathleen McCaney
Contact Phone: (215) 246-8513
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 4
Capacity: 8000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 05/05/1982
Remove Date: 10/01/2003
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54698
Longitude: -83.21428

Name: SUNOCO #0008-4178

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO #0008-4178 (Continued)

U003320721

Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0933
Facility Type: CLOSED
Facility ID: 00005935
Owner Name: SUNOCO INC (R&M)
Owner Address: 1735 MARKET ST 12ND FLOOR
Owner City: PHILADELPHIA
Owner State: PA
Owner Zip: 19103
Owner Contact: Not reported
Owner Phone: 2152468513
Contact: Kathleen McCaney
Contact Phone: (215) 246-8513
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 3
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 05/05/1981
Remove Date: 10/01/2003
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54698
Longitude: -83.21428

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0933
Facility Type: CLOSED
Facility ID: 00005935
Owner Name: SUNOCO INC (R&M)
Owner Address: 1735 MARKET ST 12ND FLOOR
Owner City: PHILADELPHIA
Owner State: PA
Owner Zip: 19103
Owner Contact: Not reported
Owner Phone: 2152468513
Contact: Kathleen McCaney
Contact Phone: (215) 246-8513
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO #0008-4178 (Continued)

U003320721

Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 1000
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: 05/05/1970
Remove Date: 04/01/1988
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54698
Longitude: -83.21428

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-0933
Facility Type: CLOSED
Facility ID: 00005935
Owner Name: SUNOCO INC (R&M)
Owner Address: 1735 MARKET ST 12ND FLOOR
Owner City: PHILADELPHIA
Owner State: PA
Owner Zip: 19103
Owner Contact: Not reported
Owner Phone: 2152468513
Contact: Kathleen McCaney
Contact Phone: (215) 246-8513
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 6000
Tank Status: Removed from Ground
Substance: Diesel
Install Date: 05/05/1982
Remove Date: 04/01/1988
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO #0008-4178 (Continued)

U003320721

Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54698
Longitude: -83.21428

INVENTORY:

Name: SUNOCO GASOLINE STATION (FORMER)
Address: 35001 WOODWARD AVENUE
City,State,Zip: MI 48009
Bea Number: 200402477LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

BEA:

Name: SUNOCO #0008-4178
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 07/30/2004
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 00005935
Submittal Type: Baseline Environmental Assessment
Submittal Number: B200402477LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2004-08-04 11:39:06
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: Records Manager: Box 5 RC# 895159 Sent to Lansing for Scanning on December 2, 2015
Organization: Birmingham Property, LLC
Contact: Associated Environmental Services,
Contact Type: Submitter Contact

Name: SUNOCO GASOLINE STATION (FORMER)
Address: 35001 WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: 2477
District: Southeast MI
Date Received: 07/30/2004
Submitter Name: Birmingham Property, LLC
Petition Determination: No Request
Petition Disclosure: 0

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SUNOCO #0008-4178 (Continued)

U003320721

Category: N
Determination 20107A: No Request
Reviewer: mitchelf
Division Assigned: ERD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

WDS:

Name: SUNOCO INC
Address: 35001 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MID087750204
WMD Id: 397695
Site Specific Name: HORTONS BIRMINGHAM SUNOCO NUMBER 84178
Mailing Address: 1801 MARKET STREET
Mailing City/State/Zip: 19103
Mailing County: Not reported

**J47
NW
1/8-1/4
0.177 mi.
936 ft.**

**BIRMINGHAM CO (M57110)
155 HENRIETTA ST
BIRMINGHAM, MI 48009
Site 2 of 3 in cluster J**

**UST U003322266
N/A**

**Relative:
Higher
Actual:
782 ft.**

UST:
Name: BIRMINGHAM CO (M57110)
Address: 155 HENRIETTA ST
City,State,Zip: BIRMINGHAM 48009-3367
Facility Type: ACTIVE
Facility ID: 00011669
Owner Name: AT&T MICHIGAN
Owner Address: 308 S AKARD STE 1700
Owner City: DALLAS
Owner State: TX
Owner Zip: 75202
Owner Contact: Not reported
Owner Phone: 8776482073
Contact: Chris McCaslin
Contact Phone: (214) 464-5553
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM CO (M57110) (Continued)

U003322266

Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	3
Capacity:	4000
Tank Status:	Currently In Use
Substance:	Diesel
Install Date:	05/08/1969
Remove Date:	Not reported
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54619
Longitude:	-83.21589

Name:	BIRMINGHAM CO (M57110)
Address:	155 HENRIETTA ST
City,State,Zip:	BIRMINGHAM 48009-3367
Facility Type:	ACTIVE
Facility ID:	00011669
Owner Name:	AT&T MICHIGAN
Owner Address:	308 S AKARD STE 1700
Owner City:	DALLAS
Owner State:	TX
Owner Zip:	75202
Owner Contact:	Not reported
Owner Phone:	8776482073
Contact:	Chris McCaslin
Contact Phone:	(214) 464-5553
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	2
Capacity:	4000
Tank Status:	Currently In Use
Substance:	Diesel
Install Date:	05/08/1969
Remove Date:	Not reported
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54619

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM CO (M57110) (Continued)

U003322266

Longitude: -83.21589

Name: BIRMINGHAM CO (M57110)
Address: 155 HENRIETTA ST
City,State,Zip: BIRMINGHAM 48009-3367
Facility Type: ACTIVE
Facility ID: 00011669
Owner Name: AT&T MICHIGAN
Owner Address: 308 S AKARD STE 1700
Owner City: DALLAS
Owner State: TX
Owner Zip: 75202
Owner Contact: Not reported
Owner Phone: 8776482073
Contact: Chris McCaslin
Contact Phone: (214) 464-5553
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 4000
Tank Status: Currently In Use
Substance: Diesel
Install Date: 05/08/1969
Remove Date: Not reported
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54619
Longitude: -83.21589

**J48
NW
1/8-1/4
0.177 mi.
936 ft.**

**MICHIGAN BELL TELEPHONE COMPANY
155 HENRIETTA ST
BIRMINGHAM, MI 48009**

Site 3 of 3 in cluster J

**RCRA-VSQG 1000237764
FINDS MIT270013519
ECHO**

**Relative:
Higher**

RCRA-VSQG:

**Actual:
782 ft.**

Date Form Received by Agency: 2002-12-05 00:00:00.0
Handler Name: MICHIGAN BELL TELEPHONE COMPANY
Handler Address: 155 HENRIETTA ST
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIT270013519
Contact Name: ZANKHANA SHAH
Contact Address: 155 HENRIETTA ST
Contact City,State,Zip: BIRMINGHAM, MI 48009
Contact Telephone: 847-384-5694

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MICHIGAN BELL TELEPHONE COMPANY (Continued)

1000237764

Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	05
Land Type:	Private
Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	36 S FAIRVIEW - 4TH FLOOR
Mailing City,State,Zip:	PARK RIDGE, IL 60068
Owner Name:	MICH BELL TELEPHONE
Owner Type:	Private
Operator Name:	MICH BELL TELEPHONE
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MICHIGAN BELL TELEPHONE COMPANY (Continued)

1000237764

Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MICH BELL TELEPHONE
Legal Status:	Private
Date Became Current:	1998-06-21 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	MICH BELL TELEPHONE
Legal Status:	Private
Date Became Current:	1998-06-21 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MICH BELL TELEPHONE
Legal Status:	Private
Date Became Current:	1998-06-21 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MICHIGAN BELL TELEPHONE COMPANY (Continued)

1000237764

Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: MICH BELL TELEPHONE
Legal Status: Private
Date Became Current: 1998-06-21 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 1981-06-01 00:00:00.0
Handler Name: MICHIGAN BELL TELEPHONE COMPANY
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2002-12-05 00:00:00.0
Handler Name: MICHIGAN BELL TELEPHONE COMPANY
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 51711
NAICS Description: WIRED TELECOMMUNICATIONS CARRIERS

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

FINDS:

Registry ID: 110003719183

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MICHIGAN BELL TELEPHONE COMPANY (Continued)

1000237764

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000237764
Registry ID: 110003719183
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110003719183>
Name: MICHIGAN BELL TELEPHONE COMPANY
Address: 155 HENRIETTA ST
City,State,Zip: BIRMINGHAM, MI 48009

L49
NNE
1/8-1/4
0.191 mi.
1008 ft.

JERRY BURNS CLEANERS
615 E MAPLE RD
BIRMINGHAM, MI 48009

RCRA NonGen / NLR
FINDS
ECHO

1000465820
MID985605112

Site 2 of 5 in cluster L

Relative:
Higher

RCRA NonGen / NLR:

Actual:
778 ft.

Date Form Received by Agency: 1998-09-17 00:00:00.0
Handler Name: JERRY BURNS CLEANERS
Handler Address: 615 E MAPLE RD
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MID985605112
Contact Name: ARMEN NAZARIAN
Contact Address: 615 E MAPLE RD
Contact City,State,Zip: BIRMINGHAM, MI 48009
Contact Telephone: 313-646-8733
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 615 E MAPLE RD
Mailing City,State,Zip: BIRMINGHAM, MI 48009
Owner Name: NAZARIAN ARMEN
Owner Type: Private
Operator Name: NAZARIAN ARMEN
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JERRY BURNS CLEANERS (Continued)

1000465820

Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JERRY BURNS CLEANERS (Continued)

1000465820

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	NAZARIAN ARMEN
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	NAZARIAN ARMEN
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NAZARIAN ARMEN
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NAZARIAN ARMEN
Legal Status:	Private
Date Became Current:	1970-01-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	1998-09-17 00:00:00.0
Handler Name:	JERRY BURNS CLEANERS
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

JERRY BURNS CLEANERS (Continued)

1000465820

Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported
Receive Date:	1991-02-05 00:00:00.0
Handler Name:	JERRY BURNS CLEANERS
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	No
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	81232
NAICS Description:	DRYCLEANING AND LAUNDRY SERVICES (EXCEPT COIN-OPERATED)

Facility Has Received Notices of Violations:

Violations:	No Violations Found
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Evaluation Action Summary:

Evaluations:	No Evaluations Found
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FINDS:

Registry ID:	110003652379
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Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000465820
Registry ID:	110003652379
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110003652379
Name:	JERRY BURNS CLEANERS
Address:	615 E MAPLE RD
City,State,Zip:	BIRMINGHAM, MI 48009

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

L50
NE
1/8-1/4
0.193 mi.
1020 ft.
JERRY BURNS DRY CLEANERS
615 E. MAPLE
BIRMINGHAM, MI 48011
Site 3 of 5 in cluster L

DRYCLEANERS **S125694198**
N/A

Relative: DRYCLEANERS:
Higher Name: JERRY BURNS DRY CLEANERS
Address: 615 E. MAPLE
Actual: City,State,Zip: BIRMINGHAM, MI 48011
777 ft. fadd2: Not reported
Facility Status: Closed
Establishment#: 6300337
DCM #: Not reported
DCM Type: Commercial
Total lb: Not reported
Inspector: Not reported
Last Insp Date: Not reported

K51
SE
1/8-1/4
0.200 mi.
1054 ft.
JIMMIES RUSTICS
690 SOUTH OLD WOODWARD
BIRMINGHAM, MI
Site 3 of 3 in cluster K

BEA **S107596787**
N/A

Relative: BEA:
Lower Name: JIMMIES RUSTICS
Address: 690 SOUTH OLD WOODWARD
Actual: City,State,Zip: BIRMINGHAM, MI
760 ft. Secondary Address: Not reported
BEA Number: 3058
District: Southeast MI
Date Received: 02/08/2006
Submitter Name: Perimeter Properties
Petition Determination: No Request
Petition Disclosure: 0
Category: N
Determination 20107A: No Request
Reviewer: williams
Division Assigned: ERD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

	Site	Database(s)	
L52 NE 1/8-1/4 0.200 mi. 1055 ft.	KROGER CO OF MICHIGAN 685 E MAPLE RD BIRMINGHAM, MI 48009 Site 4 of 5 in cluster L	RCRA-VSQG	1010785838 MIK996275632
Relative: Higher	RCRA-VSQG:		
Actual: 777 ft.	Date Form Received by Agency:	2007-10-02 00:00:00.0	
	Handler Name:	KROGER CO OF MICHIGAN	
	Handler Address:	685 E MAPLE RD	
	Handler City,State,Zip:	BIRMINGHAM, MI 48009	
	EPA ID:	MIK996275632	
	Contact Name:	JIM WARD	
	Contact Address:	685 E MAPLE RD	
	Contact City,State,Zip:	BIRMINGHAM, MI 48009	
	Contact Telephone:	614-898-3506	
	Contact Fax:	Not reported	
	Contact Email:	Not reported	
	Contact Title:	Not reported	
	EPA Region:	05	
	Land Type:	Private	
	Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator	
	Non-Notifier:	Not reported	
	Biennial Report Cycle:	Not reported	
	Accessibility:	Not reported	
	Active Site Indicator:	Handler Activities	
	State District Owner:	Not reported	
	State District:	Not reported	
	Mailing Address:	4111 EXECUTIVE PKWY	
	Mailing City,State,Zip:	WESTERVILLE, OH 43081	
	Owner Name:	KROGER CO	
	Owner Type:	Private	
	Operator Name:	KROGER CO	
	Operator Type:	Private	
	Short-Term Generator Activity:	No	
	Importer Activity:	No	
	Mixed Waste Generator:	No	
	Transporter Activity:	No	
	Transfer Facility Activity:	No	
	Recycler Activity with Storage:	No	
	Small Quantity On-Site Burner Exemption:	No	
	Smelting Melting and Refining Furnace Exemption:	No	
	Underground Injection Control:	No	
	Off-Site Waste Receipt:	No	
	Universal Waste Indicator:	No	
	Universal Waste Destination Facility:	No	
	Federal Universal Waste:	No	
	Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site Converter Treatment storage and Disposal Facility:	Not reported	
	Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site State-Reg Handler:	---	
	Federal Facility Indicator:	Not reported	
	Hazardous Secondary Material Indicator:	NN	
	Sub-Part K Indicator:	Not reported	
	Commercial TSD Indicator:	No	
	Treatment Storage and Disposal Type:	Not reported	
	2018 GPRA Permit Baseline:	Not on the Baseline	
	2018 GPRA Renewals Baseline:	Not on the Baseline	
	Permit Renewals Workload Universe:	Not reported	

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KROGER CO OF MICHIGAN (Continued)

1010785838

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	KROGER CO
Legal Status:	Private
Date Became Current:	1998-08-12 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	KROGER CO
Legal Status:	Private
Date Became Current:	1998-08-12 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

KROGER CO OF MICHIGAN (Continued)

1010785838

Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2007-10-02 00:00:00.0
Handler Name: KROGER CO OF MICHIGAN
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 44511
NAICS Description: SUPERMARKETS AND OTHER GROCERY (EXCEPT CONVENIENCE) STORES

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

L53
NE
1/8-1/4
0.203 mi.
1074 ft.

J C & C ENTERPRISES LLC
700 E MAPLE RD
BIRMINGHAM, MI 48009
Site 5 of 5 in cluster L

RCRA NonGen / NLR **1012211265**
MIK559424759

Relative:
Higher
Actual:
773 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 2009-12-01 00:00:00.0
Handler Name: J C & C ENTERPRISES LLC
Handler Address: 700 E MAPLE RD
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIK559424759
Contact Name: CHERI TAUNT
Contact Address: 700 E MAPLE RD
Contact City,State,Zip: BIRMINGHAM, MI 48009
Contact Telephone: 248-642-9185
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

J C & C ENTERPRISES LLC (Continued)

1012211265

State District Owner:	Not reported
State District:	Not reported
Mailing Address:	700 E MAPLE RD
Mailing City,State,Zip:	BIRMINGHAM, MI 48009
Owner Name:	J C & C ENTERPRISES LLC
Owner Type:	Private
Operator Name:	J C & C ENTERPRISES LLC
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

J C & C ENTERPRISES LLC (Continued)

1012211265

Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	J C & C ENTERPRISES LLC
Legal Status:	Private
Date Became Current:	1992-10-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	J C & C ENTERPRISES LLC
Legal Status:	Private
Date Became Current:	1992-10-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2009-12-01 00:00:00.0
Handler Name:	J C & C ENTERPRISES LLC
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	53112
NAICS Description:	LESSORS OF NONRESIDENTIAL BUILDINGS (EXCEPT MINIWAREHOUSES)

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

J C & C ENTERPRISES LLC (Continued)

1012211265

Facility Has Received Notices of Violations:
Violations:

No Violations Found

Evaluation Action Summary:
Evaluations:

No Evaluations Found

O54 **772-784 SOUTH OLD WOODWARD**
SE **772-784 SOUTH OLD WOODWARD**
1/8-1/4 **OAKLAND (County), MI 48009**
0.220 mi.
1161 ft. **Site 1 of 5 in cluster O**

BEA **S127500553**
N/A

Relative:
Lower
Actual:
759 ft.

BEA:
Name: 772-784 SOUTH OLD WOODWARD
Address: 772-784 SOUTH OLD WOODWARD
City,State,Zip: MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 10/17/2008
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63501161
Submittal Type: Baseline Environmental Assessment
Submittal Number: B200804025LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2008-10-23 13:52:56
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: Records Manager: Box 186 To Lansing on 5/4/16
Organization: Woodward and George, LLC
Contact: Allan R. Longyear
Contact Type: Submitter Contact

O55 **TIFFANY FLORIST**
SE **772 S OLD WOODWARD AVE**
1/8-1/4 **BIRMINGHAM, MI 48009**
0.220 mi.
1161 ft. **Site 2 of 5 in cluster O**

LUST **U004123610**
UST **N/A**
INVENTORY

Relative:
Lower
Actual:
759 ft.

LUST:
Name: TIFFANY FLORIST
Address: 772 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00042132
Source: STATE OF MICHIGAN
Owner Name: VirginiaC Clohset Trust

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TIFFANY FLORIST (Continued)

U004123610

Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Tiffany Florist
Latitude: 42.54149
Longitude: -83.20967
Date of Collection: 03/14/2014
Method of Collection: Interpolation-Photo
Accuracy: 10
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0157-08
Release Date: 07/21/2008
Substance Released: Gasoline,Gasoline
Release Status: Open
Release Closed Date: Not reported

UST:

Name: TIFFANY FLORIST
Address: 772 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6600
Facility Type: CLOSED
Facility ID: 00042132
Owner Name: VIRGINIA C CLOHSET TRUST
Owner Address: C/O PHIL CLOHSET 1595 NORTHLAWN
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009
Owner Contact: Not reported
Owner Phone: 2486466534
Contact: Phil Clohset
Contact Phone: (248) 646-6534
Date of Collection: 03/14/2014
Accuracy: 10
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Interpolation-Photo
District: Region 1 - SE Michigan District Office
Tank ID: 3
Capacity: 500
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 01/01/1947

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TIFFANY FLORIST (Continued)

U004123610

Remove Date: 07/10/2008
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54149
Longitude: -83.20967

Name: TIFFANY FLORIST
Address: 772 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6600
Facility Type: CLOSED
Facility ID: 00042132
Owner Name: VIRGINIA C CLOHSET TRUST
Owner Address: C/O PHIL CLOHSET 1595 NORTHLAWN
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009
Owner Contact: Not reported
Owner Phone: 2486466534
Contact: Phil Clohset
Contact Phone: (248) 646-6534
Date of Collection: 03/14/2014
Accuracy: 10
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Interpolation-Photo
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 500
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 01/01/1947
Remove Date: 07/10/2008
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54149
Longitude: -83.20967

Name: TIFFANY FLORIST
Address: 772 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6600
Facility Type: CLOSED
Facility ID: 00042132

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

TIFFANY FLORIST (Continued)

U004123610

Owner Name: VIRGINIA C CLOHSET TRUST
Owner Address: C/O PHIL CLOHSET 1595 NORTHLAWN
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48009
Owner Contact: Not reported
Owner Phone: 2486466534
Contact: Phil Clohset
Contact Phone: (248) 646-6534
Date of Collection: 03/14/2014
Accuracy: 10
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Interpolation-Photo
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 1000
Tank Status: Closed in Ground
Substance: Gasoline
Install Date: 01/01/1947
Remove Date: 07/07/2008
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54149
Longitude: -83.20967

INVENTORY:

Name: TIFFANY FLORIST
Address: 772 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.54149
Longitude: -83.20968

O56
SE
1/8-1/4
0.221 mi.
1165 ft.

VIRGINIA C CLOHSET TRUST
784 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

RCRA NonGen / NLR

1011489214
MIK322432543

Site 3 of 5 in cluster O

Relative:
Lower

RCRA NonGen / NLR:

Date Form Received by Agency:

2008-06-27 00:00:00.0

Actual:
759 ft.

Handler Name:

VIRGINIA C CLOHSET TRUST

Handler Address:

784 S OLD WOODWARD AVE

Handler City,State,Zip:

BIRMINGHAM, MI 48009

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VIRGINIA C CLOHSET TRUST (Continued)

1011489214

EPA ID:	MIK322432543
Contact Name:	PHIL CLOHSET
Contact Address:	784 S OLD WOODWARD AVE
Contact City,State,Zip:	BIRMINGHAM, MI 48009
Contact Telephone:	248-646-6534
Contact Fax:	Not reported
Contact Email:	Not reported
Contact Title:	Not reported
EPA Region:	05
Land Type:	Private
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	1595 NORTHLAWN BLVD
Mailing City,State,Zip:	BIRMINGHAM, MI 48009
Owner Name:	VIRGINIA C CLOHSET TRUST
Owner Type:	Private
Operator Name:	VIRGINIA C CLOHSET TRUST
Operator Type:	Private
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VIRGINIA C CLOHSET TRUST (Continued)

1011489214

TSDFs Only Subject to CA under Discretionary Auth Universe: No
Corrective Action Priority Ranking: No NCAPS ranking
Environmental Control Indicator: No
Institutional Control Indicator: No
Human Exposure Controls Indicator: N/A
Groundwater Controls Indicator: N/A
Operating TSDF Universe: Not reported
Full Enforcement Universe: Not reported
Significant Non-Complier Universe: No
Unaddressed Significant Non-Complier Universe: No
Addressed Significant Non-Complier Universe: No
Significant Non-Complier With a Compliance Schedule Universe: No
Financial Assurance Required: Not reported
Handler Date of Last Change: 2011-03-03 13:15:53.0
Recognized Trader-Importer: No
Recognized Trader-Exporter: No
Importer of Spent Lead Acid Batteries: No
Exporter of Spent Lead Acid Batteries: No
Recycler Activity Without Storage: Not reported
Manifest Broker: Not reported
Sub-Part P Indicator: No

Hazardous Waste Summary:

Waste Code: D001
Waste Description: IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator: Operator
Owner/Operator Name: VIRGINIA C CLOHSET TRUST
Legal Status: Private
Date Became Current: 2005-01-02 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: VIRGINIA C CLOHSET TRUST
Legal Status: Private
Date Became Current: 2005-01-02 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2008-06-27 00:00:00.0
Handler Name: VIRGINIA C CLOHSET TRUST
Federal Waste Generator Description: Not a generator, verified

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

VIRGINIA C CLOHSET TRUST (Continued)

1011489214

State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	45311
NAICS Description:	FLORISTS

Facility Has Received Notices of Violations:

Violations:	No Violations Found
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Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

O57
SE
1/8-1/4
0.224 mi.
1184 ft.

WOODWARD AND GEORGE, LLC
772-784 SOUTH OLD WOODWARD
OAKLAND (County), MI 48009

INVENTORY **S114039925**
N/A

Site 4 of 5 in cluster O

Relative:
Lower

INVENTORY:

Actual:
759 ft.

Name:	WOODWARD AND GEORGE, LLC
Address:	772-784 SOUTH OLD WOODWARD
City,State,Zip:	MI 48009
Bea Number:	200804025LV
Township:	Birmingham
District:	Southeast MI
Data Source:	BEA
Latitude:	Not reported
Longitude:	Not reported

O58
SE
1/8-1/4
0.224 mi.
1184 ft.

WOODWARD AND GEORGE, LLC
772-784 SOUTH OLD WOODWARD
BIRMINGHAM, MI 48009

BEA **S109345280**
N/A

Site 5 of 5 in cluster O

Relative:
Lower

BEA:

Actual:
759 ft.

Name:	WOODWARD AND GEORGE, LLC
Address:	772-784 SOUTH OLD WOODWARD
City,State,Zip:	BIRMINGHAM, MI 48009
Secondary Address:	Not reported
BEA Number:	4025
District:	Southeast MI
Date Received:	10/17/2008
Submitter Name:	Woodward and George, LLC
Petition Determination:	No Request
Petition Disclosure:	0

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODWARD AND GEORGE, LLC (Continued)

S109345280

Category: N
Determination 20107A: No Request
Reviewer: mitchelf
Division Assigned: RRD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

59
NNE
1/8-1/4
0.227 mi.
1198 ft.

WM BEAUMONT HOSPITAL
35046 WOODWARD AVE
BIRMINGHAM, MI 48009

RCRA-VSQG
FINDS
ECHO

1016453456
MIK132883016

Relative:
Higher

Actual:
780 ft.

RCRA-VSQG:
Date Form Received by Agency: 2014-02-05 00:00:00.0
Handler Name: WM BEAUMONT HOSPITAL
Handler Address: 35046 WOODWARD AVE
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIK132883016
Contact Name: DAVE MULKA
Contact Address: Not reported
Contact City,State,Zip: Not reported
Contact Telephone: 248-690-4001
Contact Fax: Not reported
Contact Email: Not reported
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 35046 WOODWARD AVE
Mailing City,State,Zip: BIRMINGHAM, MI 48009
Owner Name: WM BEAUMONT HOSPITAL
Owner Type: Private
Operator Name: WM BEAUMONT HOSPITAL
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No
Recycler Activity with Storage: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WM BEAUMONT HOSPITAL (Continued)

1016453456

Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDs Where RCRA CA has Been Imposed Universe:	No
TSDs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSD Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2014-02-25 15:12:27.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WM BEAUMONT HOSPITAL (Continued)

1016453456

Owner/Operator Indicator: Operator
Owner/Operator Name: WM BEAUMONT HOSPITAL
Legal Status: Private
Date Became Current: 2013-11-12 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: WM BEAUMONT HOSPITAL
Legal Status: Private
Date Became Current: 2013-11-12 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 2014-02-05 00:00:00.0
Handler Name: WM BEAUMONT HOSPITAL
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 621111
NAICS Description: OFFICES OF PHYSICIANS (EXCEPT MENTAL HEALTH SPECIALISTS)

NAICS Code: 621512
NAICS Description: DIAGNOSTIC IMAGING CENTERS

Facility Has Received Notices of Violations:

Violations: No Violations Found

Evaluation Action Summary:

Evaluations: No Evaluations Found

FINDS:

Registry ID: 110058886987

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WM BEAUMONT HOSPITAL (Continued)

1016453456

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1016453456
Registry ID: 110058886987
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110058886987>
Name: WM BEAUMONT HOSPITAL
Address: 35046 WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009

**P60
SE
1/8-1/4
0.228 mi.
1205 ft.**

**GOODYEAR TIRE CENTER 1685
835 HAYNES ST
BIRMINGHAM, MI 48009**

Site 1 of 5 in cluster P

**LUST U000263055
UST N/A
WDS**

**Relative:
Lower**

LUST:

**Actual:
759 ft.**

Name: GOODYEAR TIRE CENTER 1685
Address: 835 HAYNES ST
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00021777
Source: STATE OF MICHIGAN
Owner Name: GoodyearTire Center
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Goodyear Tire & Rubber Co
Latitude: 42.54196
Longitude: -83.20949
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0700-93

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GOODYEAR TIRE CENTER 1685 (Continued)

U000263055

Release Date: 06/04/1993
Substance Released: Used Oil
Release Status: Closed
Release Closed Date: 09/30/1994

UST:

Name: GOODYEAR TIRE CENTER 1685
Address: 835 HAYNES ST
City,State,Zip: BIRMINGHAM 48009-6771
Facility Type: CLOSED
Facility ID: 00021777
Owner Name: GOODYEAR TIRE CENTER
Owner Address: PO BOX 5099
Owner City: SOUTHFIELD
Owner State: MI
Owner Zip: 48086-5099
Owner Contact: Not reported
Owner Phone: 7346473370
Contact: ERIC SCHULTZ
Contact Phone: (734) 647-3370
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 500
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: 04/16/1975
Remove Date: 06/04/1993
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54196
Longitude: -83.20949

WDS:

Name: HALBEISEN TOM INC
Address: 835 HAYNES ST
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MID985643790
WMD Id: 407279
Site Specific Name: HALBEISEN TOM INC
Mailing Address: 835 HAYNES ST
Mailing City/State/Zip: 48009
Mailing County: OAKLAND

Map ID
Direction
Distance
Elevation

MAP FINDINGS

	Site	Database(s)	EDR ID Number EPA ID Number
P61 SE 1/8-1/4 0.228 mi. 1205 ft.	HALBEISEN TOM INC 835 HAYNES ST BIRMINGHAM, MI 48009 Site 2 of 5 in cluster P	RCRA-VSQG FINDS ECHO	1000691549 MID985643790
Relative: Lower	RCRA-VSQG:		
Actual: 759 ft.	Date Form Received by Agency:	2004-04-19 00:00:00.0	
	Handler Name:	HALBEISEN TOM INC	
	Handler Address:	835 HAYNES ST	
	Handler City,State,Zip:	BIRMINGHAM, MI 48009	
	EPA ID:	MID985643790	
	Contact Name:	THOMAS HALBEISEN	
	Contact Address:	835 HAYNES ST	
	Contact City,State,Zip:	BIRMINGHAM, MI 48009	
	Contact Telephone:	248-647-3370	
	Contact Fax:	Not reported	
	Contact Email:	Not reported	
	Contact Title:	Not reported	
	EPA Region:	05	
	Land Type:	Private	
	Federal Waste Generator Description:	Conditionally Exempt Small Quantity Generator	
	Non-Notifier:	Not reported	
	Biennial Report Cycle:	Not reported	
	Accessibility:	Not reported	
	Active Site Indicator:	Handler Activities	
	State District Owner:	Not reported	
	State District:	Not reported	
	Mailing Address:	835 HAYNES ST	
	Mailing City,State,Zip:	BIRMINGHAM, MI 48009	
	Owner Name:	HALBEISEN TOM INC	
	Owner Type:	Private	
	Operator Name:	HALBEISEN TOM INC	
	Operator Type:	Private	
	Short-Term Generator Activity:	No	
	Importer Activity:	No	
	Mixed Waste Generator:	No	
	Transporter Activity:	No	
	Transfer Facility Activity:	No	
	Recycler Activity with Storage:	No	
	Small Quantity On-Site Burner Exemption:	No	
	Smelting Melting and Refining Furnace Exemption:	No	
	Underground Injection Control:	No	
	Off-Site Waste Receipt:	No	
	Universal Waste Indicator:	No	
	Universal Waste Destination Facility:	No	
	Federal Universal Waste:	No	
	Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site Converter Treatment storage and Disposal Facility:	Not reported	
	Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported	
	Active Site State-Reg Handler:	---	
	Federal Facility Indicator:	Not reported	
	Hazardous Secondary Material Indicator:	NN	
	Sub-Part K Indicator:	Not reported	
	Commercial TSD Indicator:	No	
	Treatment Storage and Disposal Type:	Not reported	
	2018 GPRA Permit Baseline:	Not on the Baseline	
	2018 GPRA Renewals Baseline:	Not on the Baseline	
	Permit Renewals Workload Universe:	Not reported	

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HALBEISEN TOM INC (Continued)

1000691549

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2011-03-03 13:15:53.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HALBEISEN TOM INC (Continued)

1000691549

Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Owner
Owner/Operator Name:	HALBEISEN TOM INC
Legal Status:	Private
Date Became Current:	1992-06-05 00:00:00.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HALBEISEN TOM INC (Continued)

1000691549

Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HALBEISEN TOM INC
Legal Status: Private
Date Became Current: 1992-06-05 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Operator
Owner/Operator Name: HALBEISEN TOM INC
Legal Status: Private
Date Became Current: 1992-06-05 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Owner/Operator Indicator: Owner
Owner/Operator Name: HALBEISEN TOM INC
Legal Status: Private
Date Became Current: 1992-06-05 00:00:00.
Date Ended Current: Not reported
Owner/Operator Address: Not reported
Owner/Operator City,State,Zip: Not reported
Owner/Operator Telephone: Not reported
Owner/Operator Telephone Ext: Not reported
Owner/Operator Fax: Not reported
Owner/Operator Email: Not reported

Historic Generators:

Receive Date: 1998-11-16 00:00:00.0
Handler Name: HALBEISEN TOM INC
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HALBEISEN TOM INC (Continued)

1000691549

Receive Date: 2003-06-23 00:00:00.0
Handler Name: HALBEISEN TOM INC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 1992-06-05 00:00:00.0
Handler Name: HALBEISEN TOM INC
Federal Waste Generator Description: Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2003-07-22 00:00:00.0
Handler Name: HALBEISEN TOM INC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: No
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

Receive Date: 2004-04-19 00:00:00.0
Handler Name: HALBEISEN TOM INC
Federal Waste Generator Description: Conditionally Exempt Small Quantity Generator
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:

NAICS Code: 44131
NAICS Description: AUTOMOTIVE PARTS AND ACCESSORIES STORES

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HALBEISEN TOM INC (Continued)

1000691549

Facility Has Received Notices of Violation:

Found Violation:	No
Agency Which Determined Violation:	Not reported
Violation Short Description:	Not reported
Date Violation was Determined:	Not reported
Actual Return to Compliance Date:	Not reported
Return to Compliance Qualifier:	Not reported
Violation Responsible Agency:	Not reported
Scheduled Compliance Date:	Not reported
Enforcement Identifier:	Not reported
Date of Enforcement Action:	Not reported
Enforcement Responsible Agency:	Not reported
Enforcement Docket Number:	Not reported
Enforcement Attorney:	Not reported
Corrective Action Component:	Not reported
Appeal Initiated Date:	Not reported
Appeal Resolution Date:	Not reported
Disposition Status Date:	Not reported
Disposition Status:	Not reported
Disposition Status Description:	Not reported
Consent/Final Order Sequence Number:	Not reported
Consent/Final Order Respondent Name:	Not reported
Consent/Final Order Lead Agency:	Not reported
Enforcement Type:	Not reported
Enforcement Responsible Person:	Not reported
Enforcement Responsible Sub-Organization:	Not reported
SEP Sequence Number:	Not reported
SEP Expenditure Amount:	Not reported
SEP Scheduled Completion Date:	Not reported
SEP Actual Date:	Not reported
SEP Defaulted Date:	Not reported
SEP Type:	Not reported
SEP Type Description:	Not reported
Proposed Amount:	Not reported
Final Monetary Amount:	Not reported
Paid Amount:	Not reported
Final Count:	Not reported
Final Amount:	Not reported

Evaluation Action Summary:

Evaluation Date:	2018-06-05 00:00:00.0
Evaluation Responsible Agency:	State
Found Violation:	No
Evaluation Type Description:	COMPLIANCE ASSISTANCE VISIT
Evaluation Responsible Person Identifier:	Not reported
Evaluation Responsible Sub-Organization:	Not reported
Actual Return to Compliance Date:	Not reported
Scheduled Compliance Date:	Not reported
Date of Request:	Not reported
Date Response Received:	Not reported
Request Agency:	Not reported
Former Citation:	Not reported

FINDS:

Registry ID: 110003671893

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HALBEISEN TOM INC (Continued)

1000691549

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000691549
Registry ID: 110003671893
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110003671893>
Name: HALBEISEN TOM INC
Address: 835 HAYNES ST
City,State,Zip: BIRMINGHAM, MI 48009

**Q62
NE
1/8-1/4
0.243 mi.
1281 ft.**

**MAPLE ELM DEVELOPMENT COMPANY LLC
820 E MAPLE
BIRMINGHAM, MI 48009**

**RCRA NonGen / NLR
FINDS
ECHO**

**1016449162
MIK204939963**

Site 1 of 2 in cluster Q

**Relative:
Higher**

RCRA NonGen / NLR:

**Actual:
770 ft.**

Date Form Received by Agency: 2013-11-01 00:00:00.0
Handler Name: MAPLE ELM DEVELOPMENT COMPANY LLC
Handler Address: 820 E MAPLE
Handler City,State,Zip: BIRMINGHAM, MI 48009
EPA ID: MIK204939963
Contact Name: MARK HIGHLEN
Contact Address: Not reported
Contact City,State,Zip: Not reported
Contact Telephone: 248-737-6175
Contact Fax: 248-737-6175
Contact Email: MHIGHLEN@BEZTALI.COM
Contact Title: Not reported
EPA Region: 05
Land Type: Private
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 31731 NORTH WESTERN HWY
Mailing City,State,Zip: FARMINGTON HILLS, MI 48334
Owner Name: MAPLE ELM DEVELOPMENT COMPANY LLC
Owner Type: Private
Operator Name: MAPLE ELM DEVELOPMENT COMPANY LLC
Operator Type: Private
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MAPLE ELM DEVELOPMENT COMPANY LLC (Continued)

1016449162

Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	NN
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSD Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2013-11-12 10:09:23.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Hazardous Waste Summary:

Waste Code:	D001
Waste Description:	IGNITABLE WASTE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MAPLE ELM DEVELOPMENT COMPANY LLC (Continued)

1016449162

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	MAPLE ELM DEVELOPMENT COMPANY LLC
Legal Status:	Private
Date Became Current:	2012-03-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MAPLE ELM DEVELOPMENT COMPANY LLC
Legal Status:	Private
Date Became Current:	2012-03-01 00:00:00.
Date Ended Current:	Not reported
Owner/Operator Address:	Not reported
Owner/Operator City,State,Zip:	Not reported
Owner/Operator Telephone:	Not reported
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2013-11-01 00:00:00.0
Handler Name:	MAPLE ELM DEVELOPMENT COMPANY LLC
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	531311
NAICS Description:	RESIDENTIAL PROPERTY MANAGERS

Facility Has Received Notices of Violations:

Violations:	No Violations Found
-------------	---------------------

Evaluation Action Summary:

Evaluations:	No Evaluations Found
--------------	----------------------

FINDS:

Registry ID:	110056377059
--------------	--------------

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MAPLE ELM DEVELOPMENT COMPANY LLC (Continued)

1016449162

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1016449162
Registry ID: 110056377059
DFR URL: <http://echo.epa.gov/detailed-facility-report?fid=110056377059>
Name: MAPLE ELM DEVELOPMENT COMPANY LLC
Address: 820 E MAPLE
City,State,Zip: BIRMINGHAM, MI 48009

**63
NW
1/8-1/4
0.246 mi.
1300 ft.**

**WABEEK ASSOC GEN PARTNERSHIP
280 W MAPLE RD
BIRMINGHAM, MI 48009**

**UST U003834374
N/A**

**Relative:
Higher**

UST:

**Actual:
782 ft.**

Name: WABEEK ASSOC GEN PARTNERSHIP
Address: 280 W MAPLE RD
City,State,Zip: BIRMINGHAM 48009-3344
Facility Type: CLOSED
Facility ID: 00034440
Owner Name: MUTUAL BENEFIT LIFE
Owner Address: C/O MORRIS & BERKE 901 WILSHIRE DR SUITE 370
Owner City: TROY
Owner State: MI
Owner Zip: 48084
Owner Contact: Not reported
Owner Phone: 7343626808
Contact: A LYLE BECKWITH
Contact Phone: (734) 362-6808
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: Not reported
Tank Status: Removed from Ground
Substance: Other(FUEL OIL)
Install Date: 01/01/1928
Remove Date: 12/02/1993
Tank Number: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WABEEK ASSOC GEN PARTNERSHIP (Continued)

U003834374

Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54669
Longitude: -83.21687

Q64
NE
1/4-1/2
0.251 mi.
1327 ft.

HAMILTON FUNERAL HOME PROPERTY
820 EAST MAPLE ROAD
BIRMINGHAM, MI 48009
Site 2 of 2 in cluster Q

INVENTORY
BEA **S111832674**
N/A

Relative:
Higher
Actual:
770 ft.

INVENTORY:
Name: HAMILTON FUNERAL HOME PROPERTY
Address: 820 EAST MAPLE ROAD
City,State,Zip: MI 48009
Bea Number: 201205134LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

BEA:
Name: 820 EAST MAPLE ROAD
Address: 820 EAST MAPLE ROAD
City,State,Zip: MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 03/27/2012
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63501177
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201205134LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2012-03-29 13:37:08
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: Category B1 REVIEW CONCLUSION: BEA identifies a new concern, in whole or in part, and assessment of the available information indicates no imminent, ongoing or evident future significant risk exists. NOTE: Soil analytical identified arsenic, chromium, mercury, selenium and zinc above Part 201 Residential cleanup criteria. ***File in Grand Rapids for scanning***

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

HAMILTON FUNERAL HOME PROPERTY (Continued)

S111832674

Organization: Maple Elm Development Company, LLC
Contact: Bhushan C. Modi
Contact Type: Submitter Contact

Name: HAMILTON FUNERAL HOME PROPERTY
Address: 820 EAST MAPLE ROAD
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: 5134
District: Southeast MI
Date Received: 03/27/2012
Submitter Name: Maple Elm Development Company, LLC
Petition Determination: No Request
Petition Disclosure: 0
Category: Not reported
Determination 20107A: No Request
Reviewer: berakr
Division Assigned: RD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

P65 **LAVERY MI DEALERSHIP PROPERTIES NO.1,LLC**
ESE **907 AND 911 HAYNES STREET**
1/4-1/2 **OAKLAND (County), MI 48009**
0.259 mi.
1366 ft. **Site 3 of 5 in cluster P**

INVENTORY **S116710717**
N/A

Relative: **INVENTORY:**
Lower Name: LAVERY MI DEALERSHIP PROPERTIES NO.1,LLC
Address: 907 AND 911 HAYNES STREET
Actual: City,State,Zip: MI 48009
759 ft. Bea Number: 201406074LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

P66
ESE
1/4-1/2
0.259 mi.
1366 ft.

FRED LAVERY COMPANY
907 AND 911 HAYNES STREET
OAKLAND (County), MI 48009

INVENTORY **S116710696**
N/A

Site 4 of 5 in cluster P

Relative:
Lower

INVENTORY:

Actual:
759 ft.

Name: FRED LAVERY COMPANY
Address: 907 AND 911 HAYNES STREET
City,State,Zip: MI 48009
Bea Number: 201406073LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

P67
ESE
1/4-1/2
0.259 mi.
1366 ft.

907 AND 911 HAYNES STREET
907 AND 911 HAYNES STREET
OAKLAND (County), MI 48009

BEA **S127500710**
N/A

Site 5 of 5 in cluster P

Relative:
Lower

BEA:

Actual:
759 ft.

Name: 907 AND 911 HAYNES STREET
Address: 907 AND 911 HAYNES STREET
City,State,Zip: MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 07/23/2014
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63501199
Submission Type: Baseline Environmental Assessment
Submission Number: B201406073LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2014-07-24 08:20:07
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: Not reported
Organization: Fred Lavery Company
Contact: G2 Consulting Group, LLC
Contact Type: Submitter Contact

Name: 907 AND 911 HAYNES STREET
Address: 907 AND 911 HAYNES STREET
City,State,Zip: MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 07/23/2014
Submitter Name: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

907 AND 911 HAYNES STREET (Continued)

S127500710

Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63501199
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201406074LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2014-07-24 08:27:51
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: Not reported
Organization: Lavery MI Dealership Properties No.1,LLC
Contact: G2 Consulting Group, LLC
Contact Type: Submitter Contact

68
WNW
1/4-1/2
0.276 mi.
1455 ft.

PROPOSED BALDWIN HOUSE SITE
200 CHESTER ST
BIRMINGHAM, MI 48009

LUST **U001777213**
UST **N/A**
WDS

Relative:
Higher
Actual:
782 ft.

LUST:
Name: PROPOSED BALDWIN HOUSE SITE
Address: 200 CHESTER ST
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00037464
Source: STATE OF MICHIGAN
Owner Name: BirminghamLtd Divided Assc Ptn
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Baldwin House Site
Latitude: 42.54567
Longitude: -83.21853
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0628-93
Release Date: 05/19/1993

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PROPOSED BALDWIN HOUSE SITE (Continued)

U001777213

Substance Released: Heating Oil
Release Status: Closed
Release Closed Date: 03/23/1995

UST:

Name: PROPOSED BALDWIN HOUSE SITE
Address: 200 CHESTER ST
City,State,Zip: BIRMINGHAM 48009-1420
Facility Type: CLOSED
Facility ID: 00037464
Owner Name: BIRMINGHAM LTD DIVIDED ASSC PTN
Owner Address: 29777 TELEGRAPH RD STE 2100
Owner City: SOUTHFIELD
Owner State: MI
Owner Zip: 48034-7637
Owner Contact: Not reported
Owner Phone: 3133582323
Contact: Marv Rubin
Contact Phone: (313) 358-2323
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: Not reported
Tank Status: Closed in Ground
Substance: Other(UNK)
Install Date: Not reported
Remove Date: 01/01/1969
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54567
Longitude: -83.21853

WDS:

Name: BALDWIN HOUSE
Address: 200 CHESTER ST
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIK756294448
WMD Id: 489340
Site Specific Name: BALDWIN HOUSE
Mailing Address: 200 CHESTER ST
Mailing City/State/Zip: 48009
Mailing County: OAKLAND

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

69
SE
1/4-1/2
0.284 mi.
1501 ft.

AMERICAR
860 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009

LUST **U000263070**
UST **N/A**
WDS

Relative:
Lower

LUST:

Actual:
758 ft.

Name: AMERICAR
Address: 860 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00034958
Source: STATE OF MICHIGAN
Owner Name: BeierDean G % Robert R. Shuman
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Americar Rental
Latitude: 42.54084
Longitude: -83.20877
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0468-89
Release Date: 08/29/1989
Substance Released: Not reported
Release Status: Closed
Release Closed Date: 08/16/1990

UST:

Name: AMERICAR
Address: 860 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-6722
Facility Type: CLOSED
Facility ID: 00034958
Owner Name: BEIER DEAN G % ROBERT R. SHUMAN
Owner Address: 200 E LONG LAKE RD SUITE110
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48304
Owner Contact: Not reported
Owner Phone: 3136459400
Contact: Not reported
Contact Phone: () -
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

AMERICAR (Continued)

U000263070

Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	2
Capacity:	1000
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	01/01/1948
Remove Date:	02/15/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54084
Longitude:	-83.20877
Name:	AMERICAR
Address:	860 S OLD WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48009-6722
Facility Type:	CLOSED
Facility ID:	00034958
Owner Name:	BEIER DEAN G % ROBERT R. SHUMAN
Owner Address:	200 E LONG LAKE RD SUITE110
Owner City:	BLOOMFIELD HILLS
Owner State:	MI
Owner Zip:	48304
Owner Contact:	Not reported
Owner Phone:	3136459400
Contact:	Not reported
Contact Phone:	() -
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	1
Capacity:	1000
Tank Status:	Removed from Ground
Substance:	Heating Oil
Install Date:	01/01/1948
Remove Date:	02/15/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

AMERICAR (Continued)

U000263070

Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54084
Longitude: -83.20877

WDS:

Name: AMERICAR RENTAL SYSTEM
Address: 860 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIG000012614
WMD Id: 456124
Site Specific Name: AMERICAR RENTAL SYSTEM
Mailing Address: 860 S OLD WOODWARD AVE
Mailing City/State/Zip: 48009
Mailing County: OAKLAND

R70
ENE
1/4-1/2
0.287 mi.
1513 ft.

ELMWOOD PROPERTIES I, LLC
920-970 EAST MAPLE ROAD
BIRMINGHAM, MI

BEA S104912490
N/A

Site 1 of 5 in cluster R

Relative:
Higher

Actual:
768 ft.

BEA:

Name: ELMWOOD PROPERTIES I, LLC
Address: 920-970 EAST MAPLE ROAD
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 1133
District: Southeast MI
Date Received: 05/02/2000
Submitter Name: ELMWOOD PROPERTIES I, LLC
Petition Determination: Affirmed
Petition Disclosure: 1
Category: N
Determination 20107A: No Request
Reviewer: temppm
Division Assigned: ERD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

S71
NNW
1/4-1/2
0.300 mi.
1585 ft.
Site 1 of 2 in cluster S

COMERICA BANK BIRMINGHAM
322 N. OLD WOODWARD
BIRMINGHAM, MI 48009

INVENTORY **S114028625**
N/A

Relative:
Higher

INVENTORY:

Name: COMERICA BANK BIRMINGHAM
Address: 322 N. OLD WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.54826
Longitude: -83.2162

Actual:
773 ft.

R72
ENE
1/4-1/2
0.311 mi.
1644 ft.
Site 2 of 5 in cluster R

PARKING LOT (DIETZ CORP)
985 E MAPLE RD
BIRMINGHAM, MI 48009

INVENTORY **S102851965**
BEA **N/A**

Relative:
Higher

INVENTORY:

Name: PARKING LOT (DIETZ CORP)
Address: 985 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.54696
Longitude: -83.20728

Actual:
768 ft.

BEA:

Name: DIETZ CORPORATION (PARKING LOT)
Address: 985 E. MAPLE ROAD
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 430
District: Southeast MI
Date Received: 09/12/1997
Submitter Name: PAUL DIETZ
Petition Determination: Affirmed
Petition Disclosure: 1
Category: N
Determination 20107A: Affirmed
Reviewer: temppm
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PARKING LOT (DIETZ CORP) (Continued)

S102851965

Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Name: BSP REALTY
Address: 985 E. MAPLE ROAD
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 566
District: Southeast MI
Date Received: 03/23/1998
Submitter Name: BSP REALTY
Petition Determination: Affirmed
Petition Disclosure: 1
Category: N
Determination 20107A: Affirmed
Reviewer: temppm
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Name: PARKING LOT (DIETZ CORP)
Address: 985 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 09/12/1997
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 50002129
Submittal Type: Baseline Environmental Assessment
Submittal Number: P199700430LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2004-01-31 07:29:04
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: RECORD CENTER - 895157 - BEA187
Organization: PAUL DIETZ

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PARKING LOT (DIETZ CORP) (Continued)

S102851965

Contact:	MR. PAUL J. DIETZ
Contact Type:	Submitter Contact
Name:	PARKING LOT (DIETZ CORP)
Address:	985 E MAPLE RD
City,State,Zip:	BIRMINGHAM, MI 48009
Secondary Address:	Not reported
BEA Number:	Not reported
District:	Not reported
Date Received:	03/23/1998
Submitter Name:	Not reported
Petition Determination:	Not reported
Petition Disclosure:	Not reported
Category:	Not reported
Determination 20107A:	Not reported
Reviewer:	Not reported
Division Assigned:	Not reported
Location ID:	50002129
Submittal Type:	Baseline Environmental Assessment
Submittal Number:	P199800566LV
Approval Status:	RRD Received
Workflow Status:	Submitted
Date Submitted:	2004-01-31 07:29:04
Date Completed:	Not reported
Township:	Birmingham
Work Unit:	Warren
Comments:	RECORD CENTER - 895157 - BEA187
Organization:	BSP REALTY
Contact:	MR. PAUL J. DIETZ
Contact Type:	Submitter Contact
Name:	PARKING LOT (DIETZ CORP)
Address:	985 E MAPLE RD
City,State,Zip:	BIRMINGHAM, MI 48009
Secondary Address:	Not reported
BEA Number:	Not reported
District:	Not reported
Date Received:	06/25/2013
Submitter Name:	Not reported
Petition Determination:	Not reported
Petition Disclosure:	Not reported
Category:	Not reported
Determination 20107A:	Not reported
Reviewer:	Not reported
Division Assigned:	Not reported
Location ID:	50002129
Submittal Type:	Baseline Environmental Assessment
Submittal Number:	B201305627LV
Approval Status:	RRD Received
Workflow Status:	Submitted
Date Submitted:	2013-06-28 13:17:08
Date Completed:	Not reported
Township:	Birmingham
Work Unit:	Warren
Comments:	FACILITY ID# 50002129 ategory A2 REVIEW CONCLUSION: BEA is entirely of previously identified concerns, and further follow up is needed, awaiting resources.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PARKING LOT (DIETZ CORP) (Continued)

S102851965

Organization: Osos Tontos LLC
Contact: Brian Kuberski
Contact Type: Submitter Contact

R73
ENE
1/4-1/2
0.311 mi.
1644 ft.

PARKING LOT (DIETZ CORP)
985 E MAPLE RD
BIRMINGHAM, MI 48009
Site 3 of 5 in cluster R

LUST **U004275225**
UST **N/A**

Relative:
Higher

Actual:
768 ft.

LUST:
Name: PARKING LOT (DIETZ CORP)
Address: 985 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 50002129
Source: STATE OF MICHIGAN
Owner Name: NrtOwner
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Parking Lot (dietz Corp)
Latitude: 42.54696
Longitude: -83.20728
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0999-97
Release Date: 10/14/1997
Substance Released: Unknown
Release Status: Open
Release Closed Date: Not reported

UST:

Name: PARKING LOT (DIETZ CORP)
Address: 985 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6410
Facility Type: CLOSED
Facility ID: 50002129
Owner Name: NRT OWNER
Owner Address: UNKNOWN
Owner City: UNKNOWN
Owner State: MI
Owner Zip: 99999
Owner Contact: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

PARKING LOT (DIETZ CORP) (Continued)

U004275225

Owner Phone:	Not reported
Contact:	Not reported
Contact Phone:	Not reported
Date of Collection:	Not reported
Accuracy:	Not reported
Horizontal Datum:	Not reported
Accuracy Value Unit:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
District:	Not reported
Tank ID:	1
Capacity:	Not reported
Tank Status:	Removed from Ground
Substance:	Not reported
Install Date:	Not reported
Remove Date:	10/14/1997
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	Not reported
Longitude:	Not reported

UST 2:

Name:	PARKING LOT (DIETZ CORP)
Address:	985 E MAPLE RD
City,State,Zip:	BIRMINGHAM, MI 48009-6410
Region:	Not reported
Owner Name:	OWNER ADDRESS UNKNOWN
Owner Address:	Not Recorded
Owner City:	Not reported
Owner State:	Not reported
Owner Zip:	99999
Owner Phone:	Not reported
Record ID:	UTK-009763-15
Facility Status:	Not reported
Tank ID:	Not reported
Tank Status:	Removed from Ground
Tank Capacity:	Not reported
Tank Content:	Not reported
Install Date:	01/01/1900
Removal Date:	01/01/1900
Tank Release Detect:	Not reported
Pipe Release Detect:	Not reported
Tank Piping Material:	Not reported
Tank Constr. Material:	Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

R74
ENE
1/4-1/2
0.312 mi.
1645 ft.
BUDGET RENT-A-CAR
1000 E MAPLE RD
BIRMINGHAM, MI 48009
Site 4 of 5 in cluster R

LUST
UST
INVENTORY
WDS
U000261651
N/A

Relative:
Lower

LUST:

Actual:
766 ft.

Name: BUDGET RENT-A-CAR
Address: 1000 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00007720
Source: STATE OF MICHIGAN
Owner Name: ConineRentals, Inc
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Budget Rent A Car
Latitude: 42.54670
Longitude: -83.20653
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0844-90
Release Date: 05/11/1990
Substance Released: Not reported
Release Status: Open
Release Closed Date: Not reported

Leak Number: C-0990-90
Release Date: 06/01/1990
Substance Released: Not reported
Release Status: Open
Release Closed Date: Not reported

UST:

Name: BUDGET RENT-A-CAR
Address: 1000 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00007720
Owner Name: CONINE RENTALS, INC
Owner Address: 8715 WICKHAM RD
Owner City: ROMULUS
Owner State: MI
Owner Zip: 48174-1915
Owner Contact: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BUDGET RENT-A-CAR (Continued)

U000261651

Owner Phone: 7343266880
Contact: MARY BOYD
Contact Phone: (313) 540-3211
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 4
Capacity: 550
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: Not reported
Remove Date: 06/17/1991
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54670
Longitude: -83.20653

Name: BUDGET RENT-A-CAR
Address: 1000 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00007720
Owner Name: CONINE RENTALS, INC
Owner Address: 8715 WICKHAM RD
Owner City: ROMULUS
Owner State: MI
Owner Zip: 48174-1915
Owner Contact: Not reported
Owner Phone: 7343266880
Contact: MARY BOYD
Contact Phone: (313) 540-3211
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 3
Capacity: 1000
Tank Status: Removed from Ground
Substance: Kerosene
Install Date: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BUDGET RENT-A-CAR (Continued)

U000261651

Remove Date:	06/17/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54670
Longitude:	-83.20653
Name:	BUDGET RENT-A-CAR
Address:	1000 E MAPLE RD
City,State,Zip:	BIRMINGHAM 48009-6423
Facility Type:	CLOSED
Facility ID:	00007720
Owner Name:	CONINE RENTALS, INC
Owner Address:	8715 WICKHAM RD
Owner City:	ROMULUS
Owner State:	MI
Owner Zip:	48174-1915
Owner Contact:	Not reported
Owner Phone:	7343266880
Contact:	MARY BOYD
Contact Phone:	(313) 540-3211
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	2
Capacity:	10000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	Not reported
Remove Date:	06/17/1991
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54670
Longitude:	-83.20653
Name:	BUDGET RENT-A-CAR
Address:	1000 E MAPLE RD
City,State,Zip:	BIRMINGHAM 48009-6423
Facility Type:	CLOSED
Facility ID:	00007720

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BUDGET RENT-A-CAR (Continued)

U000261651

Owner Name: CONINE RENTALS, INC
Owner Address: 8715 WICKHAM RD
Owner City: ROMULUS
Owner State: MI
Owner Zip: 48174-1915
Owner Contact: Not reported
Owner Phone: 7343266880
Contact: MARY BOYD
Contact Phone: (313) 540-3211
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 10000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 06/17/1991
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54670
Longitude: -83.20653

INVENTORY:

Name: BUDGET RENT-A-CAR
Address: 1000 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.5467
Longitude: -83.20654

WDS:

Name: BUDGET RENT A CAR
Address: 1000 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIG000018867
WMD Id: 453923
Site Specific Name: BUDGET RENT A CAR
Mailing Address: 1000 E MAPLE RD
Mailing City/State/Zip: 48009
Mailing County: OAKLAND

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

R75
ENE
1/4-1/2
0.312 mi.
1647 ft.
OSOS TONTOS LLC
985 EAST MAPLE
BIRMINGHAM, MI 48104
Site 5 of 5 in cluster R

BEA **S113828182**
N/A

Relative: BEA:
Lower Name: OSOS TONTOS LLC
Address: 985 EAST MAPLE
Actual: City,State,Zip: BIRMINGHAM, MI 48104
767 ft. Secondary Address: Not reported
BEA Number: 5627
District: Southeast MI
Date Received: 06/25/2013
Submitter Name: Osos Tontos LLC
Petition Determination: No Request
Petition Disclosure: 0
Category: Not reported
Determination 20107A: No Request
Reviewer: mitchelf
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

S76
NNW
1/4-1/2
0.324 mi.
1710 ft.
344 NORTH OLD WOODWARD AVENUE
344 NORTH OLD WOODWARD AVENUE
BIRMINGHAM, MI 48009
Site 2 of 2 in cluster S

INVENTORY **S123643087**
BEA **N/A**

Relative: INVENTORY:
Higher Name: 344 NORTH OLD WOODWARD AVENUE
Address: 344 NORTH OLD WOODWARD AVENUE
Actual: City,State,Zip: BIRMINGHAM, MI
771 ft. Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 201
Latitude: 42.54895
Longitude: -83.21577

BEA:
Name: 344 NORTH OLD WOODWARD AVENUE
Address: 344 NORTH OLD WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

344 NORTH OLD WOODWARD AVENUE (Continued)

S123643087

Date Received: 02/14/2019
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63500536
Submittal Type: Baseline Environmental Assessment
Submittal Number: 63500536-BEA-1
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2019-02-25 11:58:09
Date Completed: 11/2/2018
Township: Not reported
Work Unit: Warren
Comments: Not reported
Organization: 344 North Old Woodward LLC
Contact: Najor, Brian
Contact Type: Property Manager

77
West
1/4-1/2
0.326 mi.
1720 ft.

BIRMINGHAM PUBLIC SCHOOLS
550 W MERRILL ST
BIRMINGHAM, MI 48009

LUST **S102851783**
INVENTORY **N/A**

Relative:
Higher
Actual:
780 ft.

LUST:
Name: BIRMINGHAM PUBLIC SCHOOLS
Address: 550 W MERRILL ST
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 50000584
Source: STATE OF MICHIGAN
Owner Name: NrtOwner
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Birmingham Public Schools
Latitude: 42.54592
Longitude: -83.21942
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM PUBLIC SCHOOLS (Continued)

S102851783

Leak Number: C-1462-90
Release Date: 08/08/1990
Substance Released: Not reported
Release Status: Open
Release Closed Date: Not reported

INVENTORY:

Name: BIRMINGHAM PUBLIC SCHOOLS
Address: 550 W MERRILL ST
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.54593
Longitude: -83.21942

78
WNW
1/4-1/2
0.337 mi.
1780 ft.

FIRST CHURCH OF CHRIST
191 N. CHESTER ST.
BIRMINGHAM, MI 48009

INVENTORY **S114028648**
N/A

Relative:
Higher
Actual:
780 ft.

INVENTORY:

Name: FIRST CHURCH OF CHRIST
Address: 191 N. CHESTER ST.
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.54709
Longitude: -83.21811

79
ESE
1/4-1/2
0.338 mi.
1787 ft.

597-725 SOUTH ADAMS ROAD
597 SOUTH ADAMS ROAD
BIRMINGHAM, MI 48009

INVENTORY **S112452279**
BEA **N/A**
WDS

Relative:
Lower
Actual:
757 ft.

INVENTORY:

Name: 597-725 SOUTH ADAMS ROAD
Address: 597 SOUTH ADAMS ROAD
City,State,Zip: BIRMINGHAM, MI
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 201
Latitude: 42.54285
Longitude: -83.20396

BEA:

Name: 597-725 SOUTH ADAMS ROAD
Address: 597 SOUTH ADAMS ROAD
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

597-725 SOUTH ADAMS ROAD (Continued)

S112452279

BEA Number: Not reported
District: Not reported
Date Received: 04/13/2020
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63501342
Submittal Type: Baseline Environmental Assessment
Submittal Number: 63501342-BEA-1
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2020-05-06 11:56:02
Date Completed: 1/17/2020
Township: Not reported
Work Unit: Warren
Comments: Not reported
Organization: South Adams Shopping Center Owner LLC
Contact: Herbert, Franz
Contact Type: Prospective Owner/Operator

WDS:

Name: PERRY DRUG STORES INC
Address: 597 S ADAMS RD
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIK196218299
WMD Id: 491808
Site Specific Name: RITE AID #4303
Mailing Address: 30 HUNTER LN
Mailing City/State/Zip: 17011
Mailing County: Not reported

**80
ESE
1/4-1/2
0.341 mi.
1803 ft.**

**THE PLANT STATION
720 S ADAMS RD
BIRMINGHAM, MI 48009**

**LUST U003324173
UST N/A**

**Relative:
Lower
Actual:
756 ft.**

LUST:

Name: THE PLANT STATION
Address: 720 S ADAMS RD
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00018613
Source: STATE OF MICHIGAN
Owner Name: LynnE. Arft
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: The Plant Station
Latitude: 42.54215
Longitude: -83.20557

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

THE PLANT STATION (Continued)

U003324173

Date of Collection: 10/05/2004
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0922-97
Release Date: 10/13/1997
Substance Released: Gasoline,Unknown
Release Status: Closed
Release Closed Date: 11/24/1998

UST:

Name: THE PLANT STATION
Address: 720 S ADAMS RD
City,State,Zip: BIRMINGHAM 48009-6930
Facility Type: CLOSED
Facility ID: 00018613
Owner Name: LYNN E. ARFT
Owner Address: 720 ADAMS
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48011
Owner Contact: Not reported
Owner Phone: 3136428900
Contact: LYNN E. ARFT
Contact Phone: (313) 642-8900
Date of Collection: 10/05/2004
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 4
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1969
Remove Date: 07/01/1987
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

THE PLANT STATION (Continued)

U003324173

Latitude: 42.54215
Longitude: -83.20557

Name: THE PLANT STATION
Address: 720 S ADAMS RD
City,State,Zip: BIRMINGHAM 48009-6930
Facility Type: CLOSED
Facility ID: 00018613
Owner Name: LYNN E. ARFT
Owner Address: 720 ADAMS
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48011
Owner Contact: Not reported
Owner Phone: 3136428900
Contact: LYNN E. ARFT
Contact Phone: (313) 642-8900
Date of Collection: 10/05/2004
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 3
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1958
Remove Date: 07/01/1987
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54215
Longitude: -83.20557

Name: THE PLANT STATION
Address: 720 S ADAMS RD
City,State,Zip: BIRMINGHAM 48009-6930
Facility Type: CLOSED
Facility ID: 00018613
Owner Name: LYNN E. ARFT
Owner Address: 720 ADAMS
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48011
Owner Contact: Not reported
Owner Phone: 3136428900
Contact: LYNN E. ARFT
Contact Phone: (313) 642-8900

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

THE PLANT STATION (Continued)

U003324173

Date of Collection: 10/05/2004
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1958
Remove Date: 07/01/1987
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54215
Longitude: -83.20557

Name: THE PLANT STATION
Address: 720 S ADAMS RD
City,State,Zip: BIRMINGHAM 48009-6930
Facility Type: CLOSED
Facility ID: 00018613
Owner Name: LYNN E. ARFT
Owner Address: 720 ADAMS
Owner City: BIRMINGHAM
Owner State: MI
Owner Zip: 48011
Owner Contact: Not reported
Owner Phone: 3136428900
Contact: LYNN E. ARFT
Contact Phone: (313) 642-8900
Date of Collection: 10/05/2004
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 4000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1985
Remove Date: 07/01/1987
Tank Number: Not reported
Tank Details Compartments: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

THE PLANT STATION (Continued)

U003324173

Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54215
Longitude: -83.20557

T81
ENE
1/4-1/2
0.353 mi.
1865 ft.
BIRMINGHAM STANDARD
1088 E MAPLE RD
BIRMINGHAM, MI 48009
Site 1 of 2 in cluster T

LUST
UST
WDS
U000261690
N/A

Relative:
Lower

LUST:
Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00001897
Source: STATE OF MICHIGAN
Owner Name: BirminghamStandard
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Amoco #5349
Latitude: 42.54671
Longitude: -83.20611
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Actual:
763 ft.

Leak Number: C-0863-85
Release Date: 01/01/1900
Substance Released: Not reported
Release Status: Closed
Release Closed Date: 05/21/1996

UST:
Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00001897
Owner Name: BIRMINGHAM STANDARD

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM STANDARD (Continued)

U000261690

Owner Address: 4215 YORBA LINDA BLVD
Owner City: ROYAL OAK
Owner State: MI
Owner Zip: 48073-6463
Owner Contact: Not reported
Owner Phone: 3136424888
Contact: J E WESTON
Contact Phone: (734) 953-7013
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 7
Capacity: 560
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: 04/11/1986
Remove Date: 11/22/1994
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54671
Longitude: -83.20611

Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00001897
Owner Name: BIRMINGHAM STANDARD
Owner Address: 4215 YORBA LINDA BLVD
Owner City: ROYAL OAK
Owner State: MI
Owner Zip: 48073-6463
Owner Contact: Not reported
Owner Phone: 3136424888
Contact: J E WESTON
Contact Phone: (734) 953-7013
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM STANDARD (Continued)

U000261690

Tank ID:	6
Capacity:	560
Tank Status:	Removed from Ground
Substance:	Diesel
Install Date:	04/11/1952
Remove Date:	01/31/1994
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54671
Longitude:	-83.20611
Name:	BIRMINGHAM STANDARD
Address:	1088 E MAPLE RD
City,State,Zip:	BIRMINGHAM 48009-6423
Facility Type:	CLOSED
Facility ID:	00001897
Owner Name:	BIRMINGHAM STANDARD
Owner Address:	4215 YORBA LINDA BLVD
Owner City:	ROYAL OAK
Owner State:	MI
Owner Zip:	48073-6463
Owner Contact:	Not reported
Owner Phone:	3136424888
Contact:	J E WESTON
Contact Phone:	(734) 953-7013
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	5
Capacity:	6000
Tank Status:	Removed from Ground
Substance:	Gasoline
Install Date:	04/11/1952
Remove Date:	11/22/1994
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.54671
Longitude:	-83.20611

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM STANDARD (Continued)

U000261690

Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00001897
Owner Name: BIRMINGHAM STANDARD
Owner Address: 4215 YORBA LINDA BLVD
Owner City: ROYAL OAK
Owner State: MI
Owner Zip: 48073-6463
Owner Contact: Not reported
Owner Phone: 3136424888
Contact: J E WESTON
Contact Phone: (734) 953-7013
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 4
Capacity: 5500
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1952
Remove Date: 11/22/1994
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54671
Longitude: -83.20611

Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00001897
Owner Name: BIRMINGHAM STANDARD
Owner Address: 4215 YORBA LINDA BLVD
Owner City: ROYAL OAK
Owner State: MI
Owner Zip: 48073-6463
Owner Contact: Not reported
Owner Phone: 3136424888
Contact: J E WESTON
Contact Phone: (734) 953-7013
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM STANDARD (Continued)

U000261690

Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 3
Capacity: 5500
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1952
Remove Date: 11/22/1994
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54671
Longitude: -83.20611

Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00001897
Owner Name: BIRMINGHAM STANDARD
Owner Address: 4215 YORBA LINDA BLVD
Owner City: ROYAL OAK
Owner State: MI
Owner Zip: 48073-6463
Owner Contact: Not reported
Owner Phone: 3136424888
Contact: J E WESTON
Contact Phone: (734) 953-7013
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 4000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1952
Remove Date: 11/22/1994
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

BIRMINGHAM STANDARD (Continued)

U000261690

Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54671
Longitude: -83.20611

Name: BIRMINGHAM STANDARD
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM 48009-6423
Facility Type: CLOSED
Facility ID: 00001897
Owner Name: BIRMINGHAM STANDARD
Owner Address: 4215 YORBA LINDA BLVD
Owner City: ROYAL OAK
Owner State: MI
Owner Zip: 48073-6463
Owner Contact: Not reported
Owner Phone: 3136424888
Contact: J E WESTON
Contact Phone: (734) 953-7013
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 4000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: 04/11/1952
Remove Date: 11/22/1994
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.54671
Longitude: -83.20611

WDS:

Name: AMOCO OIL CO
Address: 1088 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MID985618065
WMD Id: 405686
Site Specific Name: AMOCO OIL CO 5349 BIRMINGHAM
Mailing Address: 30230 ORCHARD LAKE RD
Mailing City/State/Zip: 48334
Mailing County: OAKLAND

Map ID
Direction
Distance
Elevation

MAP FINDINGS

EDR ID Number
EPA ID Number

U82
SE
1/4-1/2
0.355 mi.
1872 ft.

912 OLD WOODWARD, LLC
912 SOUTH OLD WOODWARD AVENUE
BIRMINGHAM, MI 48009

INVENTORY
BEA
S116385989
N/A

Site 1 of 7 in cluster U

Relative:
Lower

INVENTORY:

Actual:
756 ft.

Name: 912 OLD WOODWARD, LLC
Address: 912 SOUTH OLD WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.5399
Longitude: -83.20821

BEA:

Name: 912 OLD WOODWARD, LLC
Address: 912 SOUTH OLD WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 03/07/2014
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63006025
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201405920LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2014-03-10 11:05:07
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: box 527
Organization: 912 Old Woodward, LLC
Contact: Jamie Antoniewicz
Contact Type: Submitter Contact

U83
SE
1/4-1/2
0.355 mi.
1872 ft.

912 SOUTH OLD WOODWARD
912 SOUTH OLD WOODWARD
BIRMINGHAM, MI 48009

US BROWNFIELDS
FINDS
1016603615
N/A

Site 2 of 7 in cluster U

Relative:
Lower

US BROWNFIELDS:

Actual:
756 ft.

Name: 912 SOUTH OLD WOODWARD
Address: 912 SOUTH OLD WOODWARD
City,State,Zip: BIRMINGHAM, MI 48009
Recipient Name: Oakland County Michigan
Grant Type: Assessment
Property Number: 08-19-36-279-004

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

912 SOUTH OLD WOODWARD (Continued)

1016603615

Parcel size: .11
Latitude: 42.539969
Longitude: -83.20807000000002
HCM Label: Address Matching-House Number
Map Scale: -
Point of Reference: Entrance Point of a Facility or Station
Highlights: Have build plan for over 90,000 of improvement to building. Including, but not limited to exterior improvements: tearing off all wood off building(deteriorated) and exposing brick, repairing all brick, add detail molding to exterior, new exterior signs and lighting, repair leaking roof. Including, but not limited to interior improvements: open up layout, add ADA compliant bathroom, new carpet, updated lighting, build to accommodate bridal business in the now vacant area and part of the kitchen showroom. Bridal store will take approximately 5,000 square feet and Kitchen showroom approximately 2100 square feet. Former Use: Standard and historical sources document the property was developed with the current building in 1927. Prior to that, the property was vacant land. The property was occupied by a plumber in at least 1931, a steel processing and heat treating company and a tool manufacturer in at least 1944, various automotive service garages from 1947 until 1967, and has been occupied by various offices since 1969.
Datum: North American Datum of 1983
Acres Property ID: 171161
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 4000
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Petroleum
Accomplishment Type: Phase II Environmental Assessment
Accomplishment Count: Y
Cooperative Agreement Number: 00E01208
Start Date: 02/14/2014
Ownership Entity: -
Completion Date: 02/28/2014
Current Owner: -
Did Owner Change: -
Cleanup Required: N
Video Available: N
Photo Available: Y
Institutional Controls Required: N
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

912 SOUTH OLD WOODWARD (Continued)

1016603615

IC in place:	N
State/tribal program date:	-
State/tribal program ID:	-
State/tribal NFA date:	-
Air cleaned:	-
Asbestos found:	-
Asbestos cleaned:	-
Controlled substance found:	-
Controlled substance cleaned:	-
Drinking water affected:	-
Drinking water cleaned:	-
Groundwater affected:	-
Groundwater cleaned:	-
Lead contaminant found:	-
Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	-
Other metals cleaned:	-
Other contaminants found:	-
Other contaminants found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.11
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	.11
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

912 SOUTH OLD WOODWARD (Continued)

1016603615

SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-
Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-
No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-
Future Use: Multistory	-
Media affected Bluiding Material:	-
Media affected indoor air:	-
Building material media cleaned up:	-
Indoor air media cleaned up:	-
Unknown media cleaned up:	-
Past Use: Multistory	Not reported
Property Description:	Standard and historical sources document the property was developed with the current building in 1927. Prior to that, the property was vacant land. The property was occupied by a plumber in at least 1931, a steel processing and heat treating company and a tool manufacturer in at least 1944, various automotive service garages from 1947 until 1967, and has been occupied by various offices since 1969.
Below Poverty Number:	83
Below Poverty Percent:	2.09
Meidan Income:	14933
Meidan Income Number:	305
Meidan Income Percent:	7.68
Vacant Housing Number:	142
Vacant Housing Percent:	6.81
Unemployed Number:	67
Unemployed Percent:	1.69
Name:	912 SOUTH OLD WOODWARD
Address:	912 SOUTH OLD WOODWARD
City,State,Zip:	BIRMINGHAM, MI 48009
Recipient Name:	Oakland County Michigan
Grant Type:	Assessment
Property Number:	08-19-36-279-004
Parcel size:	.11
Latitude:	42.539969
Longitude:	-83.20807000000002
HCM Label:	Address Matching-House Number
Map Scale:	-
Point of Reference:	Entrance Point of a Facility or Station
Highlights:	Have build plan for over 90,000 of improvement to building. Including, but not limited to exterior improvements: tearing off all wood off building(deteriorated) and exposing brick, repairing all brick, add detail molding to exterior, new exterior signs and lighting, repair leaking roof. Including, but not limited to interior improvements: open up layout, add ADA compliant bathroom, new carpet, updated lighting, build to accommodate bridal business in the now vacant area and part of the kitchen showroom. Bridal store will take

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

912 SOUTH OLD WOODWARD (Continued)

1016603615

approximately 5,000 square feet and Kitchen showroom approximately 2100 square feet. Former Use: Standard and historical sources document the property was developed with the current building in 1927. Prior to that, the property was vacant land. The property was occupied by a plumber in at least 1931, a steel processing and heat treating company and a tool manufacturer in at least 1944, various automotive service garages from 1947 until 1967, and has been occupied by various offices since 1969.

Datum: North American Datum of 1983
Acres Property ID: 171161
IC Data Access: -
Start Date: -
Redev Completion Date: -
Completed Date: -
Acres Cleaned Up: -
Cleanup Funding: -
Cleanup Funding Source: -
Assessment Funding: 4000
Assessment Funding Source: EPA
Redevelopment Funding: -
Redev. Funding Source: -
Redev. Funding Entity Name: -
Redevelopment Start Date: -
Assessment Funding Entity: US EPA - Brownfields Assessment Cooperative Agreement
Cleanup Funding Entity: -
Grant Type: Petroleum
Accomplishment Type: Phase II Environmental Assessment
Accomplishment Count: Y
Cooperative Agreement Number: 00E01208
Start Date: 02/14/2014
Ownership Entity: -
Completion Date: 02/28/2014
Current Owner: -
Did Owner Change: -
Cleanup Required: N
Video Available: N
Photo Available: Y
Institutional Controls Required: N
IC Category Proprietary Controls: -
IC Cat. Info. Devices: -
IC Cat. Gov. Controls: -
IC Cat. Enforcement Permit Tools: -
IC in place date: -
IC in place: N
State/tribal program date: -
State/tribal program ID: -
State/tribal NFA date: -
Air cleaned: -
Asbestos found: -
Asbestos cleaned: -
Controlled substance found: -
Controlled substance cleaned: -
Drinking water affected: -
Drinking water cleaned: -
Groundwater affected: -
Groundwater cleaned: -
Lead contaminant found: -

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

912 SOUTH OLD WOODWARD (Continued)

1016603615

Lead cleaned up:	-
No media affected:	Not reported
Unknown media affected:	-
Other cleaned up:	-
Other metals found:	-
Other metals cleaned:	-
Other contaminants found:	-
Other contams found description:	-
PAHs found:	-
PAHs cleaned up:	-
PCBs found:	-
PCBs cleaned up:	-
Petro products found:	-
Petro products cleaned:	-
Sediments found:	-
Sediments cleaned:	-
Soil affected:	Y
Soil cleaned up:	-
Surface water cleaned:	-
VOCs found:	Y
VOCs cleaned:	-
Cleanup other description:	-
Num. of cleanup and re-dev. jobs:	-
Past use greenspace acreage:	-
Past use residential acreage:	-
Surface Water:	-
Past use commercial acreage:	.11
Past use industrial acreage:	-
Future use greenspace acreage:	-
Future use residential acreage:	-
Future use commercial acreage:	.11
Future use industrial acreage:	-
Superfund Fed. landowner flag:	-
Arsenic cleaned up:	-
Cadmium cleaned up:	-
Chromium cleaned up:	-
Copper cleaned up:	-
Iron cleaned up:	-
mercury cleaned up:	-
Nickel Cleaned Up:	-
No clean up:	-
Pesticides cleaned up:	-
Selenium cleaned up:	-
SVOCs cleaned up:	-
Unknown clean up:	-
Arsenic contaminant found:	-
Cadmium contaminant found:	-
Chromium contaminant found:	-
Copper contaminant found:	-
Iron contaminant found:	-
Mercury contaminant found:	-
Nickel contaminant found:	-
No contaminant found:	-
Pesticides contaminant found:	-
Selenium contaminant found:	-
SVOCs contaminant found:	-
Unknown contaminant found:	-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

912 SOUTH OLD WOODWARD (Continued)

1016603615

Future Use: Multistory -
Media affected Bluiding Material: -
Media affected indoor air: -
Building material media cleaned up: -
Indoor air media cleaned up: -
Unknown media cleaned up: -
Past Use: Multistory Not reported
Property Description: Standard and historical sources document the property was developed with the current building in 1927. Prior to that, the property was vacant land. The property was occupied by a plumber in at least 1931, a steel processing and heat treating company and a tool manufacturer in at least 1944, various automotive service garages from 1947 until 1967, and has been occupied by various offices since 1969.

Below Poverty Number: 83
Below Poverty Percent: 2.09
Meidan Income: 14933
Meidan Income Number: 305
Meidan Income Percent: 7.68
Vacant Housing Number: 142
Vacant Housing Percent: 6.81
Unemployed Number: 67
Unemployed Percent: 1.69

FINDS:

Registry ID: 110059657697

Click Here:

Environmental Interest/Information System:

US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an federal online database for Brownfields Grantees to electronically submit data directly to EPA.

[Click this hyperlink](#) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**U84
SE
1/4-1/2
0.355 mi.
1872 ft.**

**912 OLD WOODWARD, LLC
912 SOUTH OLD WOODWARD AVENUE
OAKLAND (County), MI 48009**

**INVENTORY S116385988
N/A**

Site 3 of 7 in cluster U

**Relative:
Lower
Actual:
756 ft.**

INVENTORY:
Name: 912 OLD WOODWARD, LLC
Address: 912 SOUTH OLD WOODWARD AVENUE
City,State,Zip: MI 48009
Bea Number: 201405920LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: 42.5399
Longitude: -83.20821

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

T85
ENE
1/4-1/2
0.363 mi.
1917 ft.

MOBIL OIL CORP
1065 E MAPLE RD
BIRMINGHAM, MI 48009

Site 2 of 2 in cluster T

INVENTORY
AIRS
WDS

S111135724
N/A

Relative:
Lower

INVENTORY:

Actual:
765 ft.

Name: MAPLE GAS PROPERTY, LLC
Address: 1065 EAST MAPLE ROAD
City,State,Zip: MI 48009
Bea Number: 201606876LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

AIRS:

Name: MOBIL OIL CORPORATION
Address: 1065 E MAPLE ROAD
City,State,Zip: BIRMINGHAM, MI 48012
State Registration Number: N3990
Naics Code: Not reported
Contact Email: Not reported
Contact Name: MIGUEL FIGUEROA
Contact Phone: 3139485026
Contact Address: 30 OAK HOLLOW STREET
Contact Address 2: SUITE 245
Contact City,St,Zip: SOUTHFIELD, MI 48034
Permit Number: 592-93
Date Received: 07/26/1993
Application Reason: SOIL VAPOR EXTRACTION
Record Type: Not reported
State County FIPS: Not reported
Facility Category: Not reported
SIC Primary: Not reported
Tribal Code: Not reported
Facility Status Code: Not reported
Facility Status: Active
Supplemental Location Text: Not reported
Business Name: Not reported
Principal Product: Not reported
Principal Product Description: Not reported
UTM Zone (Geo Coordinates Universal Transverse Mercator System): Not reported
UTM Horizontal Coord: Not reported
UTM Vertical Coord: Not reported
Mailing Name: Not reported
Mailing Contact Person: Not reported
Mailing Street: Not reported
Mailing City: Not reported
Mailing State: Not reported
Mailing Zip: Not reported
Mailing Zip 4 Extension: Not reported
Compliance Person: Not reported
Compliance Area Code: Not reported
Compliance Phone Number: Not reported
Emission Inventory Contact Person: Not reported
EI Contact Area Code: Not reported
EI Contact Phone Number: Not reported

Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

MOBIL OIL CORP (Continued)

S111135724

Permit Contact Person: Not reported
Permit Contact Person Area Code: Not reported
Permit Contact Person Phone Number: Not reported
Federal Employer Id Number: Not reported
Of Employees: Not reported
Reporting Year: Not reported
Date Record Was Created: Not reported

WDS:

Name: MOBIL OIL CORP
Address: 1065 E MAPLE RD
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MID985610443
WMD Id: 404936
Site Specific Name: MOBIL OIL CORP
Mailing Address: 30 OAK HOLLOW ST
Mailing City/State/Zip: 4803
Mailing County: OAKLAND

U86
SE
1/4-1/2
0.372 mi.
1963 ft.

OFFICE BUILDING & PARLING LOT
1000 SOUTH OLD WOODWARD AVENUE
BIRMINGHAM, MI

BEA S110624681
N/A

Site 4 of 7 in cluster U

Relative:
Lower

Actual:
756 ft.

BEA:

Name: OFFICE BUILDING & PARLING LOT
Address: 1000 SOUTH OLD WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 4565
District: Southeast MI
Date Received: 08/18/2010
Submitter Name: Perimeter Properties, LLC
Petition Determination: No Request
Petition Disclosure: 0
Category: N
Determination 20107A: No Request
Reviewer: mitchelf
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

U87
SE
1/4-1/2
0.373 mi.
1968 ft.
FORMER BIRMINGHAM CLEANERS
1253 S. WOODWARD AVENUE
BIRMINGHAM, MI
Site 5 of 7 in cluster U

BEA **S127501022**
N/A

Relative:
Lower

BEA:

Actual:
756 ft.

Name: FORMER BIRMINGHAM CLEANERS
Address: 1253 S. WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 381
District: Southeast MI
Date Received: 07/03/1997
Submitter Name: SILK & MORGAN, INC.
Petition Determination: No Request
Petition Disclosure: 0
Category: N
Determination 20107A: No Request
Reviewer: temppm
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported
Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

U88
SE
1/4-1/2
0.373 mi.
1968 ft.
SILK AND MORGAN, INC.
1253 S. WOODWARD
BIRMINGHAM, MI
Site 6 of 7 in cluster U

BEA **S127501539**
N/A

Relative:
Lower

BEA:

Actual:
756 ft.

Name: SILK AND MORGAN, INC.
Address: 1253 S. WOODWARD
City,State,Zip: BIRMINGHAM, MI
Secondary Address: Not reported
BEA Number: 363
District: Southeast MI
Date Received: 06/17/1997
Submitter Name: MR. NORMAN SILK
Petition Determination: No Request
Petition Disclosure: 1
Category: N
Determination 20107A: No Request
Reviewer: mitchelf
Division Assigned: STD
Location ID: Not reported
Submittal Type: Not reported
Submittal Number: Not reported
Approval Status: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

SILK AND MORGAN, INC. (Continued)

S127501539

Workflow Status: Not reported
Date Submitted: Not reported
Date Completed: Not reported
Township: Not reported
Work Unit: Not reported
Comments: Not reported
Organization: Not reported
Contact: Not reported
Contact Type: Not reported

U89
SE
1/4-1/2
0.375 mi.
1978 ft.

WOODLINC/MICH LTD PARTNERSHIP
1050 S OLD WOODWARD AVE
BIRMINGHAM, MI 48009
Site 7 of 7 in cluster U

LUST **U003834711**
INVENTORY **N/A**

Relative:
Lower
Actual:
756 ft.

LUST:
Name: WOODLINC/MICH LTD PARTNERSHIP
Address: 1050 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00039226
Source: STATE OF MICHIGAN
Owner Name: Woodlinc/MichLtd Partnership
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Woodlinc/mich Ltd Partnership
Latitude: 42.54057
Longitude: -83.20848
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-1071-96
Release Date: 12/20/1996
Substance Released: Gasoline
Release Status: Open
Release Closed Date: Not reported

INVENTORY:
Name: WOODLINC/MICH LTD PARTNERSHIP
Address: 1050 S OLD WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

WOODLINC/MICH LTD PARTNERSHIP (Continued)

U003834711

District: Southeast MI
Data Source: Part 213
Latitude: 42.54058
Longitude: -83.20848

**90
SE
1/4-1/2
0.403 mi.
2127 ft.**

**QUARTON WOODWARD SERVICE
1599 S WOODWARD AVE
BIRMINGHAM, MI 48009**

**LUST
UST
AUL
INVENTORY
WDS**

**U000261883
N/A**

**Relative:
Lower
Actual:
755 ft.**

LUST:
Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009-
Facility ID: 00033030
Source: STATE OF MICHIGAN
Owner Name: MrAlex Fratarcongli
Owner Address: Not reported
Owner City,St,Zip: UNKNOWN, MI
Owner Contact: Not reported
Owner Phone: Not reported
Country: USA
District: Warren
Site Name: Quarton Woodward Service
Latitude: 42.53975
Longitude: -83.20728
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Regulatory Program: Not reported
Risk Condition: Not reported
Project Manager: Not reported
Senate District: Not reported
House District: Not reported
US Congressional District: Not reported

Leak Number: C-0328-97
Release Date: 05/19/1997
Substance Released: Gasoline
Release Status: Closed
Release Closed Date: 01/24/2019

UST:
Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-5128
Facility Type: CLOSED
Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGLI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 8
Capacity: 550
Tank Status: Removed from Ground
Substance: Used Oil
Install Date: Not reported
Remove Date: 05/21/1997
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53975
Longitude: -83.20728

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-5128
Facility Type: CLOSED
Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGELI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750
Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 7
Capacity: 550
Tank Status: Removed from Ground
Substance: Diesel

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Install Date:	Not reported
Remove Date:	05/21/1997
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.53975
Longitude:	-83.20728
Name:	QUARTON WOODWARD SERVICE
Address:	1599 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48009-5128
Facility Type:	CLOSED
Facility ID:	00033030
Owner Name:	MR ALEX FRATARCONGELI
Owner Address:	2507 W MAPLE RD
Owner City:	BLOOMFIELD HILLS
Owner State:	MI
Owner Zip:	48301-2750
Owner Contact:	Not reported
Owner Phone:	2486422882
Contact:	ALEX FRATERCZNGELI
Contact Phone:	(248) 642-2882
Date of Collection:	01/11/2001
Accuracy:	100
Horizontal Datum:	NAD83
Accuracy Value Unit:	FEET
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
District:	Region 1 - SE Michigan District Office
Tank ID:	6
Capacity:	550
Tank Status:	Removed from Ground
Substance:	Used Oil
Install Date:	Not reported
Remove Date:	05/21/1997
Tank Number:	Not reported
Tank Details Compartments:	Not reported
Tank Release Detection:	Not reported
Pipe Release Detection:	Not reported
Piping Material:	Not reported
Piping Type:	Not reported
Tank Construction:	Not reported
Impressed Device:	Not reported
Latitude:	42.53975
Longitude:	-83.20728
Name:	QUARTON WOODWARD SERVICE
Address:	1599 S WOODWARD AVE
City,State,Zip:	BIRMINGHAM 48009-5128
Facility Type:	CLOSED

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGELI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750
Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 5
Capacity: 6000
Tank Status: Removed from Ground
Substance: Diesel
Install Date: Not reported
Remove Date: 05/21/1997
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53975
Longitude: -83.20728

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-5128
Facility Type: CLOSED
Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGELI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750
Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 4
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 05/21/1997
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53975
Longitude: -83.20728

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-5128
Facility Type: CLOSED
Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGELI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750
Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 3
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 05/21/1997
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53975

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Longitude: -83.20728

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-5128
Facility Type: CLOSED
Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGELI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750
Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001
Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 2
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 05/21/1997
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53975
Longitude: -83.20728

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM 48009-5128
Facility Type: CLOSED
Facility ID: 00033030
Owner Name: MR ALEX FRATARCONGELI
Owner Address: 2507 W MAPLE RD
Owner City: BLOOMFIELD HILLS
Owner State: MI
Owner Zip: 48301-2750
Owner Contact: Not reported
Owner Phone: 2486422882
Contact: ALEX FRATERCZNGELI
Contact Phone: (248) 642-2882
Date of Collection: 01/11/2001

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Accuracy: 100
Horizontal Datum: NAD83
Accuracy Value Unit: FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
District: Region 1 - SE Michigan District Office
Tank ID: 1
Capacity: 6000
Tank Status: Removed from Ground
Substance: Gasoline
Install Date: Not reported
Remove Date: 05/21/1997
Tank Number: Not reported
Tank Details Compartments: Not reported
Tank Release Detection: Not reported
Pipe Release Detection: Not reported
Piping Material: Not reported
Piping Type: Not reported
Tank Construction: Not reported
Impressed Device: Not reported
Latitude: 42.53975
Longitude: -83.20728

AUL:

Name: QUARTON WOODWARD SERVICE FORMER
Address: 1599 SOUTH WOODWARD AVENUE
City,State,Zip: BIRMINGHAM, MI 48009
Status: Recorded
Site Name: Not reported
Property: On-Site
Land Use Restriction Type: RC
Program Type: Part 213
Program Support Assigned User: Nicholas Ekel
Program Support Assigned Date: 11/05/2018
Legal Description Of Property: Not reported
Based On The Deq Ref #: 11121316174
MDEQ Reference Number: RC-RRD-213-16-174
Property Or Description Restricted Area: Not reported
Lead Division: RRD
File Name Of Hyperlinked Legal Doc: U:\KERMIT\11121316174.PDF
Mapped Polygons Area In Acres: 0.3638000000000001
Mapped Polygons Area In Square Miles: 0.0005
Date Data Entry Started: 11/05/2018
Date Data Entry Finished: 11/05/2018
Individual Or Staff Assoc With The Mapping: Nicholas Ekel
Program Used To Map Restricted Features: ArcGIS 10.5
Date Legal Paperwork Stamped/Filed/Register Of Deeds: 06/22/2018
Commercial I Land Use Restriction: 0
Commercial Ii Land Use Restriction: 0
Commercial Iii Land Use Restriction: 0
Commercial Iv Land Use Restriction: 0
Industrial Land Use Restriction: 0
Residential Land Use Restriction: 1
Recreational Land Use Restriction: 0
Multiple Land-Use Restrictions: 0

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

QUARTON WOODWARD SERVICE (Continued)

U000261883

Site Specific Restrictions: 1
Groundwater Consumption Restrictions: 1
Groundwater Contact Restrictions: 0
Special Well Construction Requirements: 0
Special Building Restrictions: 1
Excavation And Soil Movement Restrictions: 0
Soil Movement Requirements: 0
There Is A Restriction On All Construction: 0
Monitoring Well Protected, No Tampering Or Removal: 0
There Is An Exposure Barrier In Place: 0
There Is A Health And Safety Plan: 0
There Is A Permanent Marker On The Site: 0

Comment: 20160919 - Reference number was requested by William Teasel of Service Environmental Engineerin, Inc. - Nick Ekel

Map Comments: 20181105 - LRUR is NOT mapped in KERMIT - Nick Ekel 20181105 - LRUR is mapped in KERMIT - Nick Ekel

INVENTORY:

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.53976
Longitude: -83.20729

WDS:

Name: QUARTON WOODWARD SERVICE
Address: 1599 S WOODWARD AVE
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIR000022970
WMD Id: 411471
Site Specific Name: QUARTON WOODWARD SVC
Mailing Address: 2507 W MAPLE RD
Mailing City/State/Zip: 48322
Mailing County: OAKLAND

V91
SE
1/4-1/2
0.410 mi.
2163 ft.

**908 S. ADAMS, LLC
908 SOUTH ADAMS ROAD
OAKLAND (County), MI 48009**
Site 1 of 2 in cluster V

**INVENTORY S121186637
N/A**

**Relative:
Lower
Actual:
754 ft.**

INVENTORY:

Name: 908 S. ADAMS, LLC
Address: 908 SOUTH ADAMS ROAD
City,State,Zip: MI 480097038
Bea Number: 201707813LV
Township: Birmingham
District: Southeast MI
Data Source: BEA
Latitude: Not reported
Longitude: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

V92
SE
1/4-1/2
0.410 mi.
2163 ft.
908 SOUTH ADAMS ROAD
908 SOUTH ADAMS ROAD
OAKLAND (County), MI 48009
Site 2 of 2 in cluster V

BEA **S127500711**
N/A

Relative:
Lower

BEA:

Actual:
754 ft.

Name: 908 SOUTH ADAMS ROAD
Address: 908 SOUTH ADAMS ROAD
City,State,Zip: MI 48009
Secondary Address: Not reported
BEA Number: Not reported
District: Not reported
Date Received: 08/31/2017
Submitter Name: Not reported
Petition Determination: Not reported
Petition Disclosure: Not reported
Category: Not reported
Determination 20107A: Not reported
Reviewer: Not reported
Division Assigned: Not reported
Location ID: 63501200
Submittal Type: Baseline Environmental Assessment
Submittal Number: B201707813LV
Approval Status: RRD Received
Workflow Status: Submitted
Date Submitted: 2017-09-08 12:37:26
Date Completed: Not reported
Township: Birmingham
Work Unit: Warren
Comments: BEA Report submitted on CD.
Organization: 908 S. Adams, LLC
Contact: ATC Group Services, LLC
Contact Type: Submitter Contact

93
NNW
1/4-1/2
0.445 mi.
2350 ft.
GHEEN RESIDENCE
272 RAVINE ROAD
BIRMINGHAM, MI 48009

INVENTORY **S117057927**
WDS **N/A**

Relative:
Lower

INVENTORY:

Actual:
758 ft.

Name: GHEEN RESIDENCE
Address: 272 RAVINE ROAD
City,State,Zip: BIRMINGHAM, MI 48009
Bea Number: Not reported
Township: Birmingham
District: Southeast MI
Data Source: Part 201
Latitude: 42.55063
Longitude: -83.21524

WDS:

Name: ERIC GHEEN
Address: 272 RAVINE RD
City,State,Zip: BIRMINGHAM, MI 48009
Site Id: MIK407668698
WMD Id: 493758
Site Specific Name: LOCAL HOME CLEANUP

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

GHEEN RESIDENCE (Continued)

S117057927

Mailing Address: 272 RAVINE RD
Mailing City/State/Zip: 48009
Mailing County: OAKLAND

Count: 4 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BLOOMFIELD HILLS	1026592737	EVART MOTORS COMPANY	1400 N. WOODWARD AVE, SUITE 25	48304	PRP
BLOOMFIELD HILLS	1026567987	ANDERSON SAFEWAY CORP	1533 N WOODWARD STE 240 BARRY	48304	PRP
BLOOMFIELD HILLSS	1026588115	DIAMLER-CHRYSLER CORPORATION	3400 WOODWARD AVE HOWARD & HOW	48304	PRP
ROYAL OAK	S125337879		WOODWARD AVE FOURTEEN MILE	48073	CDL

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/29/2021	Source: EPA
Date Data Arrived at EDR: 08/04/2021	Telephone: N/A
Date Made Active in Reports: 08/31/2021	Last EDR Contact: 09/01/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 10/11/2021
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 07/29/2021	Source: EPA
Date Data Arrived at EDR: 08/04/2021	Telephone: N/A
Date Made Active in Reports: 08/31/2021	Last EDR Contact: 09/01/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 10/11/2021
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: N/A
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/30/2021
Date Made Active in Reports: 06/17/2021
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 06/23/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/29/2021	Source: EPA
Date Data Arrived at EDR: 08/04/2021	Telephone: 800-424-9346
Date Made Active in Reports: 08/31/2021	Last EDR Contact: 09/01/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 10/25/2021
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/22/2021	Source: EPA
Date Data Arrived at EDR: 03/23/2021	Telephone: 800-424-9346
Date Made Active in Reports: 05/19/2021	Last EDR Contact: 06/21/2021
Number of Days to Update: 57	Next Scheduled EDR Contact: 10/04/2021
	Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/22/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/23/2021	Telephone: 312-886-6186
Date Made Active in Reports: 05/19/2021	Last EDR Contact: 06/21/2021
Number of Days to Update: 57	Next Scheduled EDR Contact: 10/04/2021
	Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/22/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/23/2021	Telephone: 312-886-6186
Date Made Active in Reports: 05/19/2021	Last EDR Contact: 06/21/2021
Number of Days to Update: 57	Next Scheduled EDR Contact: 10/04/2021
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/22/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/23/2021	Telephone: 312-886-6186
Date Made Active in Reports: 05/19/2021	Last EDR Contact: 06/21/2021
Number of Days to Update: 57	Next Scheduled EDR Contact: 10/04/2021
	Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/22/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/23/2021	Telephone: 312-886-6186
Date Made Active in Reports: 05/19/2021	Last EDR Contact: 06/21/2021
Number of Days to Update: 57	Next Scheduled EDR Contact: 10/04/2021
	Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/10/2021	Source: Department of the Navy
Date Data Arrived at EDR: 05/13/2021	Telephone: 843-820-7326
Date Made Active in Reports: 08/03/2021	Last EDR Contact: 08/05/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 11/22/2021
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/17/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/21/2021	Telephone: 703-603-0695
Date Made Active in Reports: 08/11/2021	Last EDR Contact: 08/23/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 12/06/2021
	Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/17/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/21/2021	Telephone: 703-603-0695
Date Made Active in Reports: 08/11/2021	Last EDR Contact: 08/23/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 12/06/2021
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/14/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 61

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/31/2013
Date Made Active in Reports: 11/20/2013
Number of Days to Update: 20

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-284-5103
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facilities Database

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/23/2021
Date Data Arrived at EDR: 03/24/2021
Date Made Active in Reports: 06/15/2021
Number of Days to Update: 83

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-335-4035
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Sites

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/12/2021
Date Made Active in Reports: 07/02/2021
Number of Days to Update: 51

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-373-9837
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

State and tribal registered storage tank lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/29/2021	Source: FEMA
Date Data Arrived at EDR: 02/17/2021	Telephone: 202-646-5797
Date Made Active in Reports: 03/22/2021	Last EDR Contact: 06/29/2021
Number of Days to Update: 33	Next Scheduled EDR Contact: 10/18/2021
	Data Release Frequency: Varies

UST: Underground Storage Tank Facility List

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 04/26/2021	Source: Department of Licensing & Regulatory Affairs
Date Data Arrived at EDR: 05/11/2021	Telephone: 517-373-1820
Date Made Active in Reports: 07/29/2021	Last EDR Contact: 08/13/2021
Number of Days to Update: 79	Next Scheduled EDR Contact: 11/22/2021
	Data Release Frequency: Annually

UST 2: Underground Storage Tank Listing

A listing of underground storage tank site locations that have unknown owner information.

Date of Government Version: 04/09/2021	Source: Department of Licensing & Regulatory Affairs
Date Data Arrived at EDR: 04/16/2021	Telephone: 517-373-1820
Date Made Active in Reports: 07/07/2021	Last EDR Contact: 07/21/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 10/25/2021
	Data Release Frequency: Varies

AST: Aboveground Tanks

Registered Aboveground Storage Tanks.

Date of Government Version: 05/25/2021	Source: Department of Licensing & Regulatory Affairs
Date Data Arrived at EDR: 05/26/2021	Telephone: 517-373-1820
Date Made Active in Reports: 08/11/2021	Last EDR Contact: 08/05/2021
Number of Days to Update: 77	Next Scheduled EDR Contact: 11/22/2021
	Data Release Frequency: No Update Planned

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/02/2020	Source: EPA Region 4
Date Data Arrived at EDR: 12/18/2020	Telephone: 404-562-9424
Date Made Active in Reports: 03/12/2021	Last EDR Contact: 06/17/2021
Number of Days to Update: 84	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/27/2021	Source: EPA Region 8
Date Data Arrived at EDR: 06/11/2021	Telephone: 303-312-6137
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 06/01/2021	Source: EPA Region 7
Date Data Arrived at EDR: 06/11/2021	Telephone: 913-551-7003
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/28/2021	Source: EPA, Region 1
Date Data Arrived at EDR: 06/11/2021	Telephone: 617-918-1313
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/27/2021	Source: EPA Region 10
Date Data Arrived at EDR: 06/11/2021	Telephone: 206-553-2857
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/27/2021	Source: EPA Region 9
Date Data Arrived at EDR: 06/11/2021	Telephone: 415-972-3368
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/06/2021	Source: EPA Region 5
Date Data Arrived at EDR: 06/11/2021	Telephone: 312-886-6136
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/17/2021	Source: EPA Region 6
Date Data Arrived at EDR: 06/11/2021	Telephone: 214-665-7591
Date Made Active in Reports: 09/07/2021	Last EDR Contact: 06/11/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

State and tribal institutional control / engineering control registries

AUL: Engineering and Institutional Controls

A listing of sites with institutional and/or engineering controls in place.

Date of Government Version: 05/21/2021

Date Data Arrived at EDR: 05/24/2021

Date Made Active in Reports: 08/11/2021

Number of Days to Update: 79

Source: Department of Environment, Great Lakes, and Energy

Telephone: 517-373-4828

Last EDR Contact: 08/17/2021

Next Scheduled EDR Contact: 12/06/2021

Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008

Date Data Arrived at EDR: 04/22/2008

Date Made Active in Reports: 05/19/2008

Number of Days to Update: 27

Source: EPA, Region 7

Telephone: 913-551-7365

Last EDR Contact: 07/08/2021

Next Scheduled EDR Contact: 07/20/2009

Data Release Frequency: No Update Planned

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015

Date Data Arrived at EDR: 09/29/2015

Date Made Active in Reports: 02/18/2016

Number of Days to Update: 142

Source: EPA, Region 1

Telephone: 617-918-1102

Last EDR Contact: 06/15/2021

Next Scheduled EDR Contact: 10/04/2021

Data Release Frequency: No Update Planned

State and tribal Brownfields sites

BROWNFIELDS: Brownfields and USTfield Site Database

All state funded Part 201 and 213 sites, as well as LUST sites that have been redeveloped by private entities using the BEA process. Be aware that this is not a list of all of the potential brownfield sites in Michigan.

Date of Government Version: 01/15/2016

Date Data Arrived at EDR: 02/02/2016

Date Made Active in Reports: 04/04/2016

Number of Days to Update: 62

Source: Department of Environment, Great Lakes, and Energy

Telephone: 517-373-4805

Last EDR Contact: 07/14/2021

Next Scheduled EDR Contact: 11/01/2021

Data Release Frequency: Varies

BROWNFIELDS 2: Brownfields Building and Land Site Locations

A listing of brownfield building and land site locations. The listing is a collaborative effort of Michigan Economic Development Corporation, Michigan Economic Developers Association, Detroit Edison, Detroit Area Commercial Board of Realtors

Date of Government Version: 04/19/2021

Date Data Arrived at EDR: 04/21/2021

Date Made Active in Reports: 07/09/2021

Number of Days to Update: 79

Source: Economic Development Corporation

Telephone: 888-522-0103

Last EDR Contact: 07/19/2021

Next Scheduled EDR Contact: 11/01/2021

Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/10/2021
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF: Inactive Solid Waste Facilities

The database contains historical information and is no longer updated.

Date of Government Version: 03/01/1997
Date Data Arrived at EDR: 02/28/2003
Date Made Active in Reports: 03/06/2003
Number of Days to Update: 6

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-335-4034
Last EDR Contact: 02/28/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycling Facilities

A listing of recycling center locations.

Date of Government Version: 06/08/2021
Date Data Arrived at EDR: 06/09/2021
Date Made Active in Reports: 09/01/2021
Number of Days to Update: 84

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-241-5719
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Services, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

INVENTORY: Inventory of Facilities

The Inventory of Facilities has three data sources: Facilities under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) identified through state funded or private party response activities (Projects); Facilities under Part 213, Leaking Underground Storage Tanks of the NREPA; and Facilities identified through submittals of Baseline Environmental Assessments (BEA) submitted pursuant to Part 201 or Part 213 of the NREPA. The Part 201 Projects Inventory does not include all of the facilities that are subject to regulation under Part 201 because owners are not required to inform the Department of Environmental Quality (DEQ) about the facilities and can pursue cleanup independently. Facilities that are not known to DEQ are not on the Inventory, nor are locations with releases that resulted in low environmental impact. Part 213 facilities listed here may have more than one release; a list of releases for which corrective actions have been completed and list of releases for which corrective action has not been completed is located on the Leaking Underground Storage Tanks Site Search webpage. The DEQ may or may not have reviewed and concurred with the conclusion that the corrective actions described in a closure report meets criteria. A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

Date of Government Version: 01/20/2021
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 84

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-284-5136
Last EDR Contact: 07/22/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

PART 201: Part 201 Site List

A Part 201 Listed site is a location that has been evaluated and scored by the DEQ using the Part 201 scoring model. The location is or includes a "facility" as defined by Part 201, where there has been a release of a hazardous substance(s) in excess of the Part 201 residential criteria, and/or where corrective actions have not been completed under Part 201 to meet the applicable cleanup criteria for unrestricted residential use. The Part 201 List does not include all of the sites of contamination that are subject to regulation under Part 201 because owners are not required to inform the DEQ about the sites and can pursue cleanup independently. Sites of environmental contamination that are not known to DEQ are not on the list, nor are sites with releases that resulted in low environmental impact.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/03/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 0

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-284-5103
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab locations.

Date of Government Version: 01/04/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 79

Source: Department of Community Health
Telephone: 517-373-3740
Last EDR Contact: 07/14/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DEL PART 201: Delisted List of Contaminated Sites

A deleted site has been removed from the Part 201 List because information known to the DEQ at the time of the evaluation does not support inclusion on the Part 201 List. This designation is often applied to sites where changes in cleanup criteria resulted in a determination that the site no longer exceeds any applicable cleanup criterion.

A delisted site has been removed from the Part 201 List because response actions have reduced the levels of contaminants to concentrations which meet or are below the criteria for unrestricted residential use.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 09/11/2013
Number of Days to Update: 41

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-373-9541
Last EDR Contact: 07/22/2019
Next Scheduled EDR Contact: 11/04/2019
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Quarterly

PFAS: PFAS Contaminated Sites Listing

PFAS have been widely used in numerous industrial and residential applications since the 1950s. Their stability and unique chemical properties produce waterproof, stain resistant, and nonstick qualities in products. They are found in some firefighting foams and a wide range of consumer products such as carpet treatments, non-stick cookware, water-resistant fabrics, food packaging materials, and personal care products.

Date of Government Version: 05/05/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/29/2021
Number of Days to Update: 79

Source: Department of Environment, Great Lakes & Energy
Telephone: 517-284-9278
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

Local Land Records

LIENS: Lien List

An Environmental Lien is a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 USC * 9607(1) and similar state or local laws. In other words: a lien placed upon a property's title due to an environmental condition

Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 10/17/2019
Date Made Active in Reports: 12/11/2019
Number of Days to Update: 55

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-241-7603
Last EDR Contact: 07/16/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/24/2021
Date Made Active in Reports: 06/17/2021
Number of Days to Update: 85

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

PEAS: Pollution Emergency Alerting System

Environmental pollution emergencies reported to the Department of Environmental Quality such as tanker accidents, pipeline breaks, and release of reportable quantities of hazardous substances.

Date of Government Version: 03/28/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/08/2021
Number of Days to Update: 79

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-373-8427
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/04/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 85

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018	Source: U.S. Geological Survey
Date Data Arrived at EDR: 04/11/2018	Telephone: 888-275-8747
Date Made Active in Reports: 11/06/2019	Last EDR Contact: 07/09/2021
Number of Days to Update: 574	Next Scheduled EDR Contact: 10/18/2021
	Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 08/06/2021
Number of Days to Update: 63	Next Scheduled EDR Contact: 11/22/2021
	Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/22/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/23/2021	Telephone: 202-566-1917
Date Made Active in Reports: 06/17/2021	Last EDR Contact: 06/21/2021
Number of Days to Update: 86	Next Scheduled EDR Contact: 10/04/2021
	Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 07/26/2021
Number of Days to Update: 88	Next Scheduled EDR Contact: 11/15/2021
	Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/08/2018	Telephone: 703-308-4044
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 08/06/2021
Number of Days to Update: 73	Next Scheduled EDR Contact: 11/15/2021
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016	Source: EPA
Date Data Arrived at EDR: 06/17/2020	Telephone: 202-260-5521
Date Made Active in Reports: 09/10/2020	Last EDR Contact: 06/17/2021
Number of Days to Update: 85	Next Scheduled EDR Contact: 09/27/2021
	Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018	Source: EPA
Date Data Arrived at EDR: 08/14/2020	Telephone: 202-566-0250
Date Made Active in Reports: 11/04/2020	Last EDR Contact: 08/17/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 11/29/2021
	Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 04/19/2021	Source: EPA
Date Data Arrived at EDR: 04/20/2021	Telephone: 202-564-4203
Date Made Active in Reports: 07/16/2021	Last EDR Contact: 07/19/2021
Number of Days to Update: 87	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 07/29/2021	Source: EPA
Date Data Arrived at EDR: 08/04/2021	Telephone: 703-416-0223
Date Made Active in Reports: 08/31/2021	Last EDR Contact: 09/01/2021
Number of Days to Update: 27	Next Scheduled EDR Contact: 12/13/2021
	Data Release Frequency: Annually

RMP: Risk Management Plans

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/07/2021	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/13/2021	Telephone: 202-564-8600
Date Made Active in Reports: 08/03/2021	Last EDR Contact: 07/14/2021
Number of Days to Update: 82	Next Scheduled EDR Contact: 11/01/2021
	Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 12/30/2020	Source: EPA
Date Data Arrived at EDR: 01/14/2021	Telephone: 202-564-6023
Date Made Active in Reports: 03/05/2021	Last EDR Contact: 09/01/2021
Number of Days to Update: 50	Next Scheduled EDR Contact: 11/15/2021
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/19/2020	Source: EPA
Date Data Arrived at EDR: 01/08/2021	Telephone: 202-566-0500
Date Made Active in Reports: 03/22/2021	Last EDR Contact: 07/09/2021
Number of Days to Update: 73	Next Scheduled EDR Contact: 10/18/2021
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 06/29/2021
Number of Days to Update: 79	Next Scheduled EDR Contact: 10/18/2021
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/11/2021
Date Made Active in Reports: 05/11/2021
Number of Days to Update: 61

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/14/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 09/03/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: No Update Planned

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transportation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/23/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 07/16/2021
Number of Days to Update: 2

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/02/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Biennially

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/02/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/23/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/12/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 08/31/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: No Update Planned

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: No Update Planned

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2021
Date Data Arrived at EDR: 05/25/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 78

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/24/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 05/27/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 14

Source: DOL, Mine Safety & Health Admini
Telephone: 202-693-9424
Last EDR Contact: 08/25/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 62

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/05/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 91

Source: EPA
Telephone: (312) 353-2000
Last EDR Contact: 08/31/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/04/2021
Date Data Arrived at EDR: 04/06/2021
Date Made Active in Reports: 06/25/2021
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/07/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 81

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

AIRS: Permit and Emissions Inventory Data

Permit and emissions inventory data.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/17/2021
Date Data Arrived at EDR: 03/18/2021
Date Made Active in Reports: 06/08/2021
Number of Days to Update: 82

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-373-7074
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Annually

ASBESTOS: Asbestos Notification Listing Asbestos

Date of Government Version: 05/31/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 21

Source: Department of Licensing & Regulatory Affairs
Telephone: 517-284-7699
Last EDR Contact: 08/03/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

BEA: Baseline Environmental Assessment Database

A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

Date of Government Version: 05/11/2021
Date Data Arrived at EDR: 05/13/2021
Date Made Active in Reports: 08/10/2021
Number of Days to Update: 89

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-373-9541
Last EDR Contact: 08/05/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: No Update Planned

COAL ASH: Coal Ash Disposal Sites

Coal fired power plants in Southeast Michigan that have coal ash handling on site.

Date of Government Version: 04/01/2021
Date Data Arrived at EDR: 04/06/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 79

Source: Department of Environment, Great Lakes, and Energy
Telephone: 586-753-3754
Last EDR Contact: 07/07/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

DRYCLEANERS: Drycleaning Establishments

A listing of drycleaning facilities in Michigan.

Date of Government Version: 01/07/2021
Date Data Arrived at EDR: 01/13/2021
Date Made Active in Reports: 04/01/2021
Number of Days to Update: 78

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-335-4586
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 10/24/2021
Data Release Frequency: Quarterly

Financial Assurance 1: Financial Assurance Information Listing

Financial assurance information.

Date of Government Version: 04/05/2021
Date Data Arrived at EDR: 04/07/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 78

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-335-6610
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Semi-Annually

FINANCIAL ASSURANCE 3: Financial Assurance Information Listing

Financial assurance information for underground storage tank facilities.

Date of Government Version: 03/29/2021
Date Data Arrived at EDR: 04/13/2021
Date Made Active in Reports: 06/25/2021
Number of Days to Update: 73

Source: Department of Licensing & Regulatory Affairs
Telephone: 517-335-7279
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 06/17/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 06/22/2021
Number of Days to Update: 5

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-335-4034
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

LEAD CERT: Lead Safe Housing Registry

A listing of Michigan properties included in the Lead Safe Housing Registry.

Date of Government Version: 03/25/2020
Date Data Arrived at EDR: 03/25/2020
Date Made Active in Reports: 06/15/2020
Number of Days to Update: 82

Source: Department of Community Health
Telephone: 517-335-9699
Last EDR Contact: 08/25/2021
Next Scheduled EDR Contact: 12/13/2021
Data Release Frequency: Quarterly

NPDES: List of Active NPDES Permits

General information regarding NPDES (National Pollutant Discharge Elimination System) permits and NPDES Storm Water permits.

Date of Government Version: 10/22/2020
Date Data Arrived at EDR: 12/23/2020
Date Made Active in Reports: 03/16/2021
Number of Days to Update: 83

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-241-1300
Last EDR Contact: 07/02/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

UIC: Underground Injection Wells Database

A listing of underground injection well locations. The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.

Date of Government Version: 07/14/2021
Date Data Arrived at EDR: 07/19/2021
Date Made Active in Reports: 09/03/2021
Number of Days to Update: 46

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-241-1515
Last EDR Contact: 07/14/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

WDS: Waste Data System

The Waste Data System (WDS) tracks activities at facilities regulated by the Solid Waste, Scrap Tire, Hazardous Waste, and Liquid Industrial Waste programs.

Date of Government Version: 03/30/2021
Date Data Arrived at EDR: 03/31/2021
Date Made Active in Reports: 06/22/2021
Number of Days to Update: 83

Source: Department of Environment, Great Lakes, and Energy
Telephone: 517-284-6562
Last EDR Contact: 08/11/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

MINES MRDS: Mineral Resources Data System Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 08/26/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA PART 201: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environment, Great Lakes, and Energy
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Environment, Great Lakes, and Energy
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environment, Great Lakes, and Energy
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 03/24/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/28/2021
Number of Days to Update: 78

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/29/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/07/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/11/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/01/2021
Next Scheduled EDR Contact: 12/20/2021
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: Endeavor Business Media

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data

Source: Endeavor Business Media

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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Centers, Group & Family Homes

Source: Bureau of REgulatory Services

Telephone: 517-373-8300

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory

Source: Department of Natural Resources

Telephone: 517-241-2254

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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Appendix E

PM PROFESSIONAL RESUMES

DEVON NAGENGAST

STAFF CONSULTANT

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Devon Nagengast is a Staff Consultant at PM Environmental, Inc. She specializes in Environmental Due Diligence by managing Phase I Environmental Site Assessments throughout the Midwest.

AREAS OF EXPERTISE

- Staff consultant for Phase I Environmental Site Assessments (ESAs)
- Assists with data collection and evaluation for Transaction Screen Assessments, Phase I ESAs and other due diligence reports
- History of biological surveying strengthens site assessment skills
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527)



EDUCATION

- Oakland University
B.S. Environmental Science,
concentration in Sustainability and
Resource Management

LAUREN BABUSKA

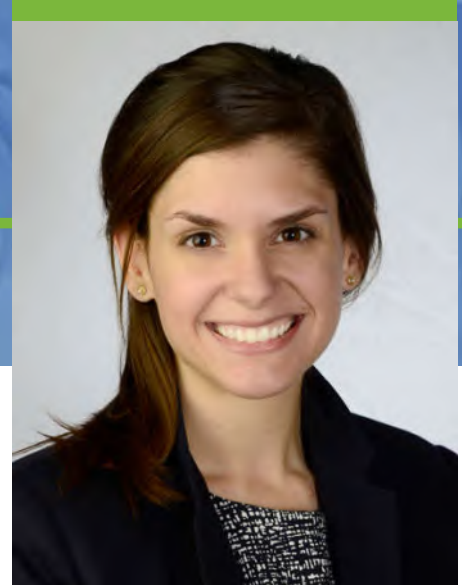
PROJECT CONSULTANT

1.800.313.2966 www.pmenv.com babuska@pmenv.com

Lauren Babuska is a Project Consultant at PM Environmental, Inc. and has served clients in multiple states since 2014. She specializes in Environmental Due Diligence including Phase I Environmental Site Assessments and customized environmental assessments to support all forms of real estate transactions.

AREAS OF EXPERTISE

- Project consultant for Phase I Environmental Site Assessments (ESAs)
- Assist with site investigation for Phase I ESAs
- Assist with data collection and evaluation for Transaction Screen Assessments, Phase I ESAs and other due diligence reports
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527)
- Peer Technical Review of Phase I ESAs and other due diligence reports using ASTM Standard 1527



EDUCATION

- University of Michigan
B.S. Geological Sciences

CERTIFICATIONS

- Meets the definition of Environmental Professional as defined in 312.10 of 40 CFR 312

BETH SEXTON

CHIEF OPERATING OFFICER

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Beth Sexton is the Chief Operating Officer for PM Environmental, Inc. Sexton has over a decade of experience performing environmental due diligence on a variety of properties for financial institutions and borrowers, retail chains, industrial conglomerates, and real estate developers. She specializes in Environmental Due Diligence, portfolio management, mergers and acquisitions, and transactional real estate and development. Sexton is the national client manager for numerous Fortune 100 financial institutions, retail chains, industrial conglomerates, and real estate developers.

She has managed multiple large scale commercial, retail, and industrial redevelopments involving multiple service lines within the company. Sexton has presented on national panels within the environmental industry on topics such as Environmental Due Diligence and corporate management.

AREAS OF EXPERTISE

- Corporate oversight of all departments within PM
- Strategic development and implementation of multiple service line teams to support major redevelopments and complex mergers and acquisitions, utilizing all of the PM service lines
- Strategic development, implementation, training, and launches of multiple service line teams to develop Environmental Risk Management programs for lending institutions and Fortune 1000 real estate intensive industries including retail, logistics, multifamily housing, petroleum, utilizing all of the PM service lines
- Data collection, site investigation, and preparation of Phase I Environmental Site Assessment (ESA) and related due diligence projects
- Senior technical review of due diligence related projects
- Quality assurance/quality control oversight for report documents
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527, ASTM E-1528)
- Phase II ESAs and site investigation projects, Baseline Environmental Assessments (BEAs), continuing obligations, and due care projects
- Limited bulk asbestos containing materials samples
- Peer/senior technical review of thousands of Phase I and Phase II ESAs
- Peer/senior technical review for numerous BEAs and due care plans in accordance with P.A. 451



EDUCATION

- Michigan State University
B.A. International Relations
Specialization: Environmental Economics
- University of Michigan Masters of Science Resource Policy and Behavior
- EGLE Cleanup Criteria Training
- ASTM Phase I and Phase II Processes Training
- Zweig White Principals Academy

CERTIFICATIONS

- Meets the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312

PROFESSIONAL ACTIVITIES

- Environmental Bankers Association
- Former CREW Network Board Liaison for CREW Detroit Outreach

AWARDS

- 2018 DBusiness 30 in Their Thirties

Appendix F

COMMON ACRONYMS AND TERMINOLOGY USED IN THE COURSE OF THIS PHASE I ESA

The following is a list of common acronyms:

All Appropriate Inquiry	AAI
Asbestos Containing Materials	ACM
Aboveground Storage Tank	AST
American Society for Testing Materials	ASTM
Approximate Minimum Search Distance	ASMD
Comprehensive Environmental Response, Compensation and Liability Act	CERCLA
Environmental Data Resources	EDR
Environmental Site Assessment	ESA
Federal Emergency Response Notification System	FERNIS
Large Quantity Generator	LQG
Leaking Underground Storage Tank	LUST
National Priority List	NPL
No Further Remedial Action Planned	NFRAP
PM Environmental, Inc.	PME
Polychlorinated Biphenyls	PCBs
Resource Conservation and Recovery Act	RCRA
Small Quantity Generator	SQG
Treatment Storage and Disposal Facility	TSD
Underground Storage Tank	UST
United States Environmental Protection Agency	USEPA

TERMINOLOGY

The following provides definitions and descriptions of certain terms that may be used in this report. Several terms are defined by ASTM Standard Practice E 1527. The Standard Practice should be referenced for further detail (such as the precise wording), related definitions, or additional explanation regarding the meaning of terms.

Asbestos containing material (ACM): Any material found to contain greater than 1% asbestos using an analytical method that is approved by the USEPA for asbestos analysis.

De minimis conditions: Conditions that generally do not present a material risk or harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Friable material: Defined in the National Emission Standards for Hazardous Air Pollutants (NESHAP) as a material that can be pulverized or reduced to dust using hand pressure only.

General risk of enforcement action: The likelihood that an environmental condition would be subject to enforcement action if brought to the attention of appropriate governmental agencies. If the circumstances suggest an enforcement action would be more likely than not, then the condition is considered a general risk of enforcement action.

Historical recognized environmental condition (HREC): Environmental condition which in the past would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently. The final decision rests

with the environmental professional and will be influenced by the current impact of the historical recognized environmental condition on the subject property. If a past release of any hazardous substances or petroleum products has occurred in connection with the subject property, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered a historical recognized environmental condition.

Non-friable material: Defined by National Emission Standards for Hazardous Air Pollutants (NESHAP) as a material that cannot be pulverized or reduced to dust using hand pressure only. According to NESHAP, non-friable building materials include those in Category I (packings, gaskets, resilient floor coverings/adhesives, and asphalt roofing materials) and those in Category II (all other materials).

Recognized environmental condition (REC): The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the subject property or into the ground, ground water, or surface water of the subject property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Subject property: The area that is the focus of a Phase I Environmental Site Assessment. The boundaries are not necessarily consistent with recorded legal descriptions of real estate, and are defined by the User.

Suspect ACM of concern: Defined as “(I) all friable suspect ACMs (II) any non-friable suspect ACMs expected to be disturbed by renovation or demolition activities planned for the subject property.”

General Scope of Services for Phase I ESA

The purpose of the Phase I ESA is to gather sufficient information to develop an independent professional opinion about the environmental condition of the subject property. The ESA will be conducted in an attempt to satisfy the ASTM Standard (E-1527-13) and the U.S. EPA Standards and Practices for All Appropriate Inquiry as defined in the Small Business Liability Relief and Brownfields Revitalization Act. The Phase I ESA will encompass the following scope of work:

Records Review

- Federal and State database search for sites within the ASTM approximate minimum search distances.
- Review of one or more additional state environmental record sources (e.g., fire department, health department, published local or state site contamination lists, etc.). PM is typically exhaustive in inquiry with these resources.
- Utilization of as many of the ASTM standard historical sources as necessary and as reasonably ascertainable and likely to be useful to document all obvious uses of the subject property from the present, back to the subject property's first developed usage (agricultural or the placement of fill) or 1940, whichever is earlier (e.g., aerial photographs, fire insurance maps, topographic maps, street directories, building record and other sources including knowledgeable interviewees). PM is typically exhaustive in usage of these resources to document subject property historical usages. **Chain of title is not typically consulted by PM unless all other standard and historical sources cannot adequately document subject property usages or if required by a lender. A separate fee to the lump sum quoted will be assessed for obtainment of chain of title.**
- A records review in accordance with the requirements for a Vapor Intrusion Assessment per ASTM E-2600-08 is not included in this scope of work.

Site Reconnaissance

- The objective of the site reconnaissance is to obtain information regarding the likelihood of recognized environmental conditions in connection with the subject property.
- The exterior of the subject property and any structures, as well as, pathways, roads, etc., will be visually and physically observed.
- The interior of the structures on the subject property will be visually and physically observed. This includes all common areas, maintenance and repair rooms, boiler rooms and representative number of occupant spaces. Observations under floors, above ceilings or behind walls are not required unless specified by requirements other than the ASTM standard.
- PM will evaluate non-ASTM scope issues with a visual inspection, and comment on asbestos containing building materials, lead based paint, and water intrusion associated with mold. Sampling is not included within this scope of work, but can be completed under a separate proposal.
- Current and past uses of the subject property and adjoining properties, and general uses of surrounding properties, to the extent visually and physically observed will be recorded. Emphasis is placed on subject property or adjoining property usages involving use, treatment, storage, disposal or generation of hazardous substances or petroleum products. These observations may include process details on raw material and waste management practices.
- General description of structures and improvements on the subject property (number and age of buildings, ancillary structures, utilities, storage tanks, hazardous substance and petroleum product usage, general chemical or raw material usage, heating and cooling, stains, solid waste, waste water, etc.).

Interviews with Owners and Occupants

- Interviews with owners, occupants, key site manager and user (person on behalf Phase I ESA conducted), typically with regard to information about current and historical uses, general site setting information, site specific documents, litigation, administrative orders, notices of violations with regard to environmental issues, etc.

Interviews with Local Government Officials

- A reasonable attempt will be made to interview at least one staff member of any of the following: the local fire department, the local agency or state agency having jurisdiction over environmental matters in the area in which the subject property is located, and/or the local health department. PM is typically exhaustive in its inquiry of these sources, unless professional experience has indicated the resource is not beneficial.

Evaluation and Report Preparation

- The report of the Phase I ESA findings will generally follow the ASTM format unless otherwise requested by the client or as outlined in any applicable lender requirements. The report will include documentation of sources, methodology, limitations, and credentials. *Liability/risk evaluations, recommendations for Phase II ESA testing and remediation techniques are not provided within the scope of an ASTM performed assessment.* Phase I ESA reports are kept in the strictest client confidence and are issued directly to the client. Issuance or reliance on the Phase I ESA report for purposes of making loan decisions by a private lender may be included in the Phase I ESA report if specified by the client.

USER'S CONTINUING OBLIGATIONS UNDER CERCLA

Conducting a Phase I ESA alone does not provide a landowner with protection against CERCLA liability. Landowners who want to maintain a bona Fide Prospective Purchaser, an Innocent Landowner, or a Contiguous Property Owner Defense must also comply with other pre-acquisition and post-acquisition requirements in the CERCLA regulations and AAI standards. The responsibilities for each defense are summarized below.

Bona Fide Prospective Purchaser Responsibilities

The Bona Fide Prospective Purchaser defense is intended for individuals or entities purchasing a property known to be contaminated. To obtain and maintain the defense, the individual or entity seeking the defense must also satisfy the following requirements (AAI, Section II D.1.):

- Have acquired a property after all disposal activities involving hazardous substances ceased at the property;
- Provide all legally required notices with respect to the discovery or release of any hazardous substances at the property;
- Exercise appropriate care by taking reasonable steps to stop continuing releases, prevent any threatened future releases, and prevent or limit human, environmental, or natural resources exposure to any previously released hazardous substance;
- Provide full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restorations;
- Comply with land use restrictions established or relied on in connection with a response action;
- Not impede the effectiveness or integrity of any institutional controls;
- Comply with any CERCLA request for information or administrative subpoena; and
- Not be potentially liable, or affiliated with any other person who is potentially liable for response costs for addressing releases at the property.

Innocent Landowner Responsibilities

The Innocent Landowner Defense protects individuals or entities (ultimately the "property owner") purchasing a property that is not known to be contaminated. The property owner must also satisfy the following requirements to obtain and maintain the defense (AAI, Section II D.3 and CERCLA Section 107(b)(3)):

- Have no reason to know that any hazardous substance which is the subject of a release of threatened release was disposed of on, in, or at the facility;
- Provide full cooperation, assistance and access to persons authorized to conduct response actions at the property;
- Comply with any land use restrictions and not impeding the effectiveness or integrity of any institutional controls;

- Take reasonable steps to stop continuing releases, prevent any threatened release, and prevent to limit human, environmental, or natural resource exposure to any hazardous substances released on or from the landowner's property;
- Demonstrate that the act or omission that caused the release or threat of release of hazardous substances and the resulting damages were caused by the third party with whom the person does not have employment, agency, or contractual relationship;
- Exercise due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances;
- Take precautions against foreseeable acts or omissions of a third party and the consequences that could result from such acts or omissions.

Contiguous Property Owner Defense

The Contiguous Property Owner Defense protects individuals or entities purchasing a property that is not known to be contaminated, but could be contaminated by migration from a contiguous property owned by someone else. To qualify as a contiguous property owner, a landowner must have no knowledge of contamination prior to acquisition, or reason to know of contamination at the time of acquisition, have conducted AAI, and meet all of the criteria set forth in AAI Section II.D.2 and CERCLA Section 107(q)(1)(A), which include:

- Not cause, contribute, or consent to the release or threatened release;
- Not be potentially liable nor affiliated with any other person potentially liable for response costs at the property;
- Take reasonable steps to stop continuing releases, prevent any threatened release, and prevent or limit human, environmental, or natural resource exposure to any hazardous substances released on or from the landowner's property;
- Provide full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restorations;
- Comply with land use restrictions established or relied on in connection with a response action;
- Not impede the effectiveness or integrity of any institutional controls;
- Comply with any CERCLA request for information or administrative subpoena;
- Provide all legally required notices with respect to discovery or release of any hazardous substances at the property.

Persons who know, or have reason to know, that the property is or could be contaminated at the time of acquisition of a property cannot qualify for the liability protection as a contiguous property owner, but may be entitled to Bona Fide Prospective Purchaser status.

Section 3.6

Geotechnical Investigation

SOILS INVESTIGATION
PROPOSED FOUR TO FIVE-STORY BUILDING
OLD WOODWARD AVENUE AND BROWN STREET
BIRMINGHAM, MICHIGAN

BOJI GROUP
255 SOUTH OLD WOODWARD AVENUE
SUITE 130
BIRMINGHAM, MICHIGAN 48009

NOVEMBER 19, 2021
BY
McDOWELL & ASSOCIATES

McDowell & Associates

Geotechnical, Environmental & Hydrogeological Services • Materials Testing & Inspection

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November 19, 2021

Revised: February 18, 2022

Boji Group
255 South Old Woodward Avenue
Suite 310
Birmingham, Michigan 48009

Job No. 21-385

Attention: Mr. Brent Lubin

Subject: Soils Investigation
Proposed Four to Five-Story Building
Old Woodward Avenue and Brown Street
Birmingham, Michigan

Dear Mr. Lubin:

In accordance with your request, we have made a Soils Investigation at the subject project.

Field Work and Laboratory Testing

Four Soil Test Borings, designated as 1 through 4, were performed at the subject property at the approximate locations shown on the Soil Boring Location Plan which accompanies this report. The boring locations and depths were selected by the client and field located by our drillers. The borings were each advanced to a depth of about thirty five feet (35') below the existing ground surface at the boring locations.

Soil descriptions, groundwater observations and the results of field and laboratory tests are to be found on the accompanying Logs of Soil Test Borings and summary sheet of Sieve Analysis results.

The borings encountered three feet two inches (3'2") to four feet seven inches (4'7") of fill soils generally consisting of a few inches of surficial topsoil or asphalt followed by sand or firm to stiff clay. The underlying apparent native soils generally consisted of firm to extremely stiff silty or silty sandy clay. Boring 3 encountered areas of apparent native medium compact to extremely compact sand below depths of three feet three inches (3'3") and thirteen feet eight inches (13'8").

Soil descriptions and depths shown on the boring logs are approximate indications of change from one soil type to another and are not intended to represent an area of exact geologic change or stratification. Also, the site shows some signs of modification which could indicate fill and soil conditions different from those encountered at the boring locations.

Groundwater was encountered in Borings 1, 3 and 4 at initial depths ranging from two feet two inches (2'2") to twenty nine feet six inches (29'6") below the existing ground surface. Upon completion of drilling, the groundwater level in Boring 3 was recorded at three feet (3') below the

existing ground surface. Groundwater was not encountered in Boring 2 and Borings 1 and 4 were dry upon completion of drilling. It should be noted that short-term groundwater observations may not provide a reliable indication of the depth of the water table. In clay soils, this is due to the slow rate of infiltration of water into the borehole as well as the potential for water to become trapped in overlying layers of granular soils during periods of heavy rainfall. It should be expected that groundwater fluctuations could occur on a seasonal basis and that seams of water-bearing sands or silts could be found within the various clay strata at the site.

Standard Penetration Tests (SPTs) made during the sampling operation indicate that the relatively shallow site soils have variable strengths and densities while the deeper site soils generally have very good strengths and densities. The tests at a depth of two feet six inches (2'6") resulted in penetration indices ranging from 6 to 9 blows per foot. The five foot (5') test values varied from 5 to 12 blows per foot. At a depth of seven feet six inches (7'6") and below, penetration indices ranged from 12 to 34 blows per foot. It should be noted that an automatic hammer was used for all SPTs. Considering our drilling equipment and procedures, it has been seen that blow counts with an automatic hammer should be increased by a factor of about 1.4 to be comparable with typical blow counts using a safety hammer.

Project Description

It is understood that existing buildings on the site will be demolished to construct a new four or five-story, mixed-use building with a basement at the subject property. It is further understood that the basement footings will extend roughly twelve feet (12') below the existing ground surface. It is anticipated that the proposed structure will transmit moderate loads to the supporting soils. Once proposed foundation loads are available, it is suggested that you have us review the foundation loads to determine their potential effects on the recommendations listed below.

Foundation Recommendations

Based on the project information provided and the results of field and laboratory tests, the indications are that the structure could be supported by conventional to deeper than normal spread or strip footings. All exterior footings should be constructed at, or below, a minimum frost penetration depth of three feet six inches (3'6") below finished grade. All interior and exterior load-bearing footings should extend through non-engineered fill soils, soils containing significant amounts of organic substances, or excessively weak soils. All strip footings should be continuously reinforced in order to minimize any noticeable effects of differential settlement.

If the basement excavation is to be performed with sloped banks, adequate and stable slopes must be provided. Pertinent OSHA requirements must be followed and adequate protection for workers must be provided. Also, extreme care must be taken to avoid undermining existing buildings, utilities and pavements with the basement excavation. Based on the size of the proposed structure and the limited size of the site, it is expected that a temporary earth retention system (TERS) may be required to facilitate the basement excavation. A TERS analysis and design is beyond the scope of this report but could be performed upon request.

Footings constructed at the following boring locations could be proportioned for the design soil pressures shown below, provided this results in the footings bearing on native, non-organic soils:

<u>Boring</u>	<u>Depth</u>	<u>Soil Pressure (psf)</u>
1	3'3" to 6'0"	2,000
	6'0" to 13'0"	5,000
2	4'7" to 7'0"	2,000
	7'0" to 13'0"	4,500
3	5'8" to 7'0"	3,000
	7'0" to 13'0"	5,000
4	3'2" to 13'0"	5,000

Depending on the proposed foundation loads, higher design soil pressures may be available at various depths in the borings and could be detailed, if desired.

Seismic Site Class

Based on the limited data obtained from the borings, we recommend considering a seismic site class of D at the subject site. This recommendation was developed in accordance with ASCE 7-16 (Table 20.3-1).

Engineered Fill

As an alternative to deeper than normal footings where fill is present, the building spread or strip footings could be supported on engineered fill. All existing non-engineered fill, organic soils, soft soils and loose granular soils should be excavated and removed from the proposed foundation area. The excavations should extend beyond the edge of the structure's proposed footings six inches (6") for every foot below the footing. The removal of the unsuitable soils should be done in the presence of a qualified soils engineer or technician to limit the potential for uncontrolled fill or highly organic soils being left behind before the placement of engineered fill. After the unsuitable soils have been removed, the excavation should preferably be filled with compacted bank run sand similar to MDOT Type I or II granular soils. If clay material is utilized, it should be placed within 3% of its optimum moisture content. If the bottom of the excavation is not sufficiently stable to install the fill material, then a layer of coarse stone fill such as MDOT 6AA or 1x3 crushed stone could be installed. Geotextile fabric should be placed between the coarse stone engineered fill material and lower native granular soils to minimize the amount of fines infiltrating into the aggregate material. If granular material is to be placed above the stone, a six inch (6") layer of MDOT 21AA or an additional layer of filter fabric should be placed above the stone, overlapping the underlying fabric to further minimize the amount of material infiltrating into the aggregate material. The fill soils should be deposited in horizontal lifts not to exceed nine inches (9") in thickness with each lift being compacted uniformly to a minimum density of 95% of its maximum value as determined by the Modified Proctor Test (ASTM D-1557).

Foundations placed on the engineered fill could be proportioned for a design soil pressure of 3,000 psf provided the strength is not limited by the presence of weaker underlying materials. Engineered fill should be placed and compacted up to footing and floor invert elevations.

Groundwater Considerations

Based on the indications from the borings, the basement excavation should be in primarily clay type soils. What appears to be perched water in limited areas of sand type soils was encountered in Borings 3 and 4 at respective depths of four feet two inches (4'2") and two feet two inches (2'2"). Also, it should be noted that the basement footing might be close to the saturated granular soils encountered below thirteen feet eight inches (13'8") in Boring 3. Water seepage from perched water or from wet sand or silt seams is not expected to be a major issue and should be manageable with construction pumping and sumps. However, this is not known for certain. If large volumes of water or saturated granular soils are encountered, special dewatering techniques may be required. Care must be taken to minimize the removal of soil fines during any pumping operations. If standing water remains on the clay type footing invert soils for an extended period of time, it may result in a couple inches of "slop" material at the footing invert. This material should be removed prior to the placement of concrete.

The basement should be provided with an adequate drainage system to protect the floor and walls from the possible effects of hydrostatic pressure. The drainage system should be designed and installed to minimize the potential for soil fines to erode into the underdrainage system. For any basement constructed in close proximity to the water table in granular soils we suggest a drainage system including interior and exterior drains with the following specifications:

1. In order to lessen the possibility of soil fines affecting the perimeter drain system, it is recommended that exterior footing drains be at least four-inch (4") diameter slotted or perforated pipe with maximum 1/16" slot openings; larger openings would require a filter sock. We also suggest surrounding the drain tiles with at least four inches (4") of MDOT Specification 2NS sand. The 2NS sand would preferably be extended vertically over the drain to within about one foot (1') to two feet (2') of the final grade. The 2NS sand against the basement wall should be maintained at a width of at least twelve inches (12") measured perpendicular to the walls and footings.
2. Interior underfloor drains should be provided and should be nominally four inch (4") diameter slotted or perforated pipe. These should be placed at ten foot (10') to twenty foot (20') centers and along the inside of the footings. A filter fabric such as a punched, non-woven geotextile similar to Mirafi 140 should completely cover the basement subgrade and extend several inches up the sides of the footing. A minimum of eight inches (8") of coarse material such as pea stone or MDOT 6A stone should be placed over the fabric. Cleanouts should be provided for all of the drains. A good moisture barrier should be placed between the floor slab and the stone.

3. Note that crushed concrete materials are not desirable since they occasionally clog/plug drain tiles and ruin sump pumps.
4. The interior and exterior drain tiles should be independently connected to the sump so that if one fails the other can continue to operate.
5. A backup power supply should be provided in case of power outages.

Floor Slabs

Fill soils were encountered in the borings to depths ranging from three feet two inches (3'2") to four feet seven inches (4'7") below the existing ground surface. If the possibility of more than normal differential settlement can be tolerated, slab-on-grade floors or floor-supporting backfill could be placed at, or near, the present grade in the vicinity of the borings. Any existing topsoil, asphalt or other obviously objectionable materials should be removed and the subgrade should then be thoroughly proof-compacted. If, during the proof-compaction operation, areas are found where the soils yield excessively, the yielding materials should be scarified, dried, and recompact or removed and replaced with engineered fill meeting the specifications outline above.

If the possibility of more than normal differential movement cannot be tolerated, then all existing fill and organic soils should be removed and replaced with engineered fill meeting the requirements outlined above, or the floor slab should be structurally supported.

All existing structures should be entirely removed from the proposed building area. Buried utilities should be removed or grouted in place. Resulting excavations should be backfilled with engineered fill meeting the requirements outlined above.

To minimize capillary action under floor slabs, we suggest placing at least four inches (4") of clean material on the subgrade followed by a suitable plastic vapor barrier between the clean material and the concrete slab. The clean material could consist of pea stone, MDOT Class I sand, 2NS sand or 6AA crushed stone.

Lateral Earth Pressure

If plans call for the basement walls to be rigidly fixed at the top, then the walls should be designed on the basis of "at rest" earth pressure conditions. An equivalent fluid pressure of 55 psf per foot of depth could be used if adequate drainage and free draining granular backfill are provided behind the walls. If the walls are not restrained at the top, "active" earth pressure can be used for design. On this basis, equivalent fluid pressures of 40 psf per foot of depth should be used if adequate drainage and free draining granular backfill are provided. Recognize that some movement of the below-grade soils is needed before the active pressure develops. Generally, the amount of movement required to activate "active" conditions is approximately equal to 0.002 times the height of the wall. The fill placed against below-grade walls should consist of granular soils with less than 7% passing the #200 Sieve. If free draining soil and adequate drainage are not provided, the accumulation of hydrostatic pressures should be accounted for. We suggest that an equivalent fluid pressure of 85 psf per foot of depth be considered for the "active" case and 100 psf per foot of wall height be considered for the "at rest" case. It should be

noted that surcharge loads applied behind walls can impose additional lateral pressures on the walls. If the basement walls are subjected to such surcharge loading, it should be considered in the wall design. Furthermore, only small compactors should be utilized during fill placement adjacent to walls to prevent wall movement or damage during construction. A design passive earth pressure of 150 psf per foot of depth could be used for well compacted or native soils. This passive pressure assumes a factor of safety of 1.5. A coefficient of sliding between concrete and the soils at the site would be on the order of 0.3. It is recommended that provisions be made to allow water to drain from behind the walls to prevent the build-up of hydrostatic water pressure.

Closing

Experience indicates that actual subsurface conditions at the site could vary from those found at the four test borings made at specific locations. It is, therefore, essential that McDowell & Associates be notified of any variation of soil conditions to determine their effects on the recommendations presented in this report. The evaluations and recommendations presented in this report have been formulated on the basis of reported or assumed data relating to the proposed project. Any significant change in the final design plans should be brought to our attention for review and evaluation with respect to the prevailing subsoil conditions.

It is recommended that the services of McDowell & Associates be engaged to observe the soils in the footing excavations prior to concreting in order to test the soils for the required bearing capacities. Testing should also be performed to check that suitable materials are being used for controlled fills and that they are properly placed and compacted.

If we can be of any further service, please feel free to call.

Very truly yours,

McDOWELL & ASSOCIATES



David Quintal, M.S., P.E.
Geotechnical Engineer



Robert McDowell, M.S., P.E.
CEO McDowell & Associates

DQ/



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LOG OF SOIL

BORING NO. 1
Soils Investigation -
PROJECT Four- to Five-Story Building

JOB NO. 21-385

LOCATION Old Woodward Avenue and Brown Street

SURFACE ELEV. _____ DATE 11-11-21

Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'3"						
	1		Moist black sandy TOPSOIL, fill						
			1'3"						
A	2		Moist brown SAND with gravel, fill						
SS			Stiff moist dark brown silty sandy CLAY with trace of topsoil, occasional pebbles and sand Layers, fill	5					
	3			4	8.1				
			3'3"	4					
	4								
B			Firm moist variegated silty sandy CLAY with pebbles	2					
SS	5			2	19.1				
			5'9"	3			*	(3000)	
	6								
C	7		Very stiff moist brown silty sandy CLAY with pebbles	4					
SS				7	14.7				
	8			11			*	(9000+)	
	9								
D			9'0"	6					
SS	10			11					
			Extremely stiff moist brown blue silty sandy CLAY with pebbles	23					
	11								
	12								
			12'5"						
	13								
	14								
E				4					
SS	15			6	14.8				
				9			*	(4500)	
	16								
	17								
	18								
	19		Very stiff moist blue silty sandy CLAY with pebbles						
F				4					
SS	20			5					
				9					
	21								
	22								
	23								
	24								
G				5					
SS	25			7	13.8				
				10			*	(5700)	

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS: *Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals




GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT 29 FT. 6 INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION None FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Light



McDOWELL & ASSOCIATES
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Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF SOIL BORING NO. 1 (continued)
PROJECT Soils Investigation - Four- to Five-Story Building
LOCATION Old Woodward Avenue and Brown Street
SURFACE ELEV. _____ **DATE** 11-11-21 Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %	
	26		Very stiff moist blue silty sandy CLAY with pebbles							
	27									
	28									
	29					3				
H			Very stiff to extremely stiff moist blue silty sandy CLAY with pebbles and wet gray silt lens at 29'6"	7						
SS	30			10						
	31									
	32									
	33									
	34									
I										
SS	35					4				
						8				
	36					11				
			Note: Used automatic hammer.							
	37									
	38									
	39									
	40									
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
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R.C. - ROCK CORE
() - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT 29 FT. 6 INS.
G.W. ENCOUNTERED AT FT. INS.
G.W. AFTER COMPLETION None FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Light



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LOG OF SOIL

BORING NO. 2
Soils Investigation -
PROJECT Four- to Five-Story Building

JOB NO. 21-385

LOCATION Old Woodward Avenue and Brown Street

SURFACE ELEV. _____ DATE 11-11-21

Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'3"						
	1		Moist black sandy TOPSOIL, fill						
			Moist brown SAND with gravel, fill						
A	2		1'6"	2					
SS				4	26.7				
	3		Stiff moist brown and dark brown silty CLAY with traces of pebbles and topsoil and broken concrete and brick, fill	8					
	4								
B			4'7"	2					
SS	5			2	16.9				
	6		Firm moist variegated silty sandy CLAY with pebbles	3			*	(4000)	
			6'0"						
C	7			3					
SS				5	15.4				
	8		Very stiff moist variegated silty sandy CLAY with pebbles	7			*	(6000)	
	9								
D			9'0"	3					
SS	10			7					
				10					
	11		Very stiff moist brown silty sandy CLAY with pebbles						
	12								
			12'5"						
	13								
	14								
E				3					
SS	15			4	14.1				
				8			*	(4500)	
	16		Stiff to very stiff moist blue silty sandy CLAY with pebbles						
	17								
	18								
	19								
F			19'0"	4					
SS	20			8					
				12					
	21								
	22		Extremely stiff moist blue silty sandy CLAY with trace of gravel and occasional gray sand lens						
	23								
	24								
G			24'0"	4					
SS	25			6					
			Very stiff moist blue silty sandy CLAY with pebbles	8					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS: *Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL BORING NO. 2 (continued)
PROJECT Soils Investigation - Four- to Five-Story Building
LOCATION Old Woodward Avenue and Brown Street
SURFACE ELEV. _____ DATE 11-11-21 Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	26		Very stiff moist blue silty sandy CLAY with pebbles						
	27								
	28								
	29			4					
H	30			5	14.3		*	(4500)	
SS	30			8					
	31								
	32								
	33								
	34								
I	35		35'6"	3					
SS	35			5					
	36			8					
	37								
	38								
	39								
	40								
	41								
	42								
	43								
	44								
	45								
	46								
	47								
	48								
	49								
	50								

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS: *Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL

BORING NO. 3
Soils Investigation -
PROJECT Four- to Five-Story Building

JOB NO. 21-385

LOCATION Old Woodward Avenue and Brown Street

SURFACE ELEV. _____ DATE 11-11-21

Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'3" ASPHALT						
	1		0'10" Moist brown SAND with gravel, base fill						
A	2		Stiff moist dark brown silty CLAY with black streaks and vegetation, fill	2					
SS	3			3	19.4				
	4		3'3" Medium compact moist greenish-brown clayey SAND (possible swamp bottom)						
B	5		4'2" Compact wet brown silty fine SAND with occasional brown silty clay seams	2					
SS	6			4	24.6				
	7		5'8" Stiff moist variegated silty sandy CLAY with pebbles	7					
C	8								
SS	9		7'0" Extremely stiff moist brown silty sandy CLAY with pebbles	4					
	10			8	15.9				
	11			16			*	(7500)	
D	12		9'3" Very stiff moist brown to blue silty sandy CLAY with pebbles						
SS	13			5					
	14			9	13.5				
	15			13			*	(7500)	
E	16		13'8" Extremely compact wet gray occasionally clayey SAND with gravel						
SS	17			9					
	18			9					
	19			11					
	20		17'0" Extremely stiff to very stiff moist blue silty sandy CLAY with pebbles						
F	21								
SS	22			8					
	23			9					
	24			10					
G	25								
SS				4	13.9				
				7			*	(3500)	
				10					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS: *Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT 4 FT. 2 INS.
G.W. ENCOUNTERED AT 13 FT. 8 INS.
G.W. AFTER COMPLETION 13 FT. 4 INS.
G.W. AFTER 1½ HRS. 3 FT. 0 INS.
G.W. VOLUMES Heavy



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LOG OF SOIL BORING NO. 3 (continued)
PROJECT Soils Investigation - Four- to Five-Story Building
LOCATION Old Woodward Avenue and Brown Street
SURFACE ELEV. _____ DATE 11-11-21 Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	26		Extremely stiff to very stiff moist blue silty sandy CLAY with pebbles						
	27								
	28								
	29			5					
H	30			7					
SS	30			9					
	31								
	32								
	33								
	34								
I	35		35'6"	6					
SS	35			7					
	36			8					
	37								
	38								
	39								
	40								
	41								
	42								
	43								
	44								
	45								
	46								
	47								
	48								
	49								
	50								

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT 4 FT. 2 INS.
G.W. ENCOUNTERED AT 13 FT. 8 INS.
G.W. AFTER COMPLETION 13 FT. 4 INS.
G.W. AFTER 1½ HRS. 3 FT. 0 INS.
G.W. VOLUMES Heavy



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LOG OF SOIL

BORING NO. 4
Soils Investigation -
PROJECT Four- to Five-Story Building

JOB NO. 21-385

LOCATION Old Woodward Avenue and Brown Street

SURFACE ELEV. _____ DATE 11-11-21

Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
			0'4½" ASPHALT						
	1		0'10" Moist brown SAND with gravel, base fill						
A	2		← Firm moist brown silty CLAY with trace of topsoil, fill	1					
SS	3		← 2'2" Compact wet brown silty fine SAND, fill	2	16.7				
	4		← 3'2"	4					
B	5		Very stiff moist variegated silty sandy CLAY with pebbles	3					
SS	6			5	15.8				
	7			7			*	(9000+)	
C	8		6'6" Extremely stiff moist brown silty sandy CLAY with pebbles and wet brown sand seams	4					
SS	9			9	13.8				
	10			13			*	(6000)	
D	11		9'0" Extremely stiff moist brown to blue silty sandy CLAY with pebbles	4					
SS	12			9					
	13			13					
	14		13'5" Extremely stiff moist brown to blue silty sandy CLAY with pebbles						
E	15			4					
SS	16			8	16.0				
	17			9			*	(4500)	
	18								
	19		Very stiff moist blue silty sandy CLAY with pebbles						
F	20			3					
SS	21			6					
	22			11					
	23								
	24								
G	25			3					
SS				6					
				9					

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS: *Calibrated Penetrometer

Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT 2 FT. 2 INS.
G.W. ENCOUNTERED AT 7 FT. 9 INS.
G.W. AFTER COMPLETION None FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Light



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LOG OF SOIL BORING NO. 4 (continued)
PROJECT Soils Investigation - Four- to Five-Story Building
LOCATION Old Woodward Avenue and Brown Street
SURFACE ELEV. _____ DATE 11-11-21 Birmingham, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Natural Wt. P.C.F.	Dry Den Wt. P.C.F.	Unc. Comp. Strength PSF.	Str. %
	26		Very stiff moist blue silty sandy CLAY with pebbles						
	27								
	28								
	29			3					
H	30			5	14.7		*	(3500)	
SS	31			7					
	32								
	33								
	34								
I	35			3					
SS	36		35'6"	6					
	37			7					
	38								
	39								
	40								
	41								
	42								
	43								
	44								
	45								
	46								
	47								
	48								
	49								
	50								

TYPE OF SAMPLE
D. - DISTURBED
U.L. - UNDIST. LINER
S.T. - SHELBY TUBE
S.S. - SPLIT SPOON
R.C. - ROCK CORE
() - PENETROMETER

REMARKS: *Calibrated Penetrometer

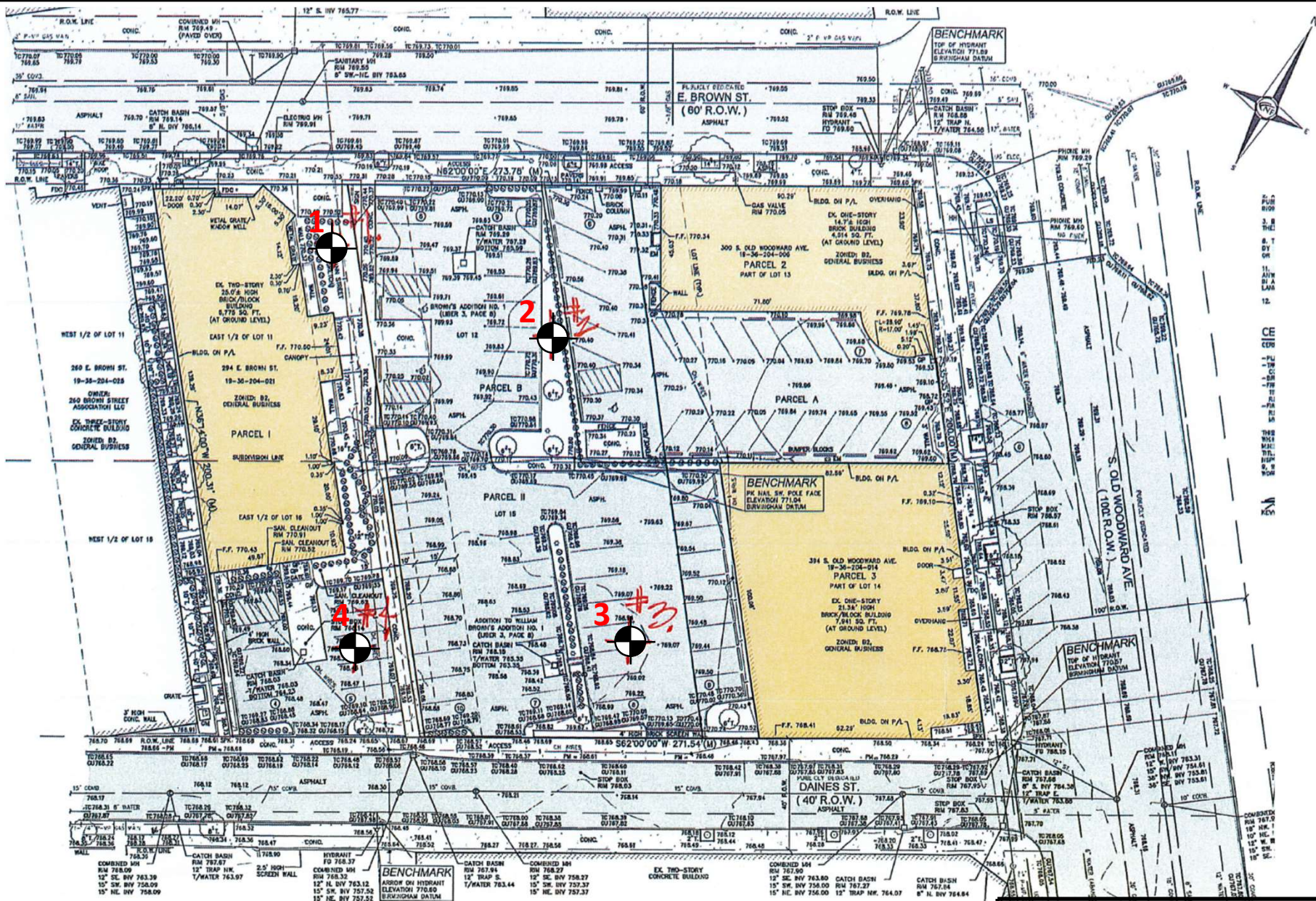
Standard Penetration Test - Driving 2" OD Sampler 1' With
140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT 2 FT. 2 INS.
G.W. ENCOUNTERED AT 7 FT. 9 INS.
G.W. AFTER COMPLETION None FT. INS.
G.W. AFTER HRS. FT. INS.
G.W. VOLUMES Light

SIEVE ANALYSIS

Boring	Sample	% Passing #4 Sieve	% Passing #10 Sieve	% Passing #40 Sieve	% Passing #100 Sieve	% Passing #200 Sieve
3	B	100.0	100.0	99.8	95.7	30.5
4	A	99.5	99.0	93.8	45.1	23.5



Note: Base drawing prepared by others.

LEGEND



Soil Boring Locations, 1 through 4:
Drilled by McDowell & Associates



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Ferndale, Michigan 48220
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Fax: (248) 399-2157

Soil Boring Location Plan
Job No. 21-385

Section 3.7

Air Quality Information



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

AIR QUALITY ANNUAL REPORT

2020



Michigan Department of Environment, Great Lakes, and Energy
Michigan.gov/EGLE | 800-662-9278

Air Quality Annual Report

2020

EXECUTIVE SUMMARY

This report gives an overview of the air quality for 2020. Current data for Michigan can be found on Mlair (deqmiair.org) and Air Quality alerts can be delivered directly to email by signing up for the Michigan EnviroFlash program (<http://miair.enviroflash.info/>). Data in this report are collected by the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and the environment.

The six pollutants monitored by EGLE, Air Quality Division (AQD) are:

1. Carbon monoxide (CO)
2. Lead (Pb)
3. Nitrogen dioxide (NO₂)
4. Ozone (O₃)
5. Particulate matter smaller than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively)
6. Sulfur dioxide (SO₂)

EGLE has established a network of more than 40 monitoring sites throughout the state that monitor for one or more of the criteria pollutants (Figure 1.1 and Table 1.2).

Congress passed the CAA in 1970; however, Michigan has had a long-standing history of environmental awareness well before the Act was established. In 1887, Detroit was the first city in Michigan to adopt an air quality ordinance, which declared that the dense smoke from burning coal was a public nuisance.

The USEPA reviews the criteria pollutant standards every five years. Over time, based upon health data, the standards have been tightened to better protect public health (see Appendix C). Areas that meet the NAAQS are considered in “attainment.” Locations where air pollution levels persistently exceed the NAAQS may be designated as “nonattainment.” The tightening standards are why some areas in the state may be designated to nonattainment from attainment even though monitoring shows that air quality continues to improve.

Since EGLE began monitoring in the early 1970s, criteria pollutant levels have continually decreased (see Chap. 2-7). The air is much cleaner today than when the CAA began. The entire state of Michigan is in attainment for CO, Pb, NO₂, and particulate matter. Although portions of the state are in nonattainment for SO₂ and O₃, as illustrated in the figure, levels of these pollutants are still decreasing. The NAAQS levels have also decreased recently, which prompted these nonattainment areas. EGLE is currently working on State Implementation Plans (SIPs) to reduce pollutants further and bring the entire state into attainment for SO₂ and ozone.

Several changes to the monitoring network occurred during 2020.

- The TSPs were shut down at Allen Park and Grand Rapids since they were no longer required for NCore sites (Chap. 7).
- Several changes were made to the PM_{2.5} network, exchanging Federal Reference Method (FRM) manual filter-based monitors and/or non-regulatory continuous monitors for continuous, federal equivalent method (FEM) monitors due to funding changes. Sites that were affected were Eliza Howell-Near Road (Eliza Howell-NR), Bay City, Holland, Kalamazoo, Lansing, Port Huron, and New Haven. Several of these changes occurred at the end of 2020 and data will not be available until the 2021 report (Chap. 7).
- PM_{2.5}, PM₁₀ and PM coarse measurements at Allen Park, Grand Rapids, and Jenison were switched to T640X instruments that accomplish the same measurements with one instrument.
- The Livonia-Near Road (Livonia-NR) monitor is in the process of moving since site access was lost in July 2019.
- The NO_x monitor at Detroit-E 7 Mile was switched to an NO_y and a NO_x monitor was added to Jenison.
- Sampling continues for the Gordie Howe International Bridge (GHIB) project special study.
- The Detroit-W. Fort St. site name is being changed to Detroit-Southwest (Detroit-SW).

Attainment Status for the National Ambient Air Quality Standards

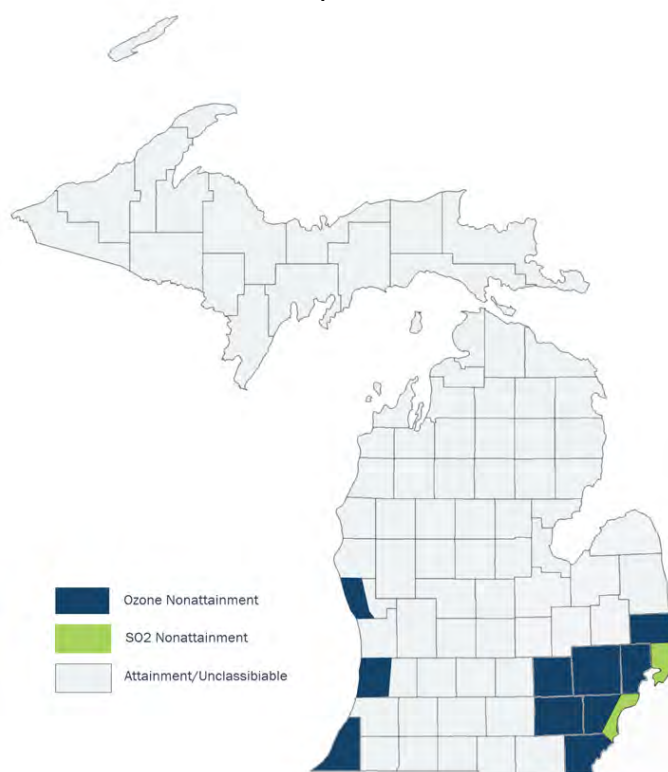


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INTRODUCTION

Air quality regulations in Michigan are based on National Ambient Air Quality Standards (NAAQS) established by United States Environmental Protection Agency (USEPA) based on the federal Clean Air Act (CAA). The NAAQS designates six criteria pollutants considered harmful to public health and the environment. The USEPA must describe the characteristics and potential health and welfare effects for these criteria pollutants. These standards define the maximum permissible concentration of criteria pollutants in the air (see Table 1.1).

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) monitors the six criteria pollutants, which are:

- Carbon monoxide (CO);
- Lead (Pb);
- Nitrogen dioxide (NO₂);
- Ozone (O₃);
- Particulate matter smaller than 10 and 2.5 microns in diameter (PM₁₀ and PM_{2.5}, respectively); and
- Sulfur dioxide (SO₂).

Chapters 2 through 7 provide information on each of the six criteria pollutants and include:

- Michigan's monitoring requirements for 2020;
- Attainment / nonattainment status;
- Monitoring site locations (tables and maps show all the monitors active in 2020); and
- Air quality trends from 2015-2020 broken down by location.¹

The 2020 data for each criteria pollutant is available in **Appendix A**. COVID-19 did not impact air quality data collection in Michigan.

The AQD also monitors air toxics. Air toxics are other hazardous air pollutants that can affect human health and the environment.² This data can be found in **Appendix B**.

The purpose of this report is to provide a snapshot of Michigan's 2020 air quality data, air quality trends, overview of the monitoring network (available in much greater detail in the [2020 Network Review](#)),³ air toxics monitoring program, and other AQD programs, such as [Mlair](#) and the [Emissions Inventory](#).⁴

¹ Air quality trends are based on actual statewide monitored readings, which are also listed in the USEPA's Air Quality Subsystem Quick Look Report Data at www3.epa.gov/airtrends/.

² [An Overview of Michigan Air Toxic Rules](#) is available on the AQD website at www.michigan.gov/air (select "Permits," then "Toxics Laws and Rules.")

³ Available online at [Michigan's 2020 Ambient Air Monitoring Network Review](#)

⁴ [Online information](#) about criteria pollutants and air toxics, along with this and previous Annual Air Quality Reports, are available via the AQD's website at www.michigan.gov/air (select "Monitoring.")

CHAPTER 1: BACKGROUND INFORMATION

This section summarizes the development of the NAAQS (see **Appendix C** for further details) and how compliance with these standards is determined. Also included is an overview of Michigan's air sampling network, attainment status of the state, and information on Mlair and the Air Quality Index (AQI).

National Ambient Air Quality Standards (NAAQS)

Under the CAA, the USEPA established a primary and secondary NAAQS for each criteria pollutant. The primary standard is designed to protect public health with an adequate margin of safety, including the health of the most susceptible individuals in a population, such as children, the elderly, and those with chronic respiratory ailments. Secondary standards are chosen to protect public welfare (personal comfort and well-being) and the environment.

In addition, the NAAQS have various averaging times to address health impacts. Short averaging times reflect the potential for acute (immediate) effects, whereas long-term averaging times are designed to protect against chronic (long-term) effects.

NAAQS have been established for CO, Pb, NO₂, PM, O₃, and SO₂. **Table 1.1** lists the primary and secondary NAAQS, averaging time, and concentration level for each criteria pollutant in effect in 2020. The concentrations are listed as parts per million (ppm), micrograms per cubic meter (µg/m³), and/or milligrams per cubic meter (mg/m³).

Table 1.1: NAAQS in Effect during 2020 for Criteria Pollutants

Pollutant	Primary (health) Level	Primary Averaging Time	Secondary (welfare) Level	Secondary Averaging Time
CO 8-hour average	9 ppm (10 mg/m ³)	8-hour average, not to be exceeded more than once per year (1971)	None*	None*
CO 1-hour average	35 ppm (40 mg/m ³)	1-hour average, not to be exceeded more than once per year (1971)	None*	None*
Lead	0.15 µg/m ³	Maximum rolling 3-month average (2008)	Same as Primary	Same as Primary
NO ₂ Annual mean	0.053 ppm (100 µg/m ³)	Annual mean (1971)	Same as Primary	Same as Primary
NO ₂ 1-hour average	0.100 ppm	98 th percentile of 1-hour average, averaged over 3 years (2010)	Same as Annual	Same as Annual
PM ₁₀	150 µg/m ³	24-hour average, not to be exceeded more than once per year over 3 years (1987)	Same as Primary	Same as Primary
PM _{2.5} Annual average	12.0 µg/m ³	Annual mean averaged over 3 years (2012)	15.0 µg/m ³	Annual mean
PM _{2.5} 24-hour average	35 µg/m ³	98 th percentile of 24-hour concentration, averaged over 3 years (2006)	Same as Primary	Same as Primary
Ozone	0.070 ppm	Annual 4 th highest 8-hour daily max averaged over 3 years (2015)	Same as Primary	Same as Primary
SO ₂	0.075 ppm	99 th percentile of 1-hour daily max averaged over 3 years (2010)	0.5 ppm	3 hours

*In 1985, the USEPA revoked the secondary standard for CO (for public welfare) due to a lack of evidence of adverse effects on public welfare at or near ambient concentrations.

Michigan Air Sampling Network

EGLE's AQD operates the Michigan Air Sampling Network (MASN), along with other governmental agencies. For instance, the O_3 and $PM_{2.5}$ monitor in Manistee County is a tribal monitor operated by the Little River Band of Ottawa Indians. **Figure 1.1** is a picture of the Lansing site. **Figure 1.2** is a picture of the Military Park (GHIB) site. **Figure 1.3** shows a map of the 2020 MASN monitoring sites.

The MASN consists of federal reference method (FRM) monitors that enable continuous monitoring for the gaseous pollutants CO , NO_2 , O_3 , and SO_2 providing real-time hourly data. PM and Pb monitors measure concentrations over a 24-hour period. In addition, continuous $PM_{2.5}$ and PM_{10} monitors provide real-time hourly data for PM . $PM_{2.5}$ chemical speciation monitors determine the chemical composition of $PM_{2.5}$. The MASN data is also used to provide timely reporting to EGLE's air quality reporting web page ([Mlair](#), see later in this chapter). The types of monitoring conducted in 2020 and the MASN locations are shown in **Table 1.2**.

Figure 1.1: Lansing site



Figure 1.2: Military Park site



The **NCore network** began January 1, 2011, as part of the USEPA's 2006 amended air monitoring requirements. NCore is a multi-pollutant network that integrates several advance measurement systems for particles, pollutant gases, and meteorology. Michigan has two NCore sites, Allen Park and Grand Rapids. Further information on this network is provided in **Chapters 2** through **7**.

The **Near-road Monitoring Network** focuses on vehicle emissions and how they disperse near roadways. Data from these sites are presented in **Chapters 2, 5, and 7**.

Figure 1.3: 2020 MASN Monitoring Sites

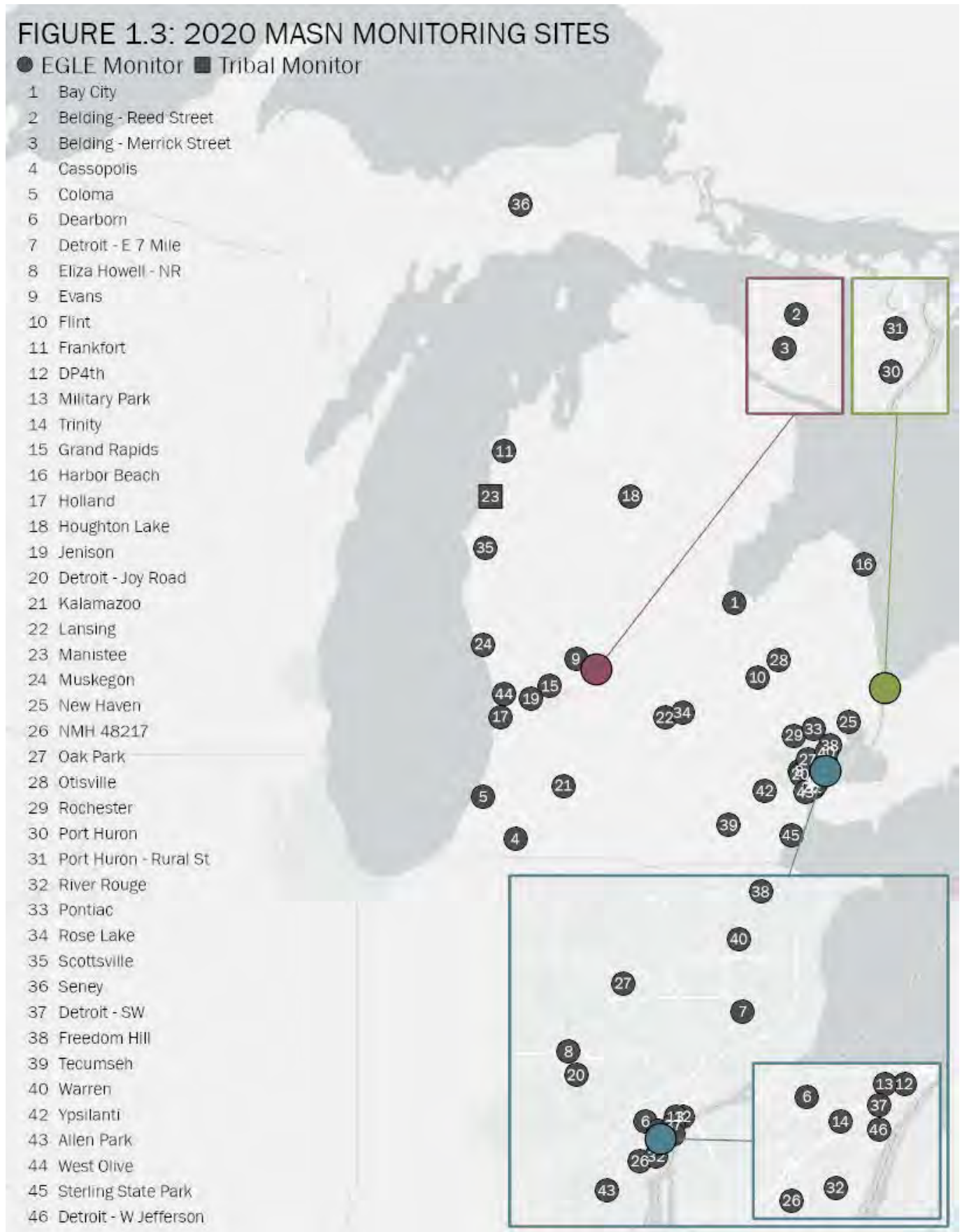


Table 1.2a: Types of Monitoring Conducted in 2020 and MASN Locations in Detroit-Ann Arbor Area.

Airs ID	Site Name	CO	NO ₂	Trace NO _y	O ₃	PM ₁₀	PM _{2.5} FRM	PM _{2.5} Continuous	PM _{2.5} Speciation	SO ₂	VOC	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
260910007	Tecumseh				√			√F						√			√
260990009	New Haven				√		√							√	√	√	
260991003	Warren				√												
261250001	Oak Park				√		√							√			
261470005	Port Huron				√		√	√T		√				√			
261470031	Port Huron-Rural St.												√				
261610008	Ypsilanti				√			√F						√			√
261630001	Allen Park	√*		√	√	√	√	√T	√+A	√*				√	√		√
261630005	River Rouge											√	√	√			
261630015	Detroit-SW ⁵		√			√	√	√F	√+A	√	√	√	√	√	√		√
261630019	Detroit-E 7 Mile			√	√		√							√	√		√
261630027	Detroit-W. Jefferson												√				
261630033	Dearborn					√^	√	√T	√+A		√	√	√#	√	√		√
261630093	Eliza Howell-NR	√	√					√F						√			
261630097	New Mount Herman (NMH) 48217							√T		√			√				
261630098	Detroit Police 4 th Precinct (DP4th)	√	√					√F	A	√			√				
261630099	Trinity	√	√					√F	A	√			√	√			
261630100	Military Park		√					√F	A	√			√				

√ = Data Collected

= 9 additional metals sampled: Ba, Be, Cr, Co, Cu, Fe, Mo, V, Zn

F = FEM continuous PM_{2.5} monitorT = TEOM (non-FEM) continuous PM_{2.5} monitor

* = Trace monitor

^ = Continuous PM₁₀ monitor

A = Aethalometer monitor

⁵ Detroit-SW is renamed from Detroit-W. Fort St., SWHS, Southwestern High School, N. Delray to reflect the site more accurately and maintain some continuity from its previous names.

Table 1.2b: Types of Monitoring Conducted in 2020 and MASN Locations in other Michigan CSAs.

Area (CSA)	Airs ID	Site Name	CO	NO ₂	Trace NO _y	O ₃	PM ₁₀	PM _{2.5} FRM	PM _{2.5} Continuous	PM _{2.5} Speciation	SO ₂	VOC	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
Flint	260490021	Flint				√		√	√F						√			√
Flint	260492001	Otisville				√									√			
Grand Rapids	261390005	Jenison		√		√	√	√							√			
Grand Rapids	261390011	West Olive									√				√			
Grand Rapids	260810020	Grand Rapids	√*		√	√	√	√	√T	√	√*				√			√
Grand Rapids	260810022	Evans				√									√			
Lansing/E. Lansing	260650018	Lansing		√		√		√	√F		√				√			√
Lansing/E. Lansing	260370002	Rose Lake				√												

√ = Data Collected

F = FEM continuous PM_{2.5} monitorT = TEOM (non-FEM) continuous PM_{2.5} monitor

* = Trace monitor

Table 1.2c: Types of Monitoring Conducted in 2020 and MASN Locations in Michigan Counties.

County	Airs ID	Site Name	CO	NO ₂	Trace NO _y	O ₃	PM ₁₀	PM _{2.5} FRM	PM _{2.5} Continuous	PM _{2.5} Speciation	SO ₂	VOC	Carbonyls	Trace Metals (As, Cd, Mn, Ni, Pb)	Wind Speed & Direction, Temp.	Relative Humidity	Solar Radiation	Barometric Pressure
Monroe	261150006	Sterling State Park									√				√			
Huron	260630007	Harbor Beach				√									√			
Bay	260170014	Bay City							√F						√			
Missaukee	261130001	Houghton Lake		√		√			√F						√			√
Allegan	260050003	Holland				√			√F						√	√	√	√
Benzie	260190003	Frankfort ⁶				√												
Berrien	260210014	Coloma				√									√			
Cass	260270003	Cassopolis				√									√			
Kalamazoo	260770008	Kalamazoo				√		√	√T						√			
Manistee	261010922	Manistee (tribal)				√		√							√		√	√
Mason	261050007	Scottville				√									√			
Muskegon	261210039	Muskegon				√									√			
Schoolcraft	261530001	Seney				√			√F						√	√	√	√
Ionia	260670002	Belding-Reed St.													√			
Ionia	260670003	Belding-Merrick St.												√				

√ = Data Collected

F = FEM continuous PM_{2.5} monitorT = TEOM (non-FEM) continuous PM_{2.5} monitor⁶ Also called Benzonia.

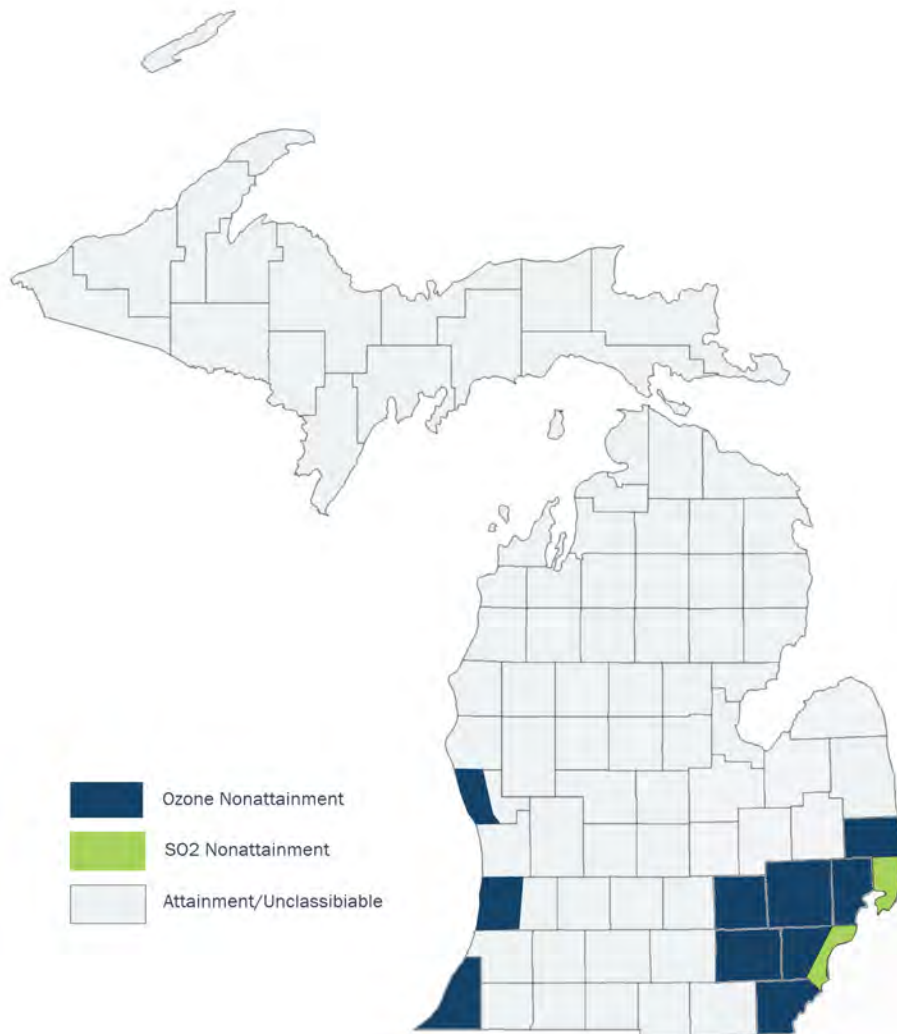
Current Attainment Status

Areas of the state that are below the NAAQS concentration level are called attainment areas. The entire state of Michigan is in attainment for the following pollutants:

- CO
- Pb
- NO₂
- Particulate Matter

Nonattainment areas are those that have been classified by the USEPA as having concentrations over the NAAQS level. Portions of the state are in nonattainment for SO₂ and O₃ (see **Figure 1.4**). The SO₂ nonattainment area includes a portion of Wayne County and a portion of St. Clair County. Ozone nonattainment areas include a portion of Allegan County, all of Berrien County, a portion of Muskegon County and the 7-county area of Southeast Michigan, which includes Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties. Nonattainment status for O₃ was effective on August 3, 2019.

Figure 1.4: Attainment Status for the National Ambient Air Quality Standards

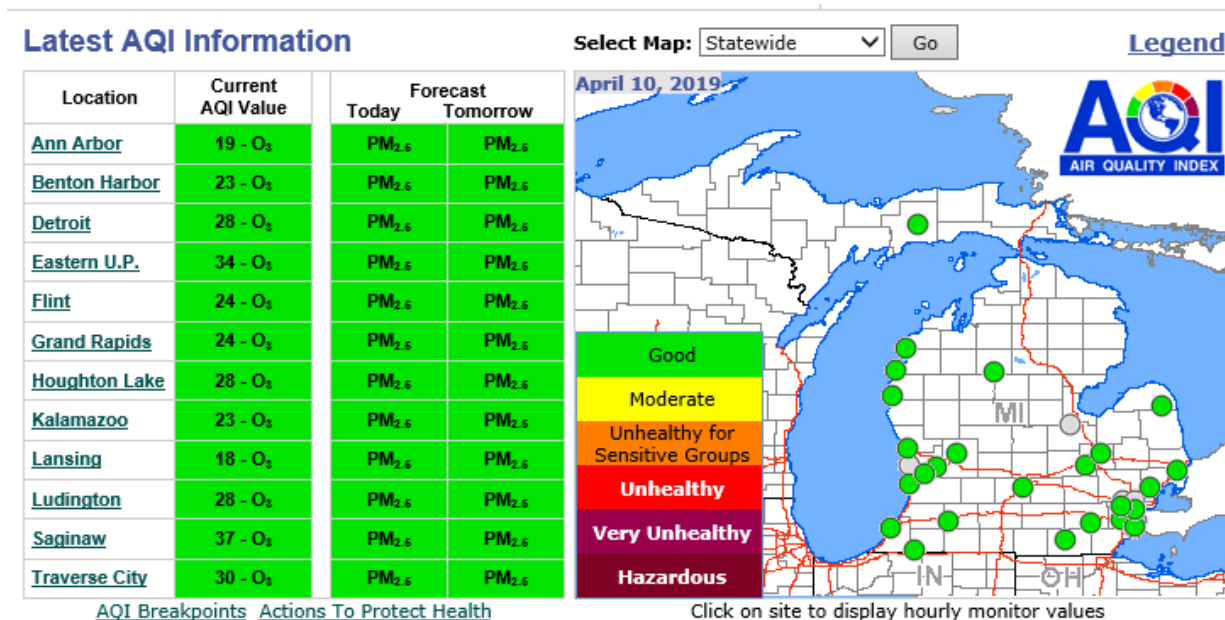


Mlair – Air Quality Information in Real-Time

Mlair is the internet tool that provides real-time air quality information via EGLE's web page. The degmair.org hotlink opens to the current Air Quality Index (AQI) map and displays air quality forecasts for "today" and "tomorrow." **Mlair** also hosts EnviroFlash, the automated air quality notification system.

Air Quality Index

The Air Quality Index (AQI) is a simple tool developed to communicate current air quality information to the public. The current day's color-coded AQI values, ranging from Good to Hazardous (see **Table 1.3**), are displayed in a forecast table and as dots on a Michigan map (see example below).



As can be seen from the AQI bar graphs for the Detroit-Warren-Dearborn area (Figure 1.5) and the Grand Rapids-Wyoming area (Figure 1.6), air quality in Michigan is generally in the Good or Moderate range. An area will occasionally fall into the Unhealthy for Sensitive Groups range, but rarely reaches Unhealthy levels.

In the Detroit area, only two days were in the Unhealthy range, both for PM_{2.5} on July 4 and 5, due to fireworks. In the Unhealthy for Sensitive Groups (USG), 15 days were due to ozone, five were due to PM_{2.5} and four were due to SO₂. In Detroit area, PM_{2.5} leads the AQI 220 days, meaning that pollutant has the highest AQI value of all the pollutants measured per day.

In the Grand Rapids area, only one day was in the Unhealthy range, for PM_{2.5} on July 4, due to fireworks. In the Unhealthy for Sensitive Groups (USG), six days were due to ozone, one was due to PM_{2.5} (on July 5th). In Grand Rapids area, ozone leads the AQI 247 days, meaning that pollutant has the highest AQI value of all the pollutants measured per day.

Figure 1.5: 2020 AQI Days per Pollutant for Detroit-Warren-Dearborn MSA, numbers next to categories are for the Overall AQI Value (First Bar on Graph)

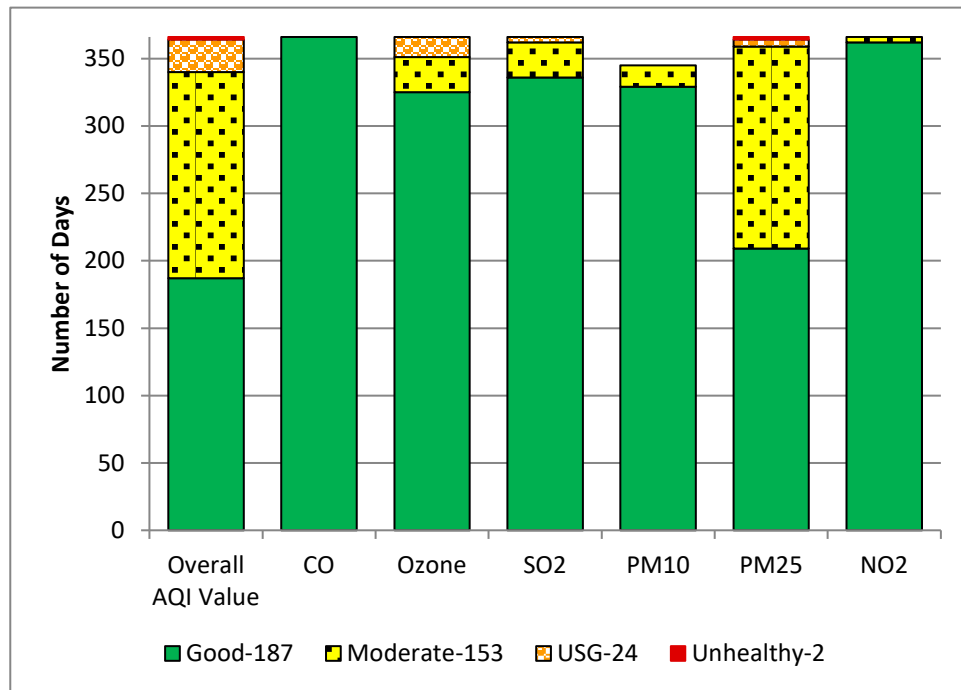
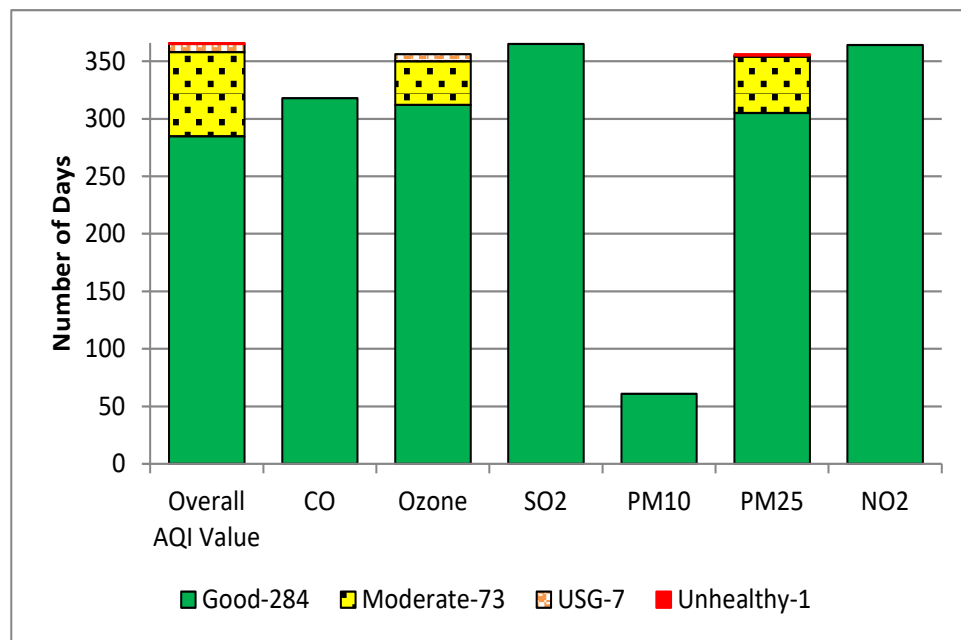


Figure 1.6: 2020 AQI Days Per Pollutant for Grand Rapids-Wyoming MSA, numbers next to categories are for the Overall AQI Value (First Bar on Graph)



Mlair includes an “Air Quality Index Fact Sheet” link: michigan.gov/documents/deq/deq-aqd-aqifacts_273090_7.pdf, which contains activity recommendations based on the AQI levels (also **Table 1.3**).

Table 1.3: AQI Colors and Health Statements

AQI Color, Category and Value	<u>Particulate Matter</u> ($\mu\text{g}/\text{m}^3$) 24-hour	<u>Ozone</u> (ppm) 8-hour / 1-hour	<u>Carbon Monoxide</u> (ppm) 8-hour	<u>Sulfur Dioxide</u> (ppm) 24-hour	<u>Nitrogen Dioxide</u> (ppm) 1-hour
GREEN: Good 1- 50	None	None	None	None	None
YELLOW: Moderate 51- 100	Unusually sensitive people should consider reducing prolonged or heavy exertion.	Unusually sensitive people should consider reducing prolonged or heavy exertion.	None	None	Unusually sensitive people should consider limiting prolonged outdoor exertion
ORANGE: Unhealthy for Sensitive Groups 101- 150	People with heart or lung disease, children, teens, & older adults should reduce prolonged or heavy exertion.	People with heart or lung disease, children, teens, & older adults, and people who are active outdoors should reduce prolonged or heavy exertion.	People with heart disease, such as angina, should reduce heavy exertion & avoid sources of CO, such as heavy traffic.	People with asthma should consider reducing outdoor exertion.	People with lung disease, children, & older adults should limit prolonged outdoor exertion
RED: Unhealthy 151- 200	People with heart or lung disease, children, teen, & older adults should avoid prolonged or heavy exertion. Everyone should reduce prolonged or heavy exertion.	People with heart or lung disease, children, teens & older adults, and people who are active outdoors should avoid prolonged or heavy exertion. Everyone should reduce prolonged or heavy exertion.	People with heart disease, such as angina, should reduce moderate exertion & avoid sources of CO, such as heavy traffic.	Children, asthmatics, & people with heart or lung disease should reduce outdoor exertion.	People with lung disease, children, & older adults should avoid prolonged outdoor exertion. Everyone should limit prolonged outdoor exertion.
PURPLE: Very Unhealthy 201- 300	People with heart or lung disease, children, teens, & older adults should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy outdoor exertion.	People with heart or lung disease, children & older adults, and people who are active outdoors should avoid all physical activity outdoors. Everyone else should limit outdoor exertion.	People with heart disease, such as angina, should avoid exertion & sources of CO, such as heavy traffic.	Children, asthmatics, & people with heart or lung disease should avoid outdoor exertion. Everyone should reduce outdoor exertion.	People with lung disease, children, & older adults should avoid all outdoor exertion. Everyone else should limit prolonged outdoor exertion.
MAROON: Hazardous 301- 500	People with heart or lung disease, children, teens, & older adults should remain indoors. Everyone should avoid all physical activity outdoors.	People with heart or lung disease, children, and older adults should remain indoors. Everyone should avoid all physical activity outdoors.	People with heart disease, such as angina, should avoid exertion & CO sources, such as heavy traffic. Everyone should limit heavy exertion.	Children, asthmatics, & people with heart or lung disease should remain indoors. Everyone should avoid outdoor exertion.	Children and People with respiratory disease, such as asthma, should avoid outdoor exertion.

Air Quality Forecasts

AQD meteorologists provide air pollution forecasts to alert the public when air pollution levels may become elevated. *Action!* Days are declared when levels are expected to reach or exceed the Unhealthy for Sensitive Groups AQI health indicator. On *Action!* Days, businesses, industry, government, and the public are encouraged to reduce air pollution levels by limiting vehicle use, refueling only after 6 PM, carpooling, walking, biking, or taking public transit, deferring the use of gasoline-powered lawn and recreation equipment, limiting the use of volatile chemicals, and curtailing all burning. More information on voluntary air pollution control measures can be found under the *Action!* Days tab on **Mlair**.

The weather plays a significant role in air quality (see [Chapter 9](#) for an annual weather summary) and can either help increase or decrease the amount of pollution in the air. High temperatures, sun, and longer days (i.e., more daylight hours) are conducive to ozone formation, whereas rain tends to wash pollutants out of the air. *Action!* Days are declared when meteorological conditions are conducive for the formation of elevated ground-level O₃ or PM_{2.5} concentrations.

Table 1.4 shows that there were some *Action!* Days declared during the summer of 2020.

Table 1.4: *Action!* Days Declared During Summer 2020

Location	Year	Number	Dates
Ann Arbor	2020	9	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18
Benton Harbor	2020	10	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18, 8/26
Detroit	2020	9	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18
Flint	2020	2	6/19, 6/20
Grand Rapids	2020	10	6/18, 6/19, 6/20, 7/5, 7/6, 7/7, 7/8, 7/9, 7/18, 8/26
Kalamazoo	2020	2	6/19, 6/20
Ludington	2020	3	6/18, 6/19, 6/20
Traverse City	2020	2	6/19, 6/20

Air Quality Notification

EnviroFlash is a free service that provides automated air quality (AQI) and ultraviolet (UV) forecasts to subscribers. Those enrolled receive email or mobile phone text messages when the health level they select is predicted to occur. AIRNow iPhone and Android applications deliver ozone and fine particle air quality forecasts plus detailed real-time information that can be used to better protect health when planning daily activities. To learn more about this program, select the **Mlair** button from Michigan's Air Quality page Michigan.gov/air. To receive notices, choose the "Air Quality Notification" tab and click the "Enroll in AQI EnviroFlash" link. Michigan's EnviroFlash network has the potential to reach up to 98 percent of the state's population.

AIRNow

EGLE supplies Michigan air monitoring data to AIRNow, the USEPA's nationwide air quality mapping system. Information about AIRNow is available at AirNow.gov or you can select the AIRNow hot link at the bottom of each **Mlair** web page.

CHAPTER 2: CARBON MONOXIDE (CO)

Carbon monoxide is a gas formed during incomplete burning of fuel. CO is colorless, odorless, and tasteless, and is lethal at elevated concentrations. Levels peak during colder months primarily due to cold temperatures that affect combustion efficiency of engines. The CO NAAQS is 9 ppm for the second highest 8-hour average and 35 ppm for the second highest 1-hour average. Its sources and effects are provided below.

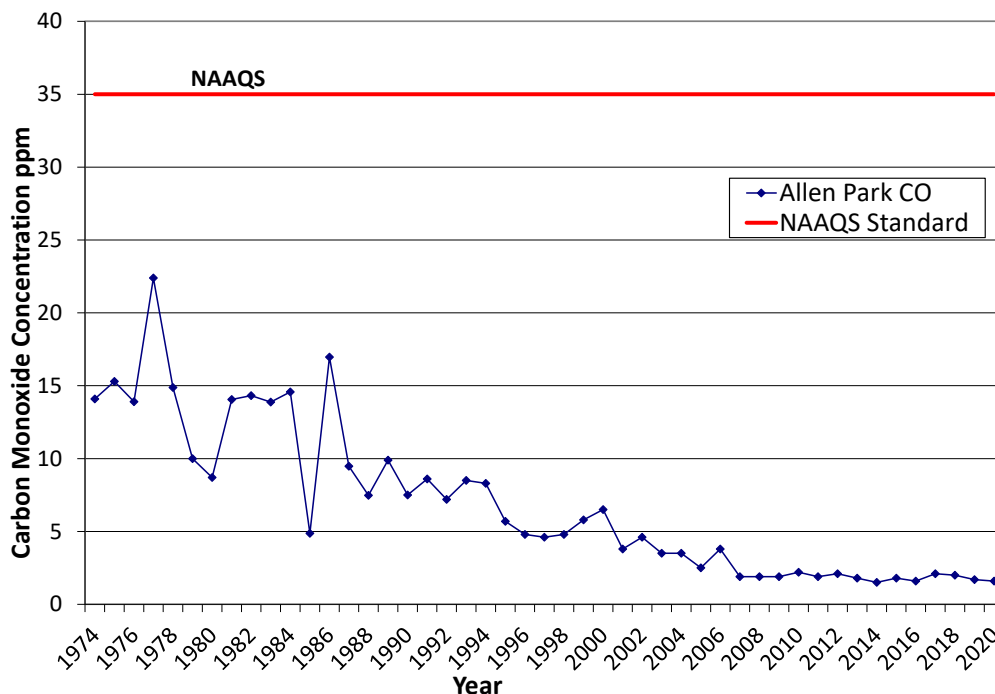
Sources: CO is given off whenever fuel or other carbon-based materials are burned. Outdoor exposure sources include automobile exhaust, industrial processes (metal processing and chemical production), and non-vehicle fuel combustion. Natural sources include volcanos, forest fires, and photochemical reactions in the atmosphere. Indoor exposure sources include wood stoves and fireplaces, gas ranges with continuous pilot flame ignition, unvented gas or kerosene heaters, and cigarette smoke.

Effects: CO enters the bloodstream through the lungs, where it displaces oxygen delivered to the organs and tissues. Elevated levels can cause visual impairment, interfere with mental acuity by reducing learning ability and manual dexterity, and can decrease work performance in the completion of complex tasks. In extreme cases, unconsciousness and death can occur. CO also alters atmospheric photochemistry contributing to the formation of ground-level O₃, which can trigger serious respiratory problems.

Population most at risk: Those who suffer from cardiovascular (heart and respiratory) disease, fetuses, infants, and the elderly are most at risk for exposure to elevated levels of CO. People with angina and peripheral vascular disease are especially at risk, as their circulatory systems are already compromised and less efficient at carrying oxygen; however, elevated CO levels can also affect healthy people.

Historical Trends: Southeast Michigan has been monitoring CO for 45 years. **Figure 2.1** shows the CO trend at Allen Park to be well below the 1-hour standard of 35 ppm. This standard has not changed since 1971.

Figure 2.1: Historical 1-hour CO Averages at Allen Park



Figures 2.2 and 2.3 show CO emission sources and CO emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 2.2: CO Emissions by Source Sector for Michigan 2017 in Tons (NEI 2017)

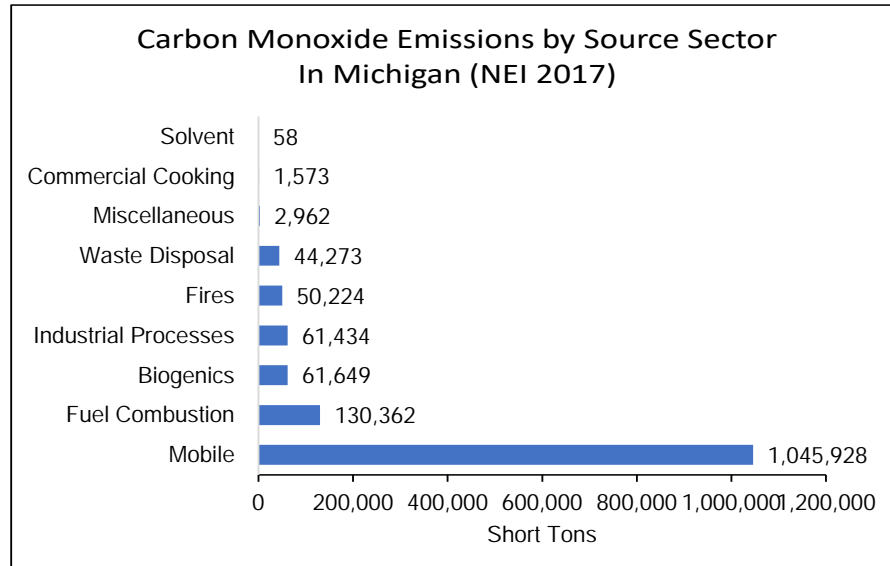


Figure 2.3: CO Emissions in 2017 (NEI)

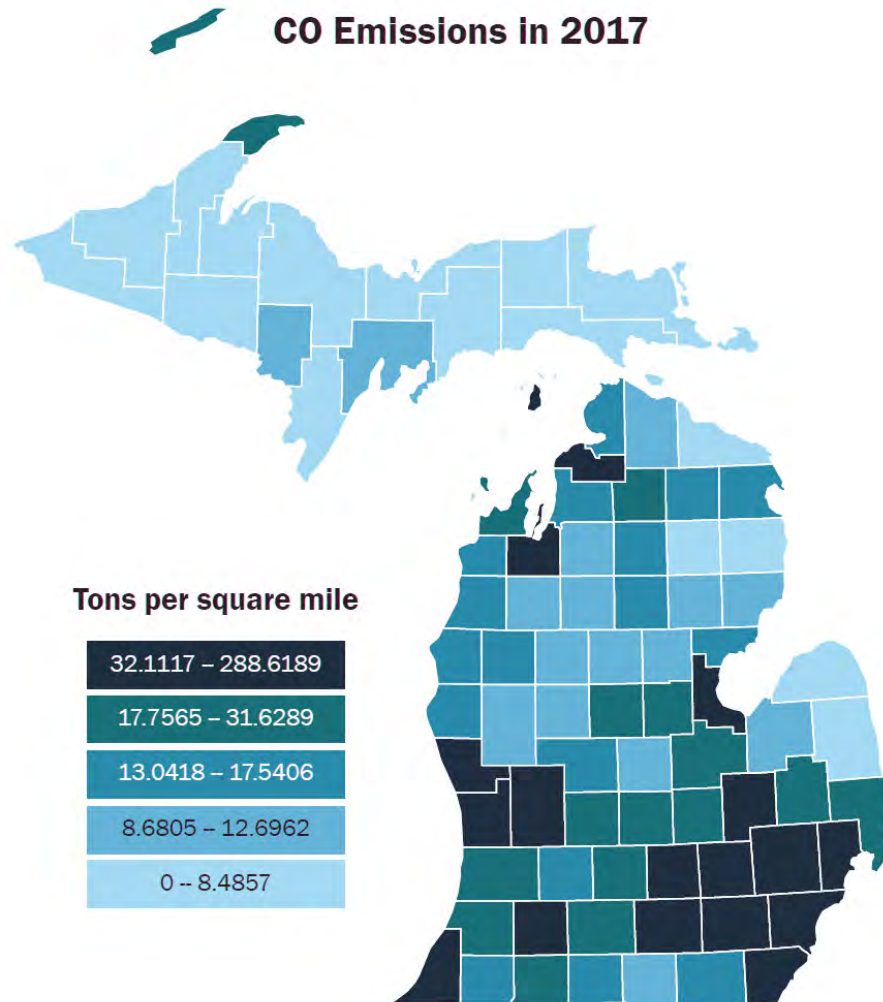


Figure 2.4 shows the location of each CO monitor that operated in 2020.

- Near-roadway network sites: Eliza Howell-NR.
- NCore Network: Grand Rapids and Allen Park measure trace CO (lower detection levels 1-50 ppm).
- Ghib project: DP4th and Trinity, started summer and fall 2018, respectively.

Figure 2.4: CO Monitors in 2020

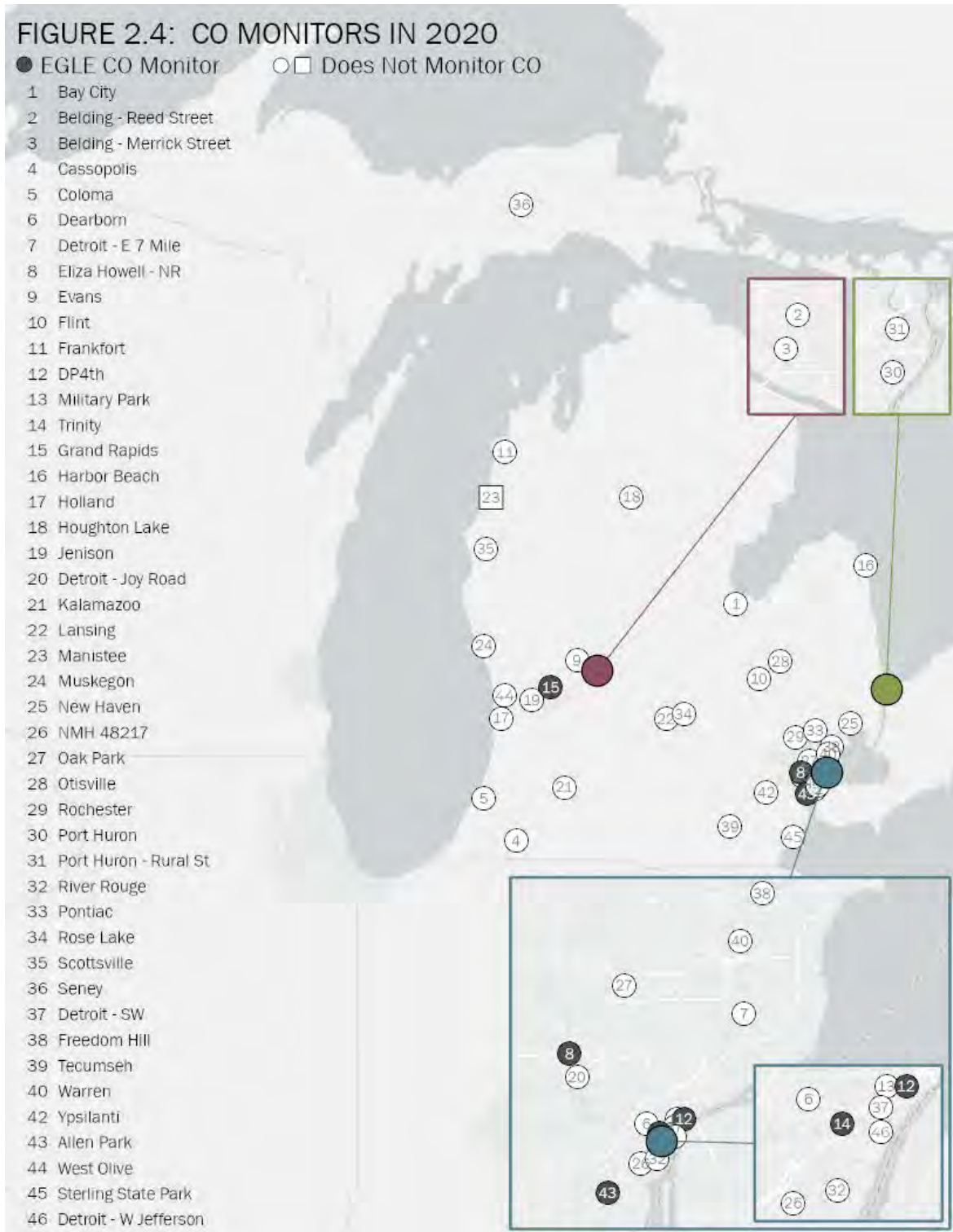


Figure 2.5 shows the second highest 1-hour CO concentrations for Michigan from 2015-2020, which demonstrates there have not been any exceedances of the 1-hour CO NAAQS.

Figure 2.5: CO Levels in Michigan from 2015-2020 (2nd Highest 1-Hour Maximum Values)

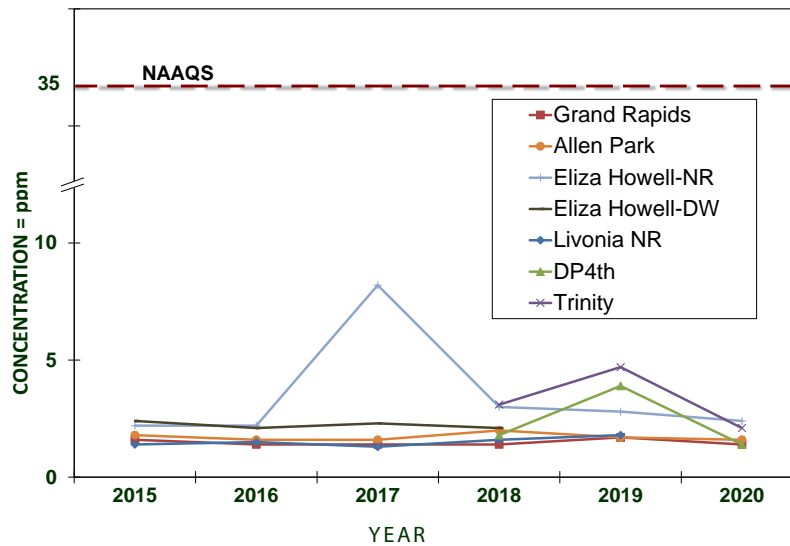
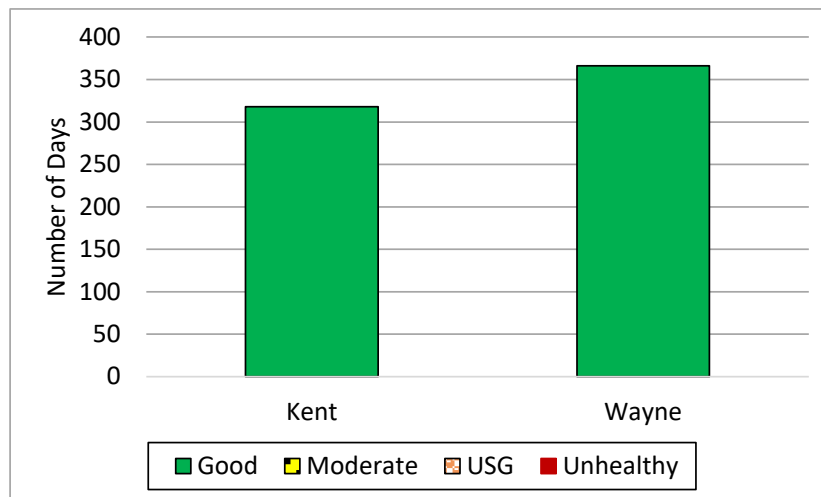


Figure 2.6 shows the AQI values per day in counties where CO is monitored. All days were in the good AQI range.

Figure 2.6: 2020 AQI Days for CO in Michigan Counties



CHAPTER 3: LEAD (PB)

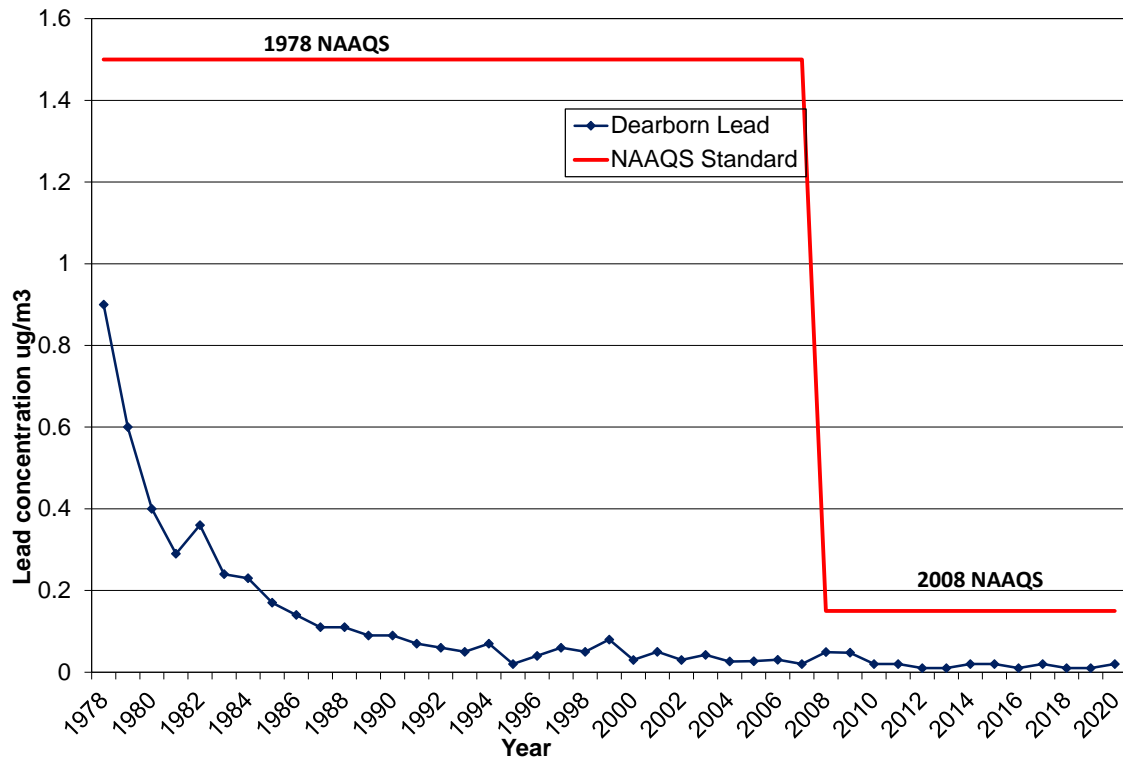
Lead is a highly toxic metal found in coal, oil, and other fuels. It is also found in older paints, municipal solid waste, and sewage sludge, and may be released to the atmosphere during combustion. In 2008, the USEPA lowered the Pb NAAQS from a maximum quarterly average of $1.5 \mu\text{g}/\text{m}^3$ to a 3-month rolling average of $0.15 \mu\text{g}/\text{m}^3$. Its sources and effects are presented below.

Sources: With the phase-out of leaded gas in the 1970s, the major sources of Pb emissions have been due to ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other industrial sources include Pb acid battery manufacturers, waste incinerators, and utilities. The highest air concentrations of Pb are usually found near lead smelters.

Effects: Exposure occurs through the inhalation or ingestion of Pb in food, water, soil, or dust particles. Pb primarily accumulates in the body's blood, bones, and soft tissues, and adversely affects the nervous system as well as the cardiovascular system, reproductive system, blood, kidneys, and other organs.

Population most at risk: Fetuses and children are most at risk since low levels of Pb may cause central nervous system damage. Excessive Pb exposure during the early years of life is associated with lower IQ scores and neurological impairment (seizures, mental development, and behavioral disorders). Even at low doses, lead exposure is associated with changes in fundamental enzymatic, metabolic, and homeostatic mechanisms in the body, and Pb may be a factor in high blood pressure and subsequent heart disease.

Historical Trends: Southeast Michigan has been monitoring for lead for 40 years. **Figure 3.1** shows the trend for lead at Dearborn. The largest decrease in Pb in the air is due to the removal of Pb in gasoline. By 1975, most newly manufactured vehicles no longer required leaded gasoline, and as a result, there was a dramatic decrease in ambient Pb levels. In 1996, the USEPA banned the sale of leaded fuel for use in on-road vehicles. The graph also shows the decrease in the Pb standard that occurred in 2008.

Figure 3.1: Historical Quarterly / 3-month Averages for Lead at Dearborn

Figures 3.2 and 3.3 show Pb emission sources and Pb emissions by county (courtesy of the USEPA's State and County Emission Summaries).

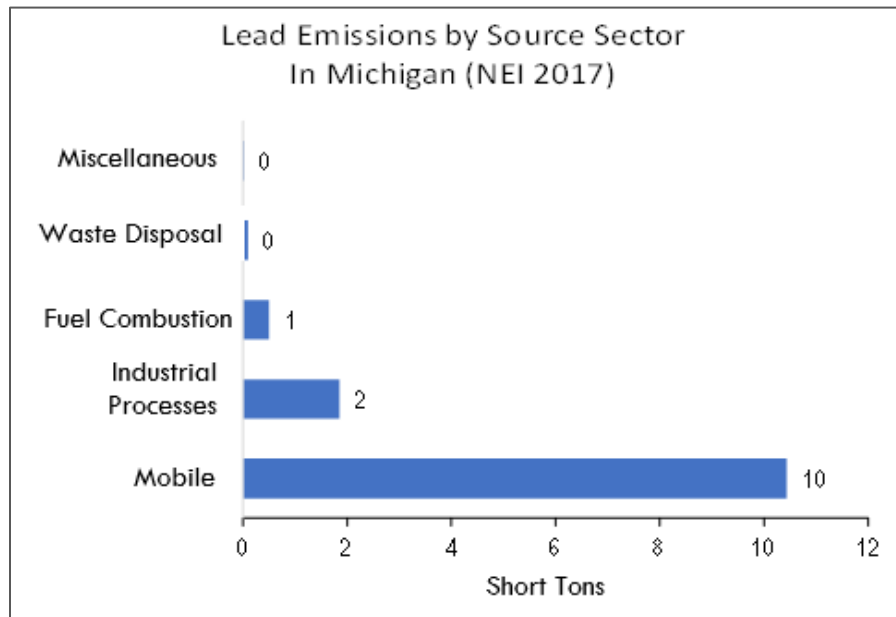
Figure 3.2: Pb Emissions by Source Sector

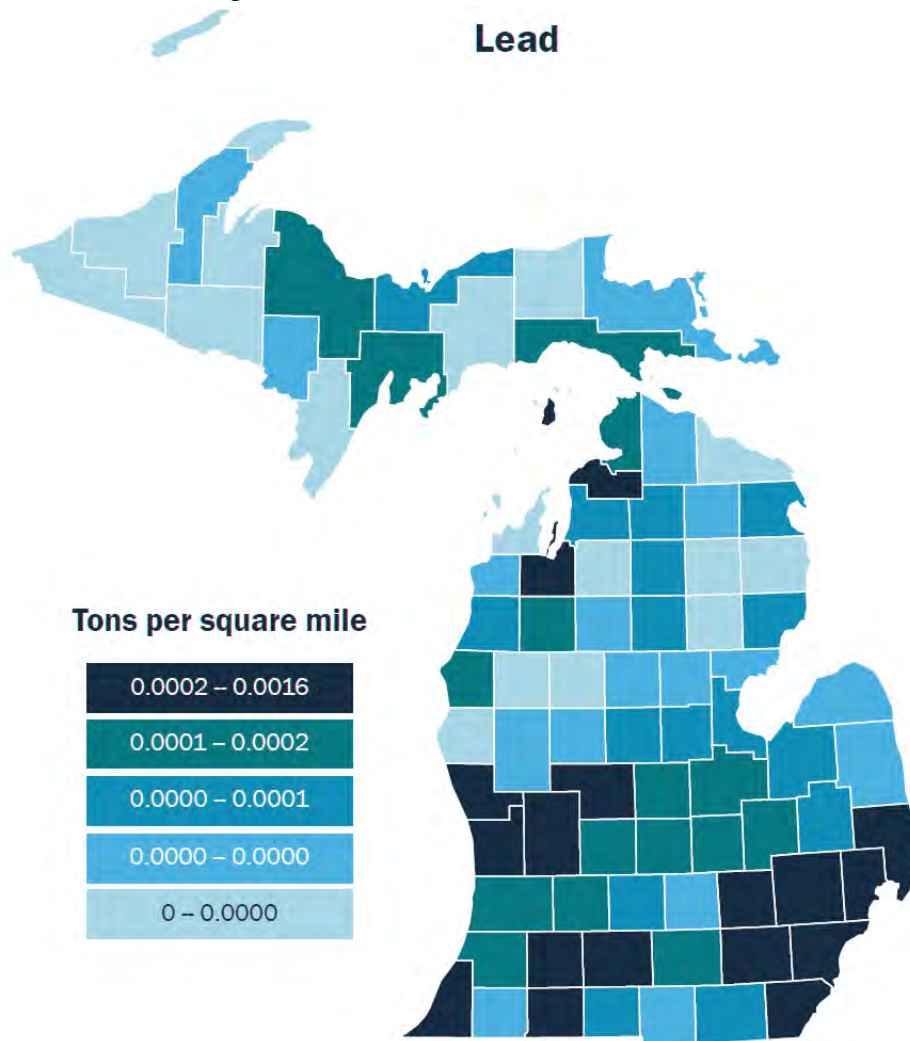
Figure 3.3: Pb Emissions in 2017 (NEI)

Figure 3.4 shows the location of the Pb monitors in the MASN in 2020. When the Pb NAAQS was lowered in 2008, the monitoring network was modified to consist of source-oriented monitors and population-oriented monitors. As part of the 2008 Pb NAAQS, EGLE must monitor near stationary sources emitting more than 1/2 ton of Pb per year.

- Source-oriented sites: Port Huron-Rural St. and Belding-Merrick St. The second site, Belding-Reed St. was shut down on January 1, 2019, since lead levels are below the standard and both sites are no longer necessary. The two sites in Belding previously were above the standard, but values for both the sites have been below the NAAQS for the past five years. Belding was designated to attainment on July 31, 2018.
- National Air Toxics Trend Sites (NATTS): Dearborn lead and trace metals, both as total suspended particulate (TSP) and PM₁₀. Lead measurements as PM_{2.5} are also made throughout the PM_{2.5} speciation network.
- NCore sites: Allen Park and Grand Rapids.
- Network consistency: River Rouge, Detroit-W. Jefferson, NMH 48217, and Detroit-SW. On January 1, 2018, lead sampling was started at all the TSP metals sites to maintain consistency and to be more protective of public health. Many older homes, which often contain lead-based paint, are being demolished in the Detroit area near these monitors.

- Secondary monitor: Port Huron-Rural St. to comply with the USEPA's collocation regulations.
- Gordie Howe International Bridge (GHIB) project: DP4th, Trinity, and Military Park.

Figure 3.4: Lead (Pb) Monitors in 2020

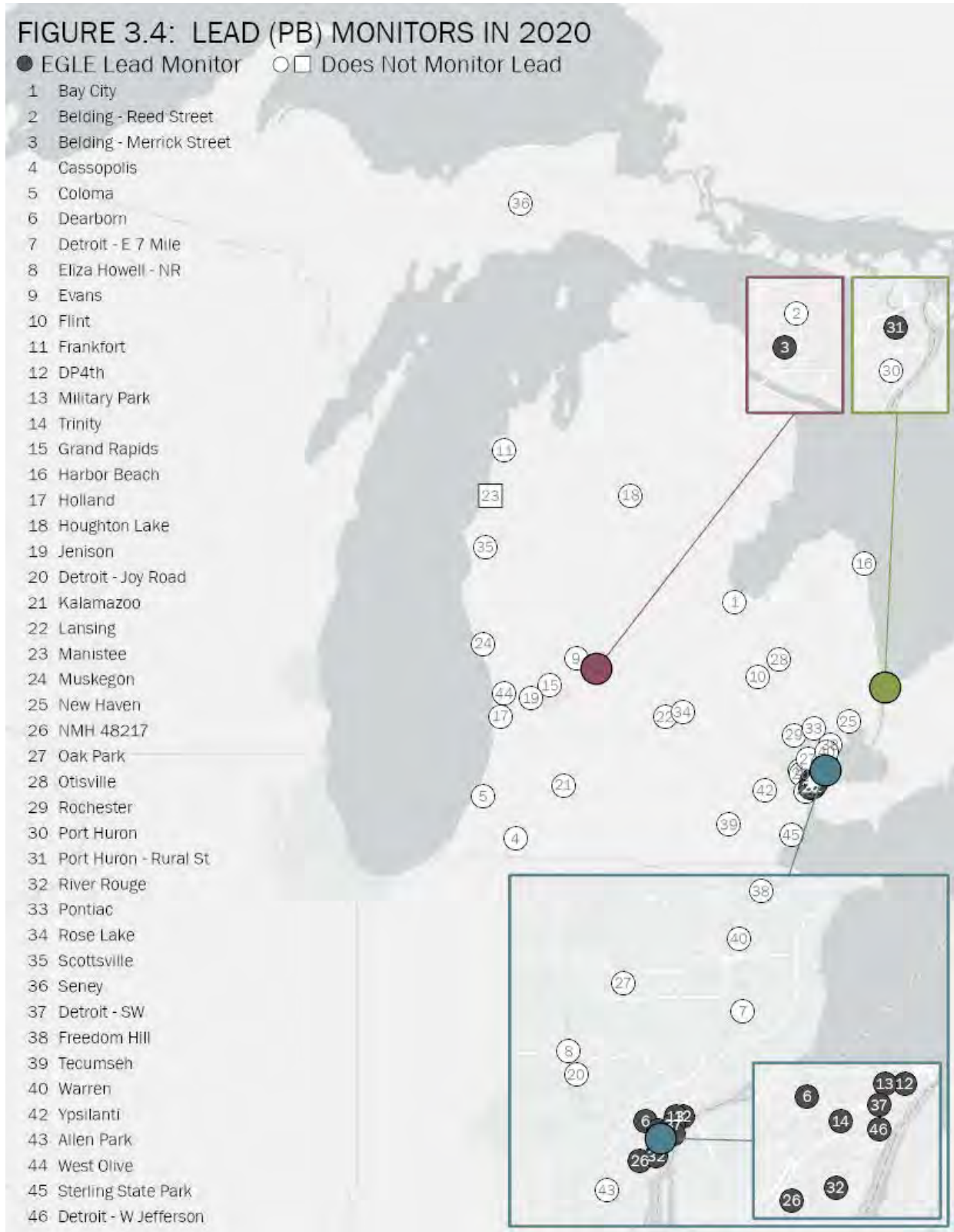
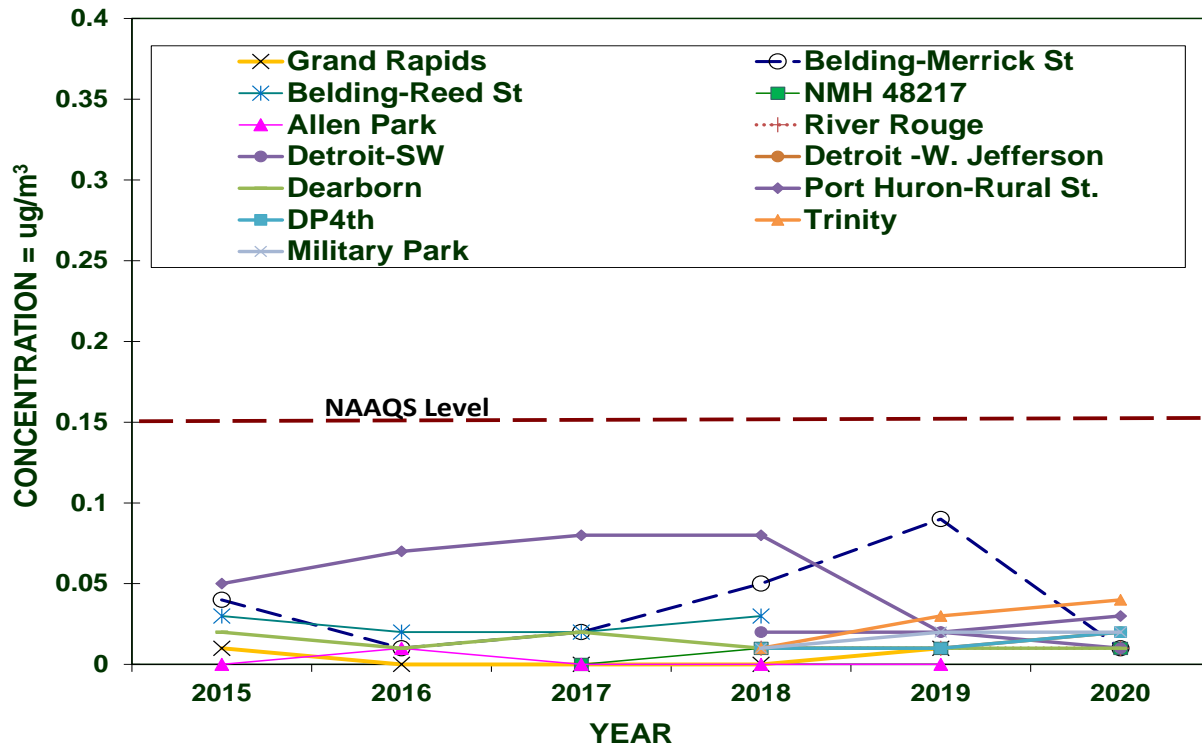


Figure 3.5 shows the maximum 3-month rolling average values for Pb from 2015 to 2020. All Pb monitor sites in Michigan are below the standard.

Figure 3.5: Lead Levels in Michigan from 2015-2020 (Maximum 3-month Average Values)



CHAPTER 4: NITROGEN DIOXIDE (NO₂)

Nitrogen dioxide is a reddish-brown, highly reactive gas formed through oxidation of nitric oxide (NO). Upon dilution, it becomes yellow or invisible. High concentrations produce a pungent odor and lower levels have an odor like bleach. NO_x is the term used to describe the sum of NO, NO₂, and other nitrogen oxides. NO_x can lead to the formation of O₃ and NO₂ and can react with other substances in the atmosphere to form particulate matter or acidic products that are deposited in rain (acid rain), fog, or snow. Since 1971, the primary and secondary standard for NO₂ was an annual mean of 0.053 ppm. In January 2010, the USEPA added a 1-hour NO₂ standard of 100 ppb, taking the form of the 98th percentile averaged over three years. The sources and effects of NO₂ are as follows:

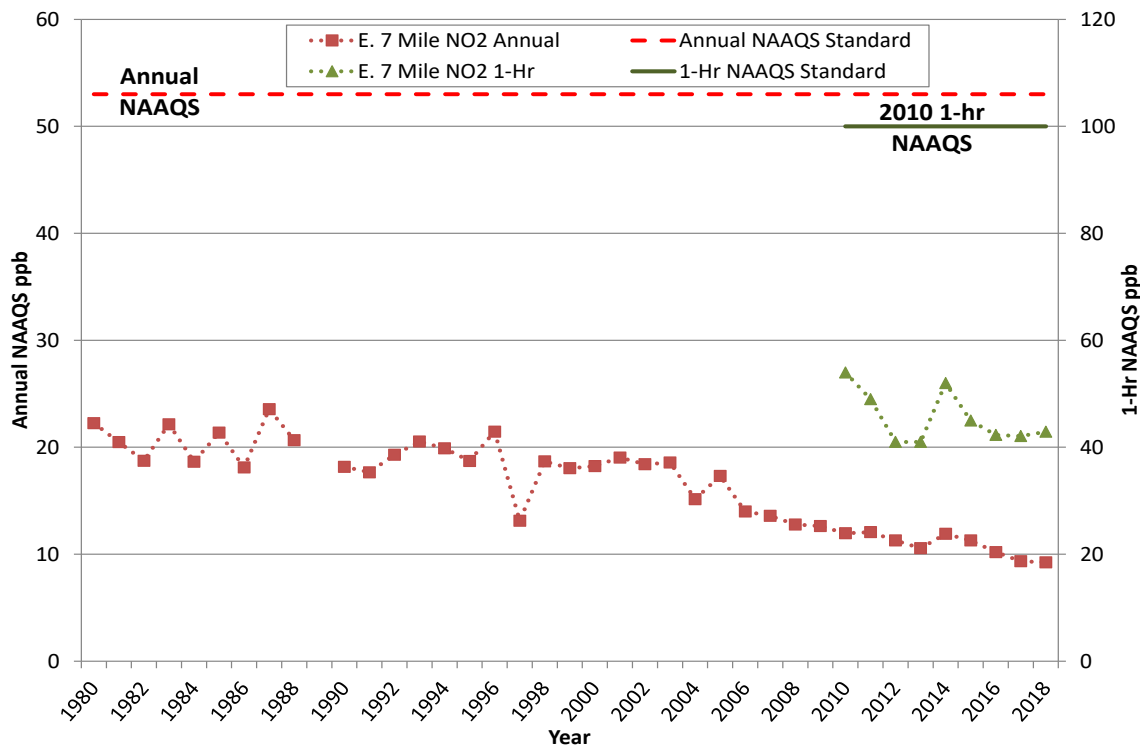
Sources: NO_x compounds and their transformed products occur both naturally and because of human activities. Natural sources of NO_x are lightning, forest fires, bacterial processes in soil, and stratospheric intrusion. Stratospheric intrusion is when the air upper atmosphere (stratosphere) descends towards the surface of the earth and mixes with the air at breathing level. Ammonia and other nitrogen compounds produced naturally are important in the cycling of nitrogen through the ecosystem. The major sources of man-made (anthropogenic) NO_x emissions come from high-temperature combustion processes such as those occurring in automobiles and power plants. Home heaters and gas stoves produce substantial amounts of NO₂ in indoor settings.

Effects: Exposure to NO₂ occurs through the respiratory system, irritating the lungs. Short-term NO₂ exposures (i.e., less than three hours) can produce coughing and changes in airway responsiveness and lung function. Evidence suggests that long-term exposures to NO₂ may lead to increased susceptibility to respiratory infection and may cause structural changes in the lungs. Exercise increases the ventilation rate and hence exposure to NO₂. Nitrate particles and NO₂ can block the transmission of light, resulting in visibility impairment (i.e., smog or haze). Nitrogen deposition can lead to fertilization, excessive nutrient enrichment, or acidification of terrestrial, wetland, and aquatic systems that can upset the delicate balance in those ecosystems.

Population most at risk: Individuals with pre-existing respiratory illnesses and asthmatics are more sensitive to the effects of NO₂ than the general population. Short-term NO₂ exposure can increase respiratory illnesses in children.

Historical Trends: Southeast Michigan has been monitoring for NO₂ for 40 years. **Figure 4.1** shows the trend for NO₂ at Detroit-E 7 Mile Road, which has been well below the annual standard of 53 ppb and shows a downward trend. In 2010, the USEPA added a 1-hour standard for NO₂, which has also remained well below the standard in Michigan. Southeast Michigan is highly industrialized; therefore, it is a good indicator of the air quality improvement for the rest of the state.

Figure 4.1: Historical Annual and 1-hour NO₂ at Detroit-E 7 Mile Road



Figures 4.2 and 4.3 show NO₂ emission sources and NO₂ emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 4.2: Nitrogen Oxide Emissions by Source Sector

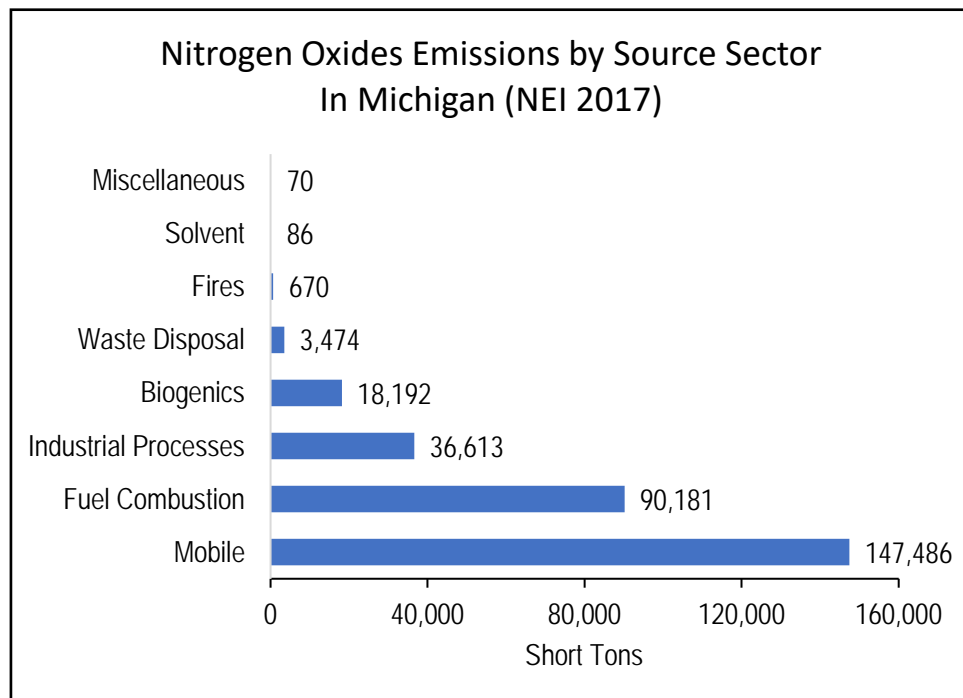


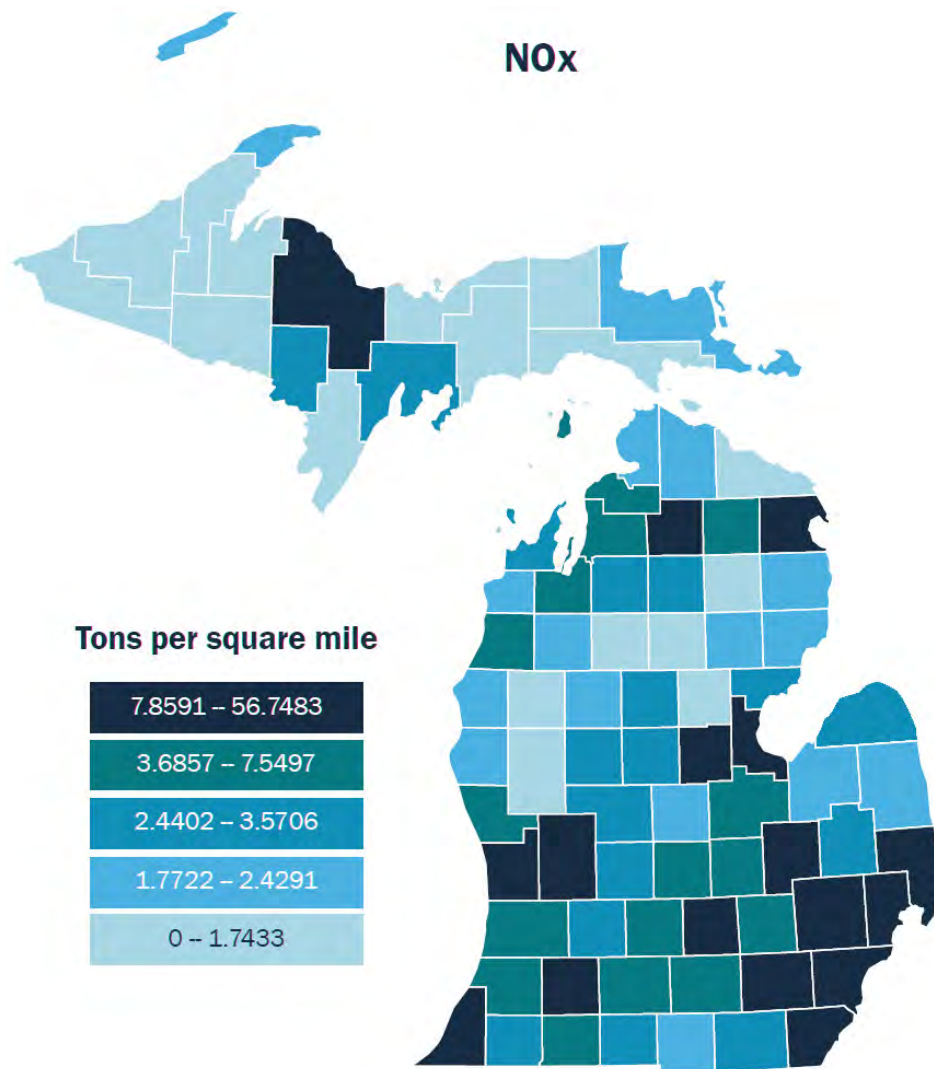
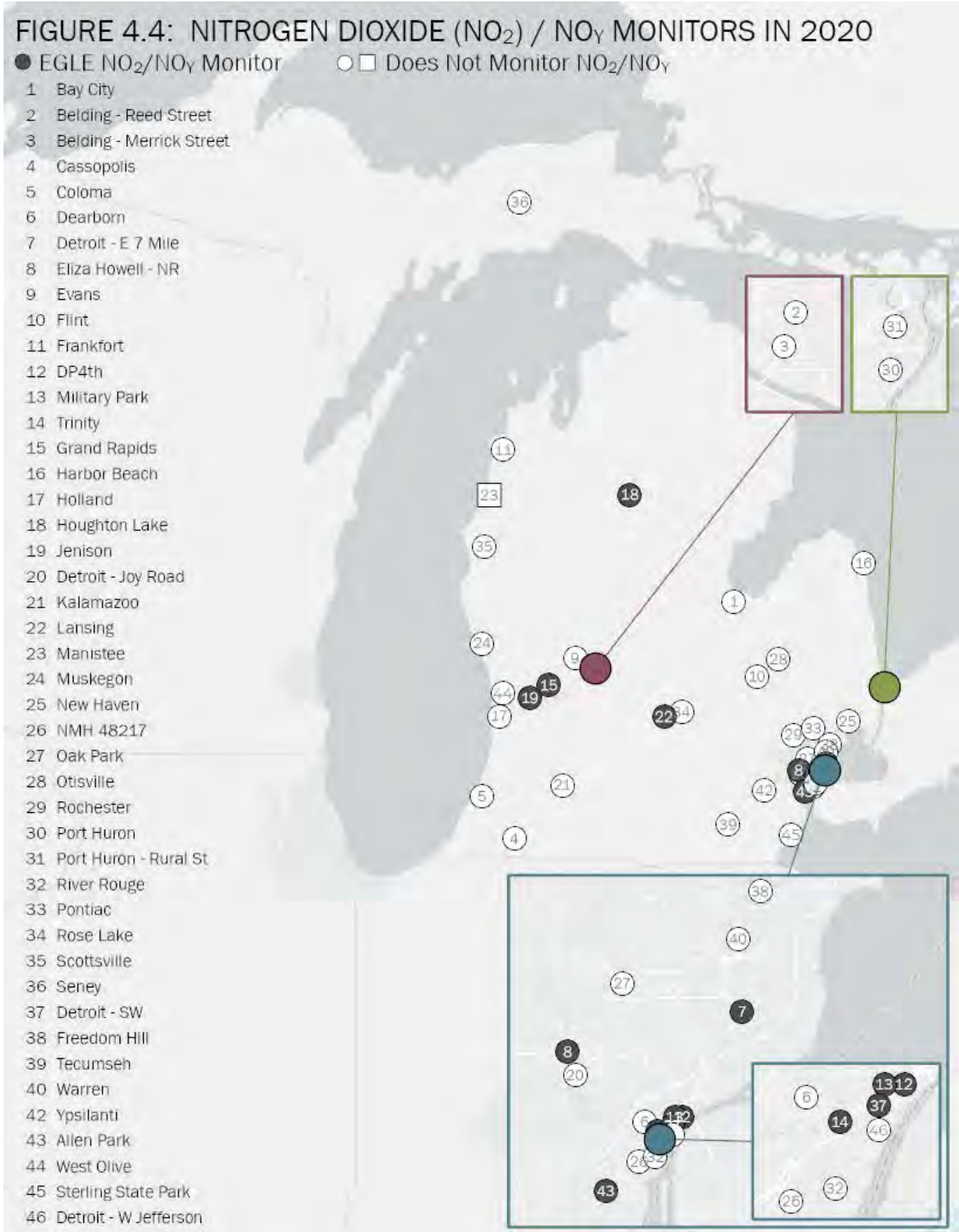
Figure 4.3: Nitrogen Oxide Emissions in 2017 (NEI)

Figure 4.4 shows the location of all NO₂ monitors that operated in 2020.

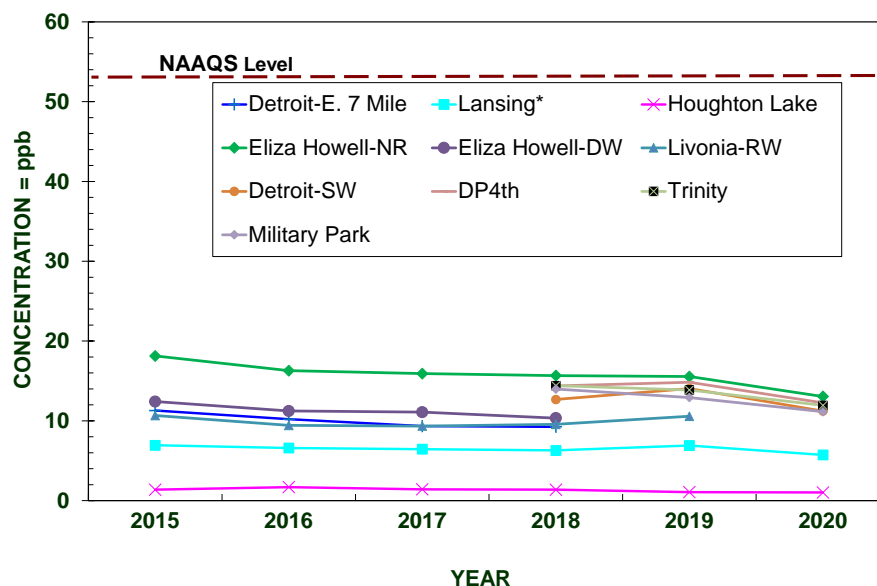
- Downwind urban scale site: Detroit-E 7 Mile in Detroit and Jenison for the Grand Rapids area.
- Near-roadway Network sites: Detroit Eliza Howell-NR site, the downwind site was shut down since it is not necessary for the near-road network. The Livonia roadway site needed to be moved since EGLE lost site access. A suitable replacement has not been found.
- NCore sites: Grand Rapids and Allen Park, monitor NO_y, which includes NO_x, nitric acid, and organic and inorganic nitrates (not used for attainment/nonattainment purposes).
- Photochemical Assessment Monitoring Station (PAMS) Network: The NO_x monitor at Detroit-E 7 Mile was switched to a NO_y for PAMS. Direct NO₂ will also be monitored at Detroit-E 7 Mile when the PAMS network is completely installed at this site.
- Background monitors for modeling: Lansing and Houghton Lake.
- GBIH project: Detroit-SW, DP4th, Trinity, and Military Park.

Figure 4.4: Nitrogen Dioxide (NO₂)/NO_y Monitors in 2020

Michigan's ambient NO₂ levels have always been well below the NAAQS. Since March 3, 1978, all areas in Michigan have been in attainment for the annual NO₂ NAAQS. As shown in **Figure 4.5**, all monitoring sites have had an annual NO₂ concentration at less than half of the 0.053 ppm NAAQS.

Even though there are no nonattainment areas for NO₂ in Michigan and monitoring for attainment purposes is not required, monitors continue to operate to support photochemical model validation work.

Figure 4.5: NO₂ Levels in MI from 2015-2020 (Annual Arithmetic Mean)**

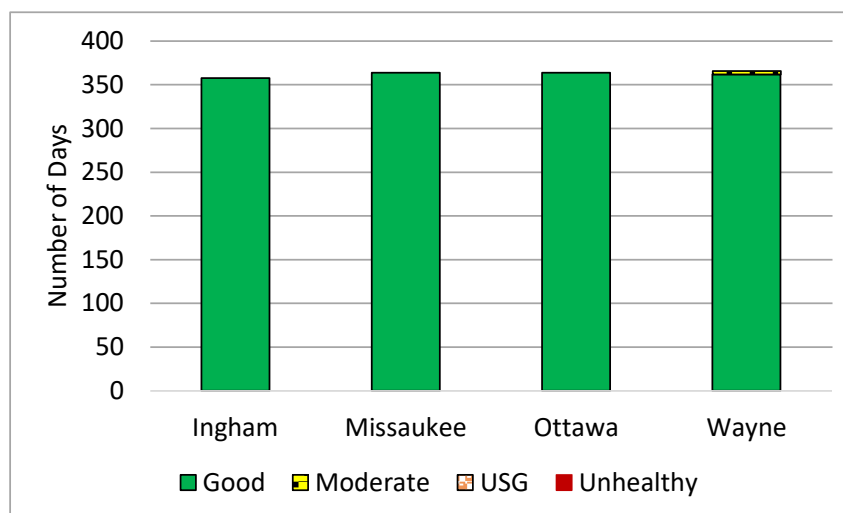


*Indicates site was moved in 2018 and concentrations were averaged together for both locations.

**Since Allen Park and Grand Rapids are monitoring NO_y, those sites are not included in graph.

Figure 4.6 shows the AQI values per day in counties where NO₂ is monitored. All days were in the good AQI range except for four days in Wayne County that were in the moderate AQI range.

Figure 4.6: 2020 AQI Days for NO₂ in Michigan Counties



CHAPTER 5: SULFUR DIOXIDE (SO₂)

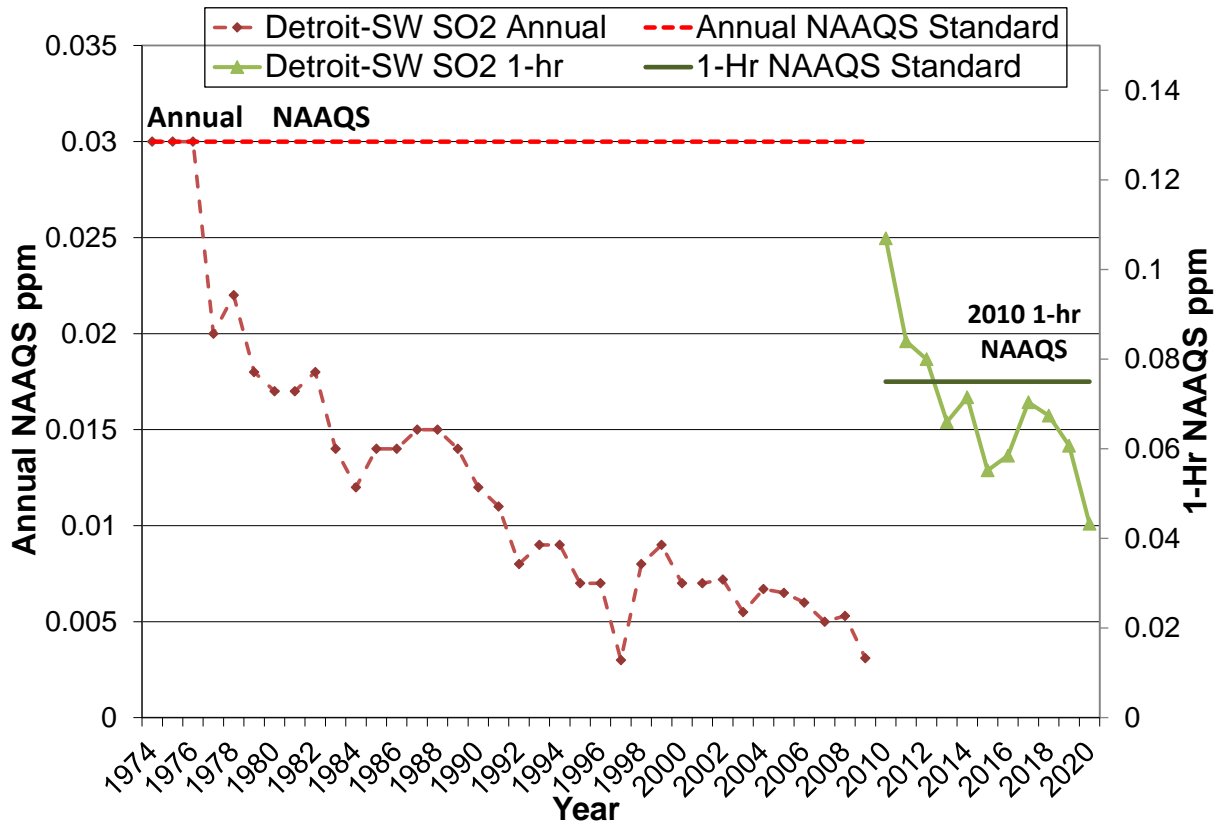
Sulfur dioxide is a gas formed by the burning of sulfur-containing material. Odorless at typical ambient concentrations, SO₂ can react with other atmospheric chemicals to form sulfuric acid. At higher concentrations it has a pungent, irritating odor like a struck match. When sulfur-bearing fuel is burned, the sulfur is oxidized to form SO₂, which then reacts with other pollutants to form aerosols. These aerosols can form particles in the air causing increases in PM_{2.5} levels. In liquid form, it is found in clouds, fog, rain, aerosol particles, and in surface films on these particles. In June 2010, the USEPA changed the primary SO₂ standard to a 99th percentile of 1-hour concentrations not to exceed 0.075 ppm, averaged over a 3-year period. The secondary standard has not changed and is a 3-hour average that cannot exceed 0.5 ppm once per year. Its sources and effects are presented below.

Sources: Coal-burning power plants are the largest source of SO₂ emissions. Other sources include industrial processes such as extracting metal from ore, and non-road transportation sources, and natural sources such as volcanoes. SO₂ and particulate matter are often emitted together.

Effects: Exposure to elevated levels can aggravate symptoms in asthmatics and cause respiratory problems in healthy groups. SO₂ and NO_x together are the major precursors to acid rain and are associated with the acidification of soils, lakes, and streams, as well as accelerated corrosion of buildings and monuments.

Population most at risk: Asthmatics, children, and the elderly are especially sensitive to SO₂ exposure. Asthmatics receiving short-term exposures during moderate exertion may experience reduced lung function and symptoms, such as wheezing, chest tightness, or shortness of breath. Depending on the concentration, SO₂ may also cause symptoms in people who do not have asthma.

Historical Trends: Southeast Michigan has been monitoring for SO₂ for over 45 years. **Figure 5.1** shows the SO₂ trend for the old annual standard and the new 1-hour standard for Detroit-SW. Michigan had been in attainment for SO₂ since 1982 with levels consistently well below the annual SO₂ NAAQS. In 2010, when the USEPA changed the standard from an annual average to a 1-hour standard, a portion of Wayne County was designated nonattainment. In September 2016, a portion of St. Clair County was also designated as nonattainment by the USEPA based on emissions and modeling. Even though the areas are in nonattainment for the 1-hour SO₂ standard, SO₂ concentrations have decreased at these sites and are currently under the NAAQS, although modeling results are not below the NAAQS.

Figure 5.1: Historical Annual and 1-hour SO₂ Averages at Detroit-SW

Figures 5.2 and 5.3 show SO₂ emission sources and SO₂ emissions by county (courtesy of the USEPA's State and County Emission Summaries).

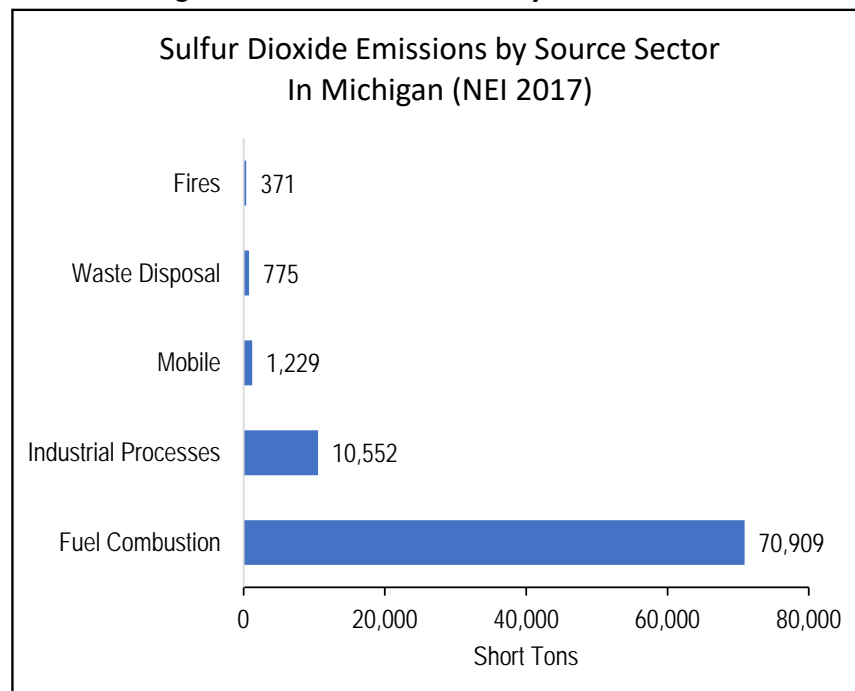
Figure 5.2: SO₂ Emissions by Source Sector

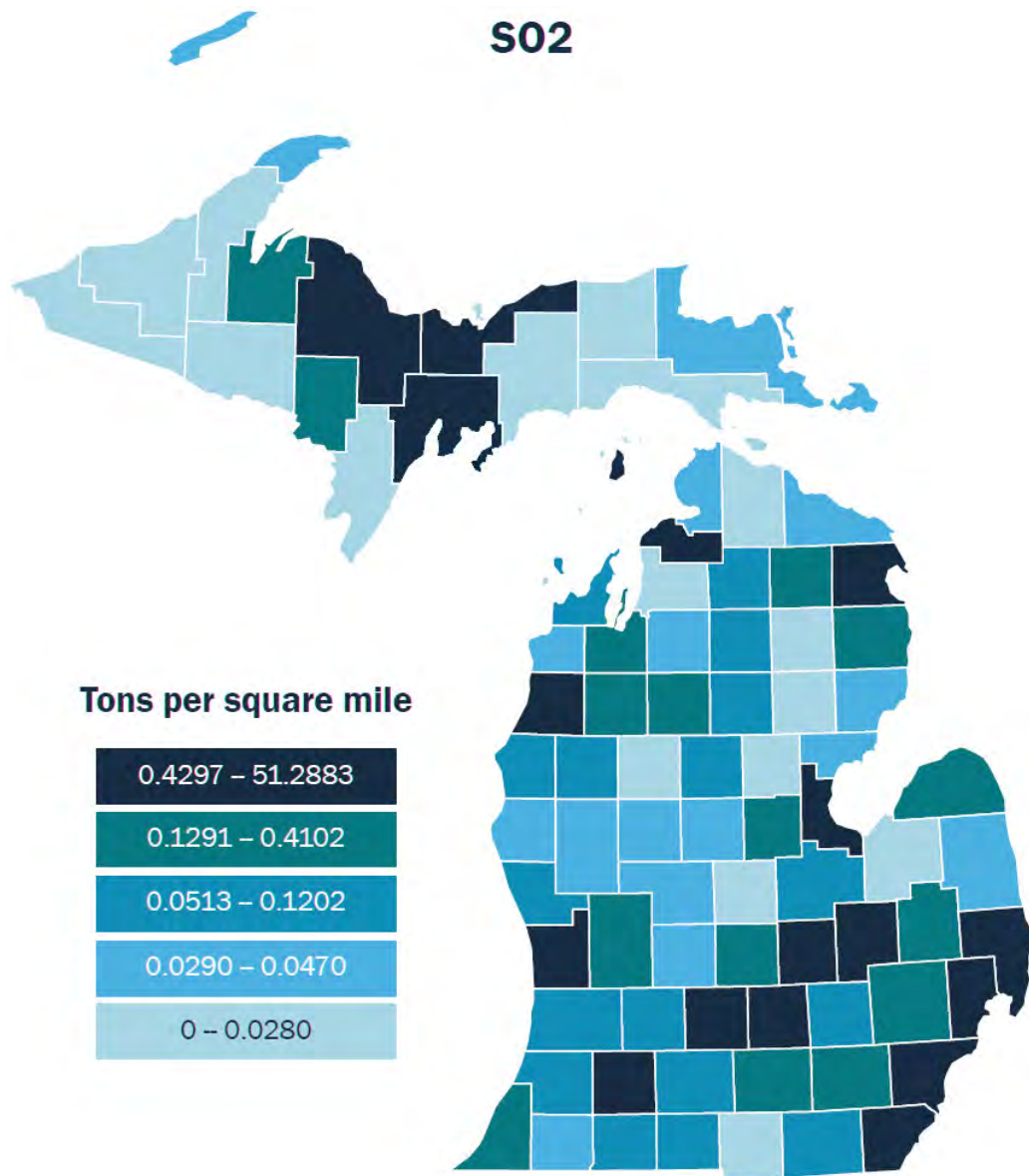
Figure 5.3: SO₂ Emissions in 2017 (NEI)

Figure 5.4 shows the location of each SO₂ monitor that operated in 2020.

- NCore sites: Allen Park and Grand Rapids have trace SO₂ monitors that have lower detection limits than traditional SO₂ monitors.
- Source-oriented sites: Lansing, Port Huron, Detroit-SW, Sterling State Park, West Olive.
- Community monitoring project: NMH 48217.
- GHIB project: DP4th, Trinity, and Military Park.

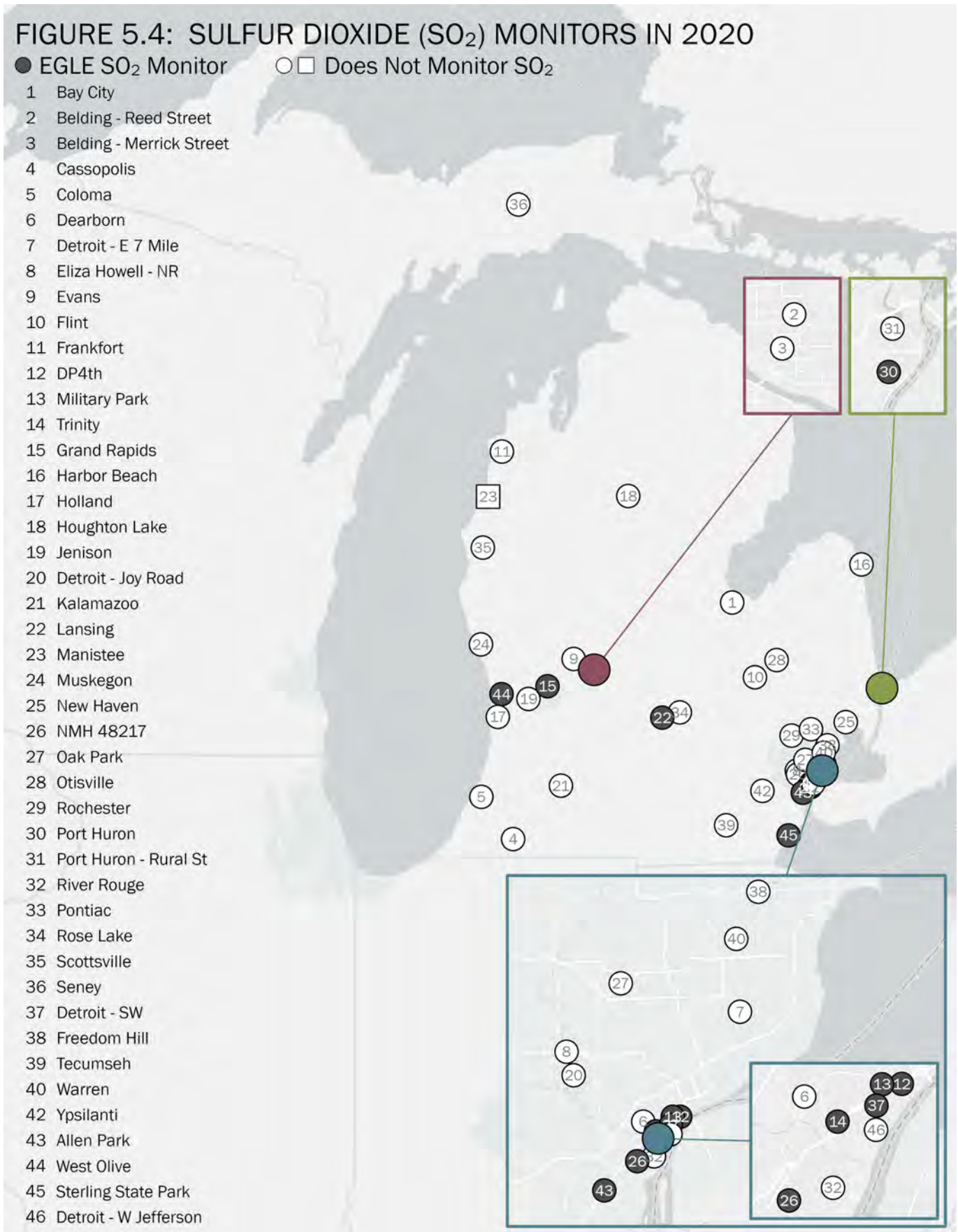
Figure 5.4: Sulfur Dioxide (SO₂) Monitors in 2020

Figure 5.5 shows that all the SO₂ sites in Michigan are below the standard even though there is a nonattainment area for SO₂. The standard is a three-year average, therefore having one point above the NAAQS level line does not mean the monitor is over the standard. SO₂ pollution is extremely variable and would require a large monitoring network to designate areas as attainment. Therefore, SO₂ attainment depends on both emission modeling and monitoring data.

The NCore sites, Grand Rapids and Allen Park, monitor for trace SO₂. For trend purposes, all SO₂ data are graphed together in **Figure 5.5**.

Figure 5.5: SO₂ Level in Michigan from 2015-2020 (1-Hour 99th Percentile)

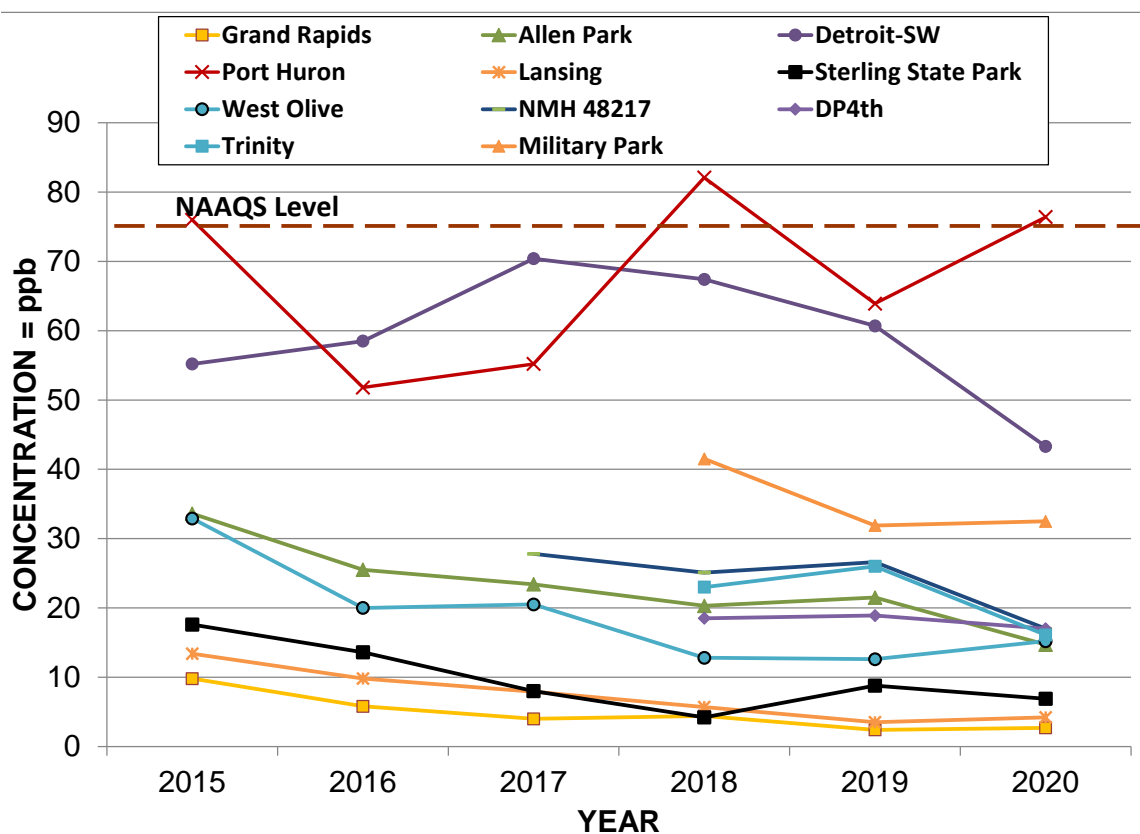
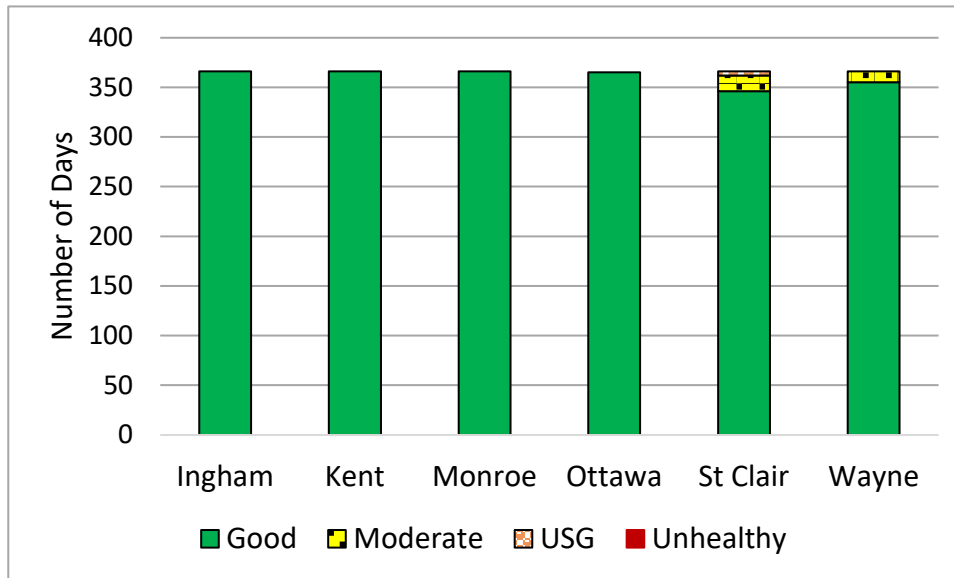


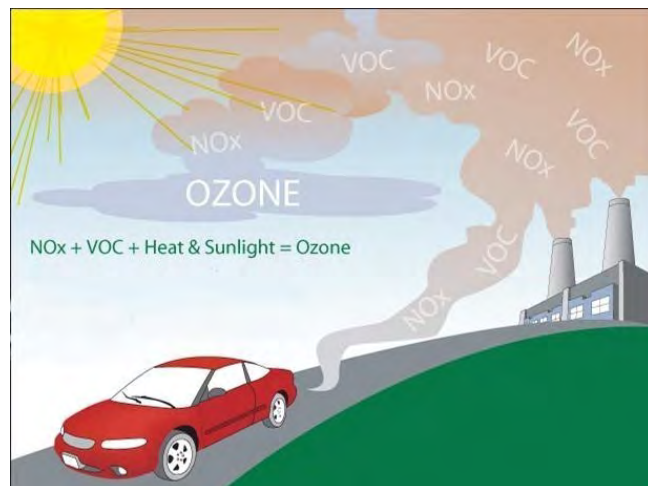
Figure 5.6 shows the AQI values per day in counties where SO₂ is monitored. All days were in the good AQI range except for 27 days in the moderate AQI range in St. Clair and Wayne Counties and four days in the Unsafe for Sensitive Groups (USG) in St. Clair County.

Figure 5.6: 2020 AQI Days for SO₂ in Michigan Counties



CHAPTER 6: OZONE (O₃)

Ground-level O₃ is created by reactions involving nitrogen oxides (NO_x) and volatile organic compounds (VOCs), or hydrocarbons, in the presence of sunlight as the illustration to the right depicts (image courtesy of the USEPA). These reactions usually occur during the hot summer months as ultraviolet radiation from the sun initiates a sequence of photochemical reactions. In Earth's upper atmosphere (the stratosphere), O₃ helps by absorbing much of the sun's ultraviolet radiation, but in the lower atmosphere (the troposphere), ozone is an air pollutant. O₃ is also a key ingredient of urban smog and can be transported hundreds of miles under certain meteorological conditions. Ozone levels are often higher in rural areas than in cities due to transport to regions downwind from the actual emissions of NO_x and VOCs. Shoreline monitors along Lake Michigan often measure high ozone concentrations due to transport from upwind states. The ozone NAAQS was revised by the USEPA and became effective in November 2015. It is a 3-year average of the 4th highest daily maximum 8-hour average concentration that must not exceed 0.070 ppm. The sources and effects of ozone follow.

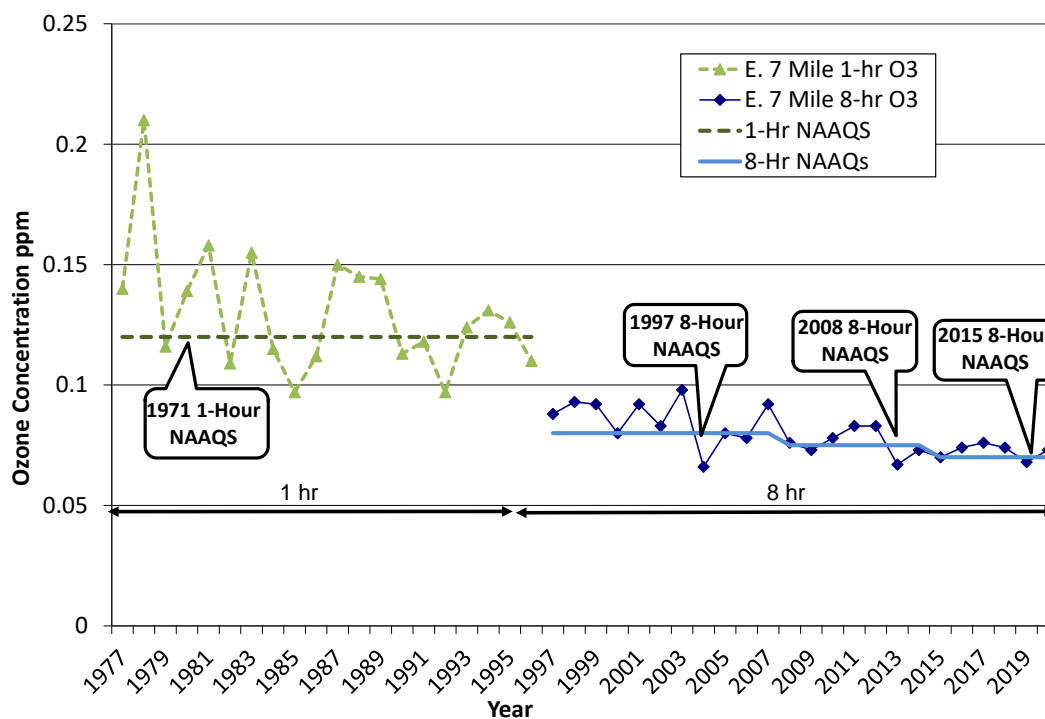


Sources: Major sources of NO_x and VOCs are engine exhaust, emissions from industrial facilities, combustion from power plants, gasoline vapors, chemical solvents, and biogenic emissions from natural sources. Ground-level O₃ can also be transported hundreds of miles under certain wind regimes. As a result, the long-range transport of air pollutants impacts the air quality of regions downwind from the actual area of formation.

Effects: Elevated O₃ exposure can irritate airways, reduce lung function, aggravate asthma and chronic lung diseases like emphysema and bronchitis, and inflame and damage the cells lining the lungs. Other effects include increased respiratory related hospital admissions with symptoms such as chest pain, shortness of breath, throat irritation, and cough. O₃ may also reduce the immune system's ability to fight off bacterial infections in the respiratory system, and long-term, repeated exposure may cause permanent lung damage. O₃ also impacts vegetation and forest ecosystems, including agricultural crop and forest yield reductions, diminished resistance to pests and pathogens, and reduced survivability of tree seedlings.

Population most at risk: Individuals most susceptible to the effects of O₃ exposure include those with a pre-existing or chronic respiratory disease, children who are active outdoors and adults who actively exercise or work outdoors.

Historical Trends: Southeast Michigan has been monitoring for ozone for over 40 years. **Figure 6.1** shows the ozone levels at the Detroit-E 7 Mile Road site. This graph shows how the standard changed from a 1-hour average of 0.120 ppm to an 8-hour average of 0.08 ppm in 1997. The standard was further lowered to 0.075 ppm in 2008 and to 0.070 ppm at the end of 2015. Ozone depends on weather conditions, so ozone concentrations are more variable than other pollutants. Ozone is also monitored primarily in warmer months. In the 2015 NAAQS, the ozone season was extended to by two months to March 1 to October 31.

Figure 6.1: Historical 1-hour and 8-hour Ozone at Detroit-E 7 Mile

Figures 6.2 and 6.3 show VOC emission sources and VOC emissions by county (courtesy of the USEPA's State and County Emission Summaries).

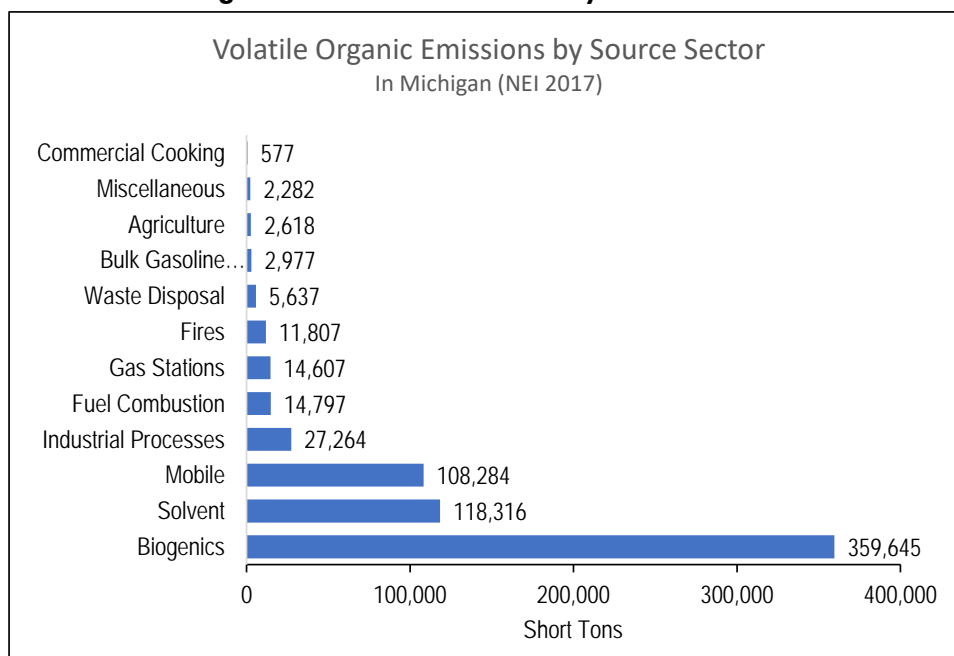
Figure 6.2: VOC Emissions by Source Sector

Figure 6.3: VOC Emissions in 2017

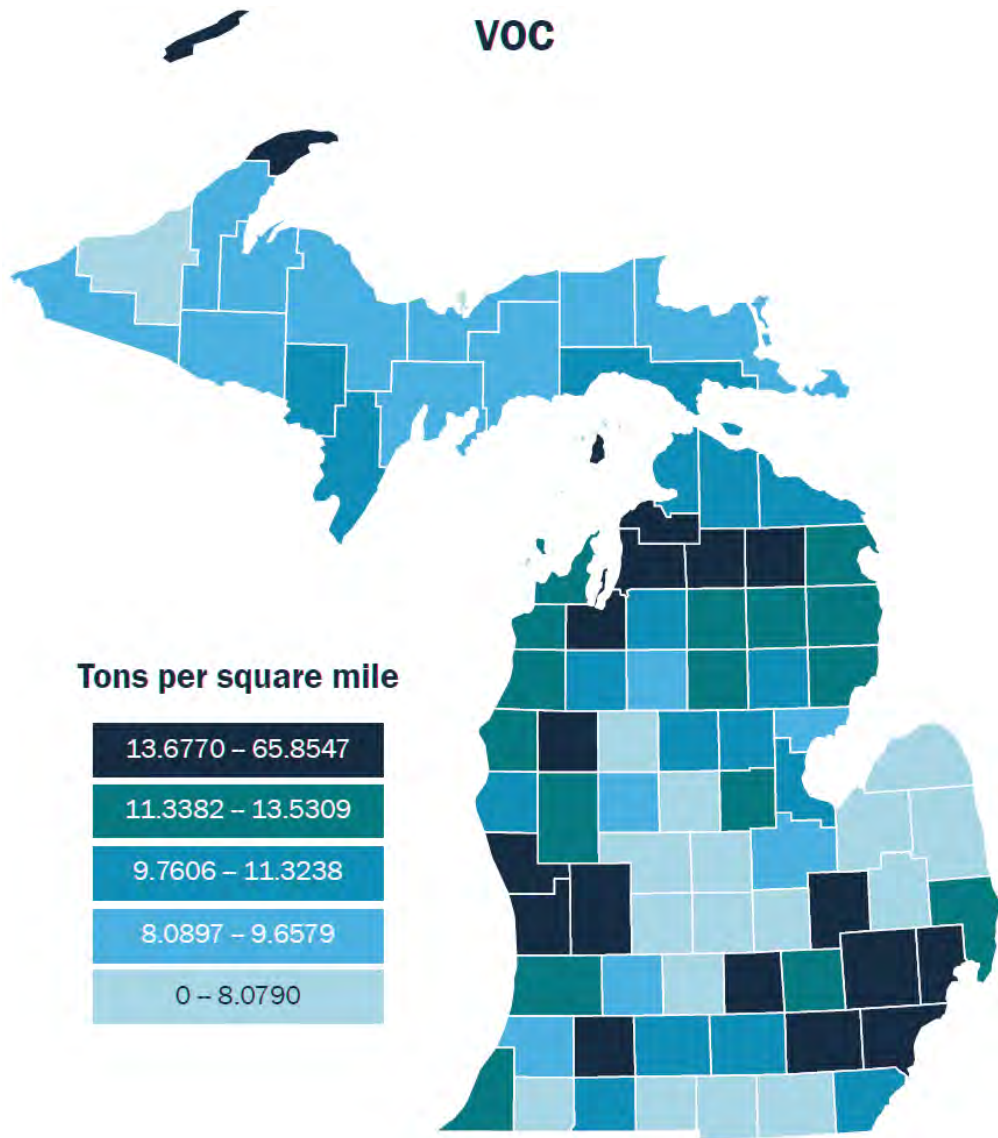


Figure 6.4 shows all O₃ air quality monitors active in Michigan at the beginning of the 2020 ozone season.

- Background site monitors: Houghton Lake, Scottville, Seney.
- Transport site monitors: Frankfort, Coloma, Harbor Beach, Holland, Muskegon, Tecumseh.
- Tribal site: Manistee
- Population-oriented monitors: All other sites.

Figure 6.4: Ozone Monitors in 2020

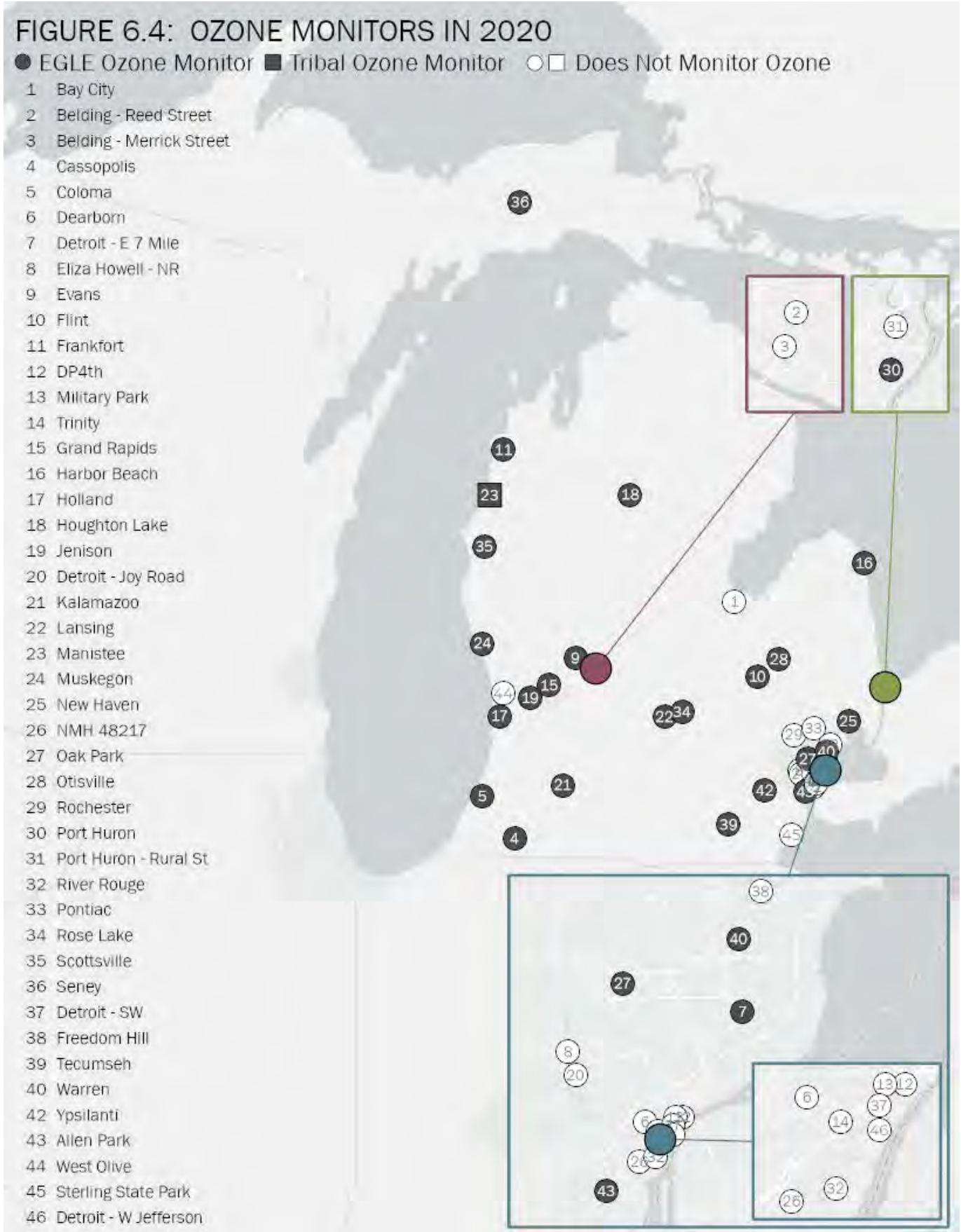


Table 6.1 shows the three-year averages of ozone. The USEPA uses these values (called design values) to determine attainment/nonattainment areas. The USEPA made their final designations for the 2015 standard on April 30, 2018 (effective August 3, 2018) based on 2014-2016 data. Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties were designated nonattainment in Southeast Michigan; and all of Berrien County, and portions of Allegan and Muskegon Counties were designated nonattainment in Western Michigan. In 2019 Berrien County was below the standard and a redesignation request was submitted to the USEPA in January 2020. Berrien County experienced elevated ozone in 2020. The USEPA has not yet acted on the submitted redesignation request.

The O₃ monitoring season in Michigan is from March 1 through October 31. During this time O₃ monitoring data is available for the public via the AQD's website (discussed in **Chapter 1**). However, year-round O₃ monitoring is conducted at the following four sites: Allen Park, Grand Rapids, Houghton Lake, and Lansing. This data helps in attainment designations, urban air quality and population exposure assessments.

Table 6.1: 3-Year Average of the 4th Highest 8-hour Ozone Values from 2016-2018, 2017-2019, and 2018-2020 (concentrations in ppm)

Areas	County	Monitor Sites	2016-2018	2017-2019	2018-2020
Detroit-Ann Arbor	Lenawee	Tecumseh	0.068	0.065	0.065
Detroit-Ann Arbor	Macomb	New Haven	0.072	0.068	0.071
Detroit-Ann Arbor	Macomb	Warren	0.069	0.066	0.068
Detroit-Ann Arbor	Oakland	Oak Park	0.073	0.070	0.072
Detroit-Ann Arbor	St. Clair	Port Huron	0.072	0.071	0.071
Detroit-Ann Arbor	Washtenaw	Ypsilanti	0.069	0.066	0.067
Detroit-Ann Arbor	Wayne	Allen Park	0.068	0.066	0.067
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	0.074	0.072	0.071
Flint	Genesee	Flint	0.068	0.064	0.065
Flint	Genesee	Otisville	0.068	0.063	0.065
Grand Rapids	Ottawa	Jenison	0.070	0.067	0.071
Grand Rapids	Kent	Grand Rapids	0.070	0.066	0.071
Grand Rapids	Kent	Evans	0.068	0.064	0.065
Muskegon Co	Muskegon	Muskegon	0.076	0.074	0.076
Allegan Co	Allegan	Holland	0.073	0.072	0.073
Huron	Huron	Harbor Beach	0.068	0.064	0.068
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	0.071	0.066	0.068
Lansing-East Lansing	Ingham	Lansing	0.068*	0.063	0.062
Lansing-East Lansing	Clinton	Rose Lake	0.069*	0.062	0.063
Benton Harbor	Berrien	Coloma	0.073	0.069	0.072
Benzie Co	Benzie	Frankfort	0.068	0.063	0.064
Cass Co	Cass	Cassopolis	0.074	0.070	0.071
Mason Co	Mason	Scottville	0.068	0.063	0.064
Missaukee Co	Missaukee	Houghton Lake	0.067	0.062	0.064
Manistee Co	Manistee	Manistee	0.066	0.064	0.059
Schoolcraft Co	Schoolcraft	Seney	0.064	0.059	0.063

Numbers in bold indicate 3-year averages over the 2015 ozone standard of 0.070 ppm.

*The three-year average is using data averaged from sites that were moved.

Tables 6.2 and 6.3 highlight the number of days when two or more O₃ monitors exceeded 0.070 ppm. It also specifies in which month they occurred and the temperature range.

Table 6.2: 2020 West Michigan Ozone Season

Daily High Temperature Range	Mar Days	Mar O ₃ Days	Apr Days	Apr O ₃ Days	May Days	May O ₃ Days	Jun Days	Jun O ₃ Days	Jul Days	Jul O ₃ Days	Aug Days	Aug O ₃ Days	Sep Days	Sep O ₃ Days	Oct Days	Oct O ₃ Days
≥ 95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90 ≤ 94	0	0	0	0	1	0	3	2	10	1	3	1	0	0	0	0
85 ≤ 89	0	0	0	0	2	0	10	4	5	1	11	0	1	0	0	0
80 ≤ 84	0	0	0	0	1	0	7	0	16	0	8	0	3	0	0	0
75 ≤ 79	0	0	1	0	2	0	5	0	0	0	8	0	9	0	1	0
70 ≤ 74	0	0	1	0	6	0	4	0	0	0	1	0	5	0	2	0
65 ≤ 69	0	0	2	0	5	0	1	0	0	0	0	0	4	0	8	0
60 ≤ 64	3	0	6	0	6	0	0	0	0	0	0	0	8	0	1	0
55 ≤ 59	3	0	5	0	4	0	0	0	0	0	0	0	0	0	5	0
50 ≤ 54	5	0	5	0	2	0	0	0	0	0	0	0	0	0	8	0
49 ≤	20	0	10	0	2	0	0	0	0	0	0	0	0	0	6	0
Totals	31	0	30	0	31	0	30	6	31	2	31	1	30	0	31	0

Days: Number of days during month when the daily high temperature falls within the specified temperature range.

O₃ Days: Number of days, during specified temperature range, when two or more area monitors exceeded 70 ppb.

West Michigan had six O₃ exceedance days in June; two in July and one in August when ozone exceeded 0.070 ppm at two or more ozone monitors. The temperatures on those days ranged between 85°F and 94°F.

Table 6.3: 2020 Southeast Michigan Ozone Season

Daily High Temperature Range	Mar Days	Mar O ₃ Days	Apr Days	Apr O ₃ Days	May Days	May O ₃ Days	Jun Days	Jun O ₃ Days	Jul Days	Jul O ₃ Days	Aug Days	Aug O ₃ Days	Sep Days	Sep O ₃ Days	Oct Days	Oct O ₃ Days
≥ 95	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
90 ≤ 94	0	0	0	0	0	0	3	2	9	2	4	0	0	0	0	0
85 ≤ 89	0	0	0	0	3	0	9	2	13	0	10	0	1	0	0	0
80 ≤ 84	0	0	0	0	2	0	10	1	7	0	8	0	6	0	0	0
75 ≤ 79	0	0	0	0	1	0	4	0	1	0	9	0	7	0	3	0
70 ≤ 74	0	0	2	0	5	0	3	0	0	0	0	0	5	0	4	0
65 ≤ 69	1	0	3	0	8	0	1	0	0	0	0	0	7	0	4	0
60 ≤ 64	4	0	6	0	6	0	0	0	0	0	0	0	4	0	4	0
55 ≤ 59	1	0	8	0	2	0	0	0	0	0	0	0	0	0	7	0
50 ≤ 54	7	0	3	0	2	0	0	0	0	0	0	0	0	0	4	0
49 ≤	18	0	8	0	2	0	0	0	0	0	0	0	0	0	5	0
Totals	31	0	30	0	31	0	30	5	31	3	31	0	30	0	31	0

Days: Number of days during month when the daily high temperature falls within the specified temperature range.

O₃ Days: Number of days, during specified temperature range, when two or more area monitors exceeded 70 ppb.

Southeast Michigan had five O₃ exceedance days in June, and three in July when ozone exceeded 0.070 ppm at two or more ozone monitors. The temperature for those days ranged between 80°F and 95°F.

Table 6.4 gives a breakdown of the O₃ days and the specific monitors that went over the standard in western, central/upper, and eastern Michigan in 2020.

**Table 6.4: 8-Hour Exceedance Days (>0.070 ppm) and Locations
Monitors with Exceedances of the Ozone Standard**

Date	Western Michigan	Central/Upper Mich.	Eastern Michigan	Total
5/26/2020			Harbor Beach	1
6/2/2020	Coloma, Evans, Grand Rapids, Holland, Jenison, Kalamazoo, Muskegon			7
6/4/2020			New Haven	1
6/5/2020	Cassopolis, Coloma		New Haven	3
6/9/2020		Houghton Lake	Flint, New Haven, Oak Park, Tecumseh, Ypsilanti	6
6/17/2020	Coloma, Cassopolis, Grand Rapids, Jenison, Kalamazoo	Seney	New Haven, Ypsilanti	8
6/18/2020	Frankfort, Cassopolis, Coloma, Grand Rapids, Holland, Jenison, Kalamazoo, Muskegon, Scottville	Seney	Harbor Beach, New Haven	12
6/19/2020	Frankfort, Cassopolis, Coloma, Evans, Grand Rapids, Holland, Jenison, Kalamazoo, Muskegon, Scottville	Seney	Harbor Beach, Oak Park	13
6/20/2020	Coloma, Grand Rapids, Holland, Jenison, Muskegon		Detroit-E 7 Mile, Harbor Beach, New Haven, Oak Park, Port Huron, Warren, Ypsilanti	12
7/2/2020			Detroit-E 7 Mile	1
7/6/2020			Detroit-E 7 Mile, Harbor Beach, New Haven, Oak Park, Warren	5
7/7/2020	Cassopolis, Kalamazoo		Allen Park, Detroit-E 7 Mile, New Haven, Oak Park, Tecumseh, Ypsilanti	8
7/9/2020			Allen Park, Harbor Beach, New Haven, Oak Park, Ypsilanti	5
7/15/2020			Harbor Beach	1
7/17/2020			New Haven	1
7/25/2020	Coloma, Holland			2
8/21/2020			New Haven	1
8/22/2020			New Haven	1
8/24/2020	Muskegon			1
8/26/2020	Grand Rapids, Holland, Jenison, Muskegon			4
TOTAL				93

On July 19, 2020, there were 13 monitors and on June 18 and June 20, 2020, there were 12 monitor readings that exceeded the level of the standard. The site with the most exceedances in the western region of Michigan was Coloma with seven. The central/upper Michigan sites had Seney with 3 exceedances. New Haven had 12 exceedances each in eastern Michigan.

Figure 6.5 shows the 4th highest 8-hour O_3 values for Southeast Michigan monitoring sites from 2015-2020. Detroit-E 7 Mile, New Haven, Oak Park, and Port Huron site violated the 3-year standard.

Figure 6.6 shows the 4th highest 8-hour O_3 values for Grand Rapids-Muskegon-Holland CSA. Muskegon, Holland, Grand Rapids, and Jenison violated the 3-year standard.

Figure 6.7 shows 4th highest 8-hour O_3 values for mid-Michigan. Cassopolis and Coloma violated the 3-year standard.

Figure 6.8 shows 4th highest 8-hour O_3 values for Northern Lower and Upper Peninsulas. No sites violated the 3-year standard.

Figure 6.5: O_3 Levels in Detroit-Warren-Flint CSA from 2015-2020 - (4th Highest 8-Hour O_3 Values).

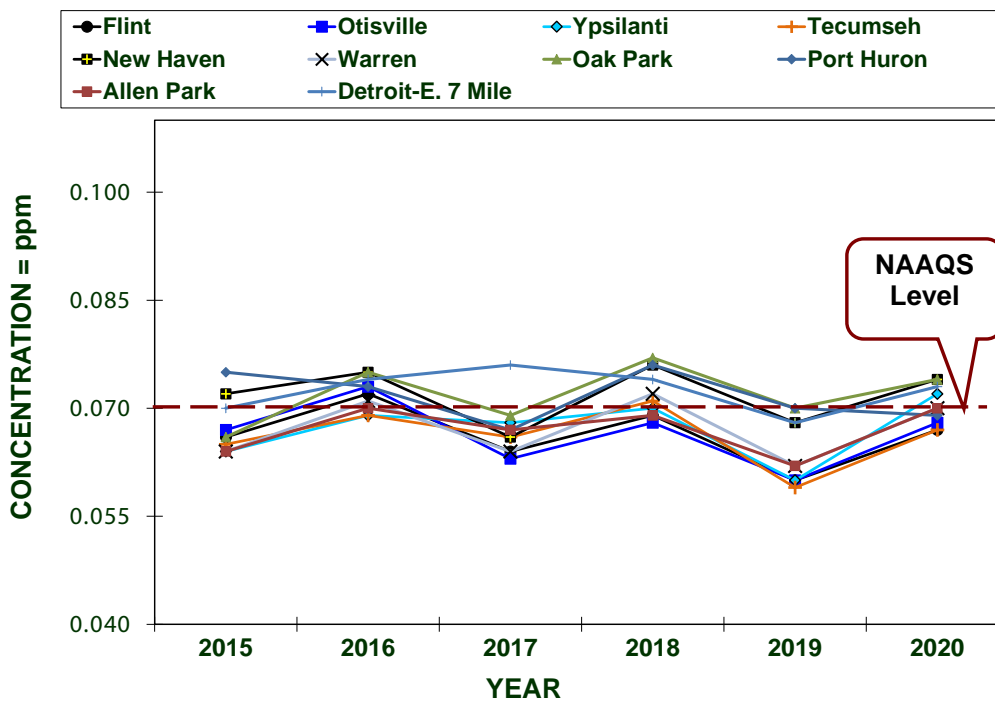


Figure 6.6: O₃ Levels in the Grand Rapids-Muskegon-Holland CSA from 2015-2020 (4th Highest 8-Hour O₃ Values)

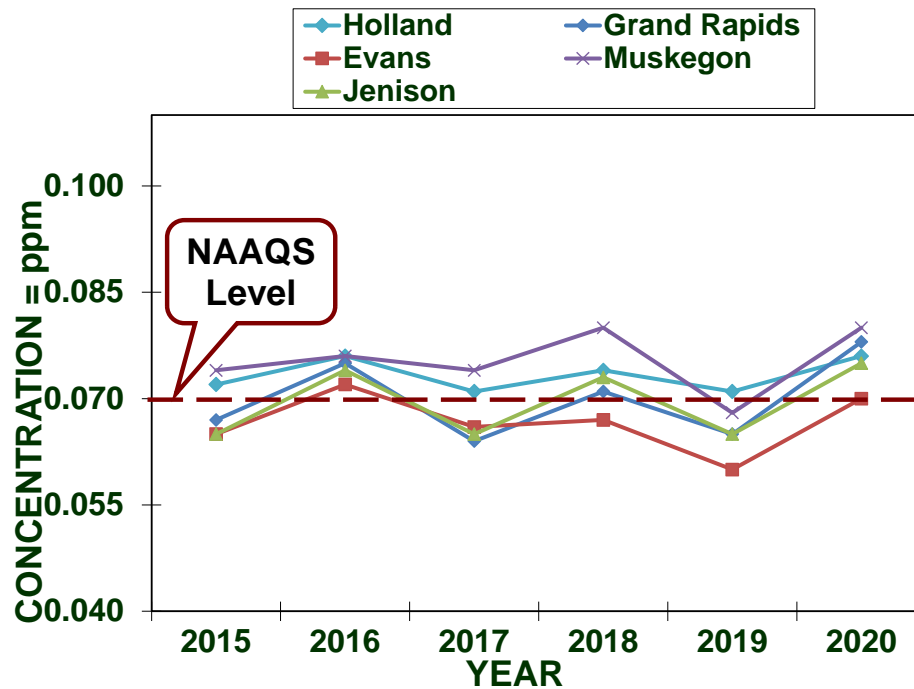


Figure 6.7: O₃ Levels in the Kalamazoo-Portage MSA, Lansing-E. Lansing-Owosso CSA, Niles-Benton Harbor MSA, & South Bend-Mishawaka (IN-MI) MSAs from 2015-2020 (4th Highest 8-Hour O₃ Values)

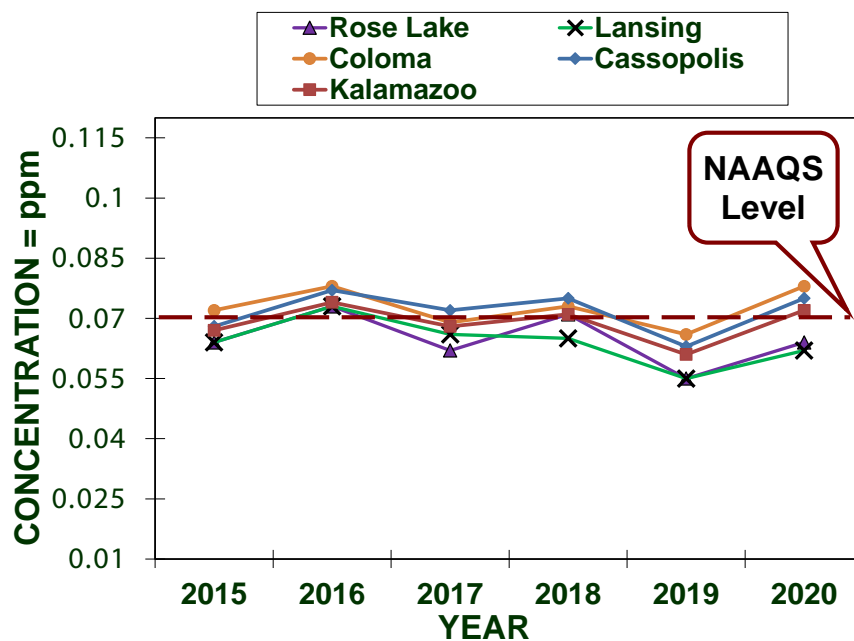


Figure 6.8: O₃ Levels in MI's Northern Lower and Upper Peninsula Areas from 2015-2020 (4th Highest 8-Hour O₃ Values)

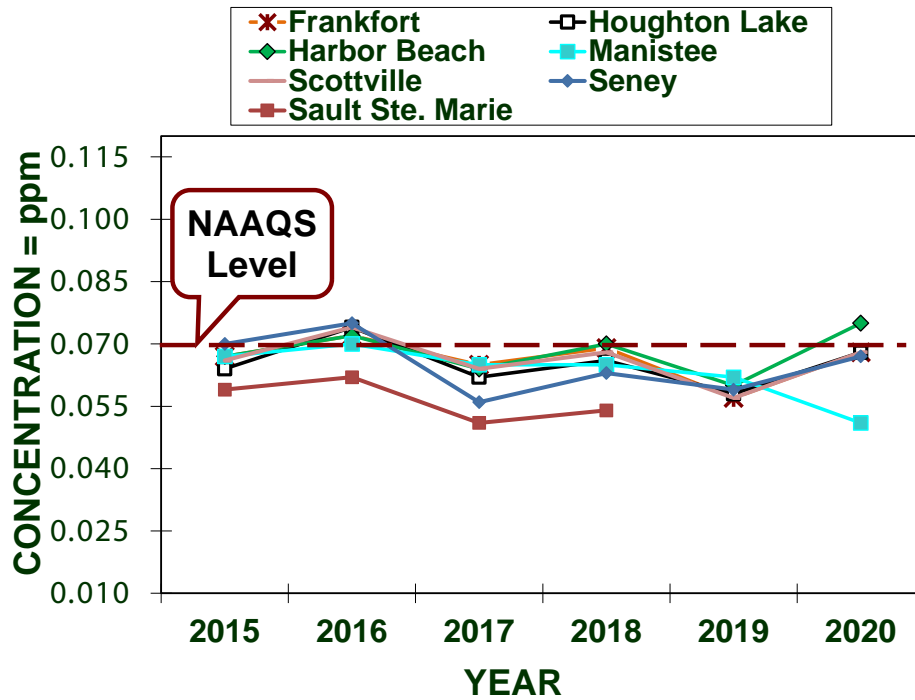
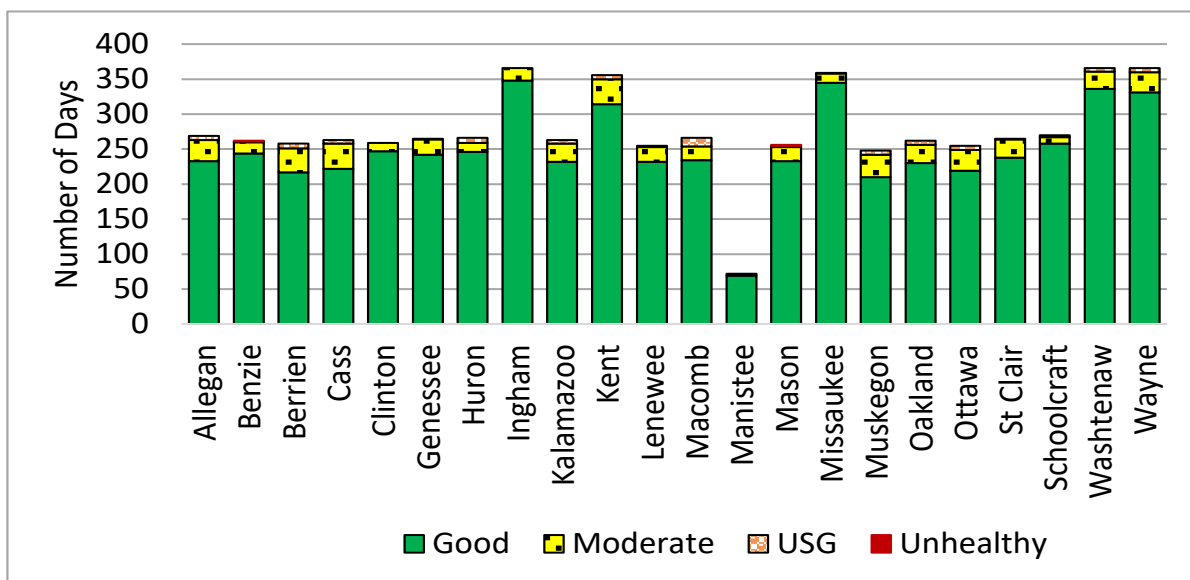


Figure 6.9 shows the AQI values per day in counties where ozone is monitored. Most days were in the good to moderate AQI range. Most counties had a few days in the USG range, Macomb County having the most USG days with 12 days. Two counties had one day each in the unhealthy AQI range: Benzie and Mason Counties.

Figure 6.9: 2020 AQI Days for Ozone in Michigan Counties



CHAPTER 7: PARTICULATE MATTER (PM₁₀, PM_{10-2.5}, PM_{2.5}, PM_{2.5} CHEMICAL SPECIATION AND TSP)

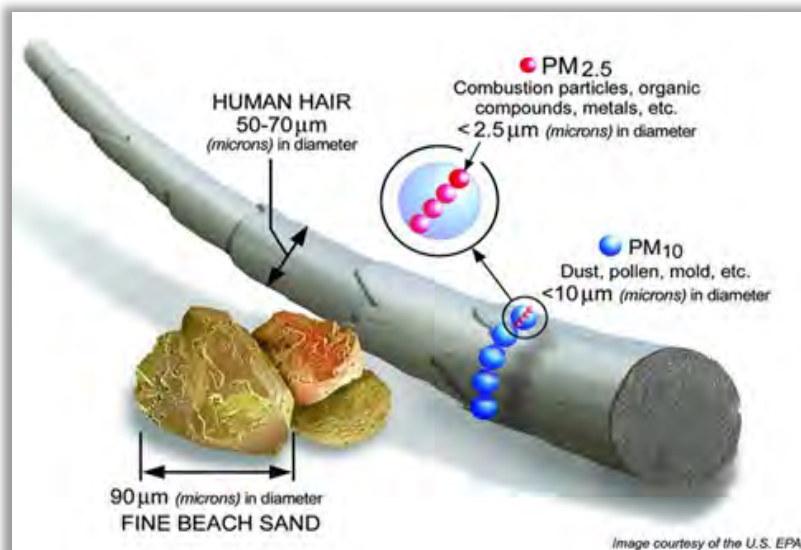
Particulate matter (PM) is a general term used for a mixture of solid particles and liquid droplets (aerosols) found in the air. These are further categorized according to size; larger particles with diameters of less than 50 micrometers (μm) are classified as total suspended particulates (TSP). PM₁₀ consists of “coarse particles” less than 10 μm in diameter (about one-seventh the diameter of a human hair) and PM_{2.5} are much smaller “fine particles” equal to or less than 2.5 μm in diameter. PM₁₀ has a 24-hour average standard of 150 $\mu\text{g}/\text{m}^3$ not to be exceeded more than once per year over 3 years. PM_{2.5} has an annual average standard of 12 $\mu\text{g}/\text{m}^3$, and a 98th percentile 24-hour concentration of 35 $\mu\text{g}/\text{m}^3$ averaged over 3 years. The sources and effects of PM are as follows:

Sources: PM can be emitted directly (primary) or may form in the atmosphere (secondary). Most man-made particulate emissions are classified as TSP. PM₁₀ consists of primary particles that can

originate from power plants, various manufacturing processes, wood stoves and fireplaces, agriculture and forestry practices, fugitive dust sources (road dust and windblown soil), and forest fires. PM_{2.5} can come directly from primary particle emissions or through secondary reactions that include VOCs, SO₂, and NO_x emissions originating from power plants, motor vehicles (especially diesel trucks and buses), industrial facilities, and other types of combustion sources.

Effects: Exposure to PM can aggravate existing cardiovascular ailments and even cause death in susceptible populations. PM may affect breathing and the cellular defenses of the lungs and has been linked with heart and lung disease. Smaller particles (PM₁₀ or smaller) pose the greatest problems, because they can penetrate deep in the lungs and possibly into the bloodstream. PM is the major cause of reduced visibility in many parts of the United States. PM_{2.5} is considered a primary visibility-reducing component of urban and regional haze. Airborne particles impact vegetation ecosystems and damage paints, building materials and surfaces. Deposition of acid aerosols and salts increases corrosion of metals and impacts plant tissue.

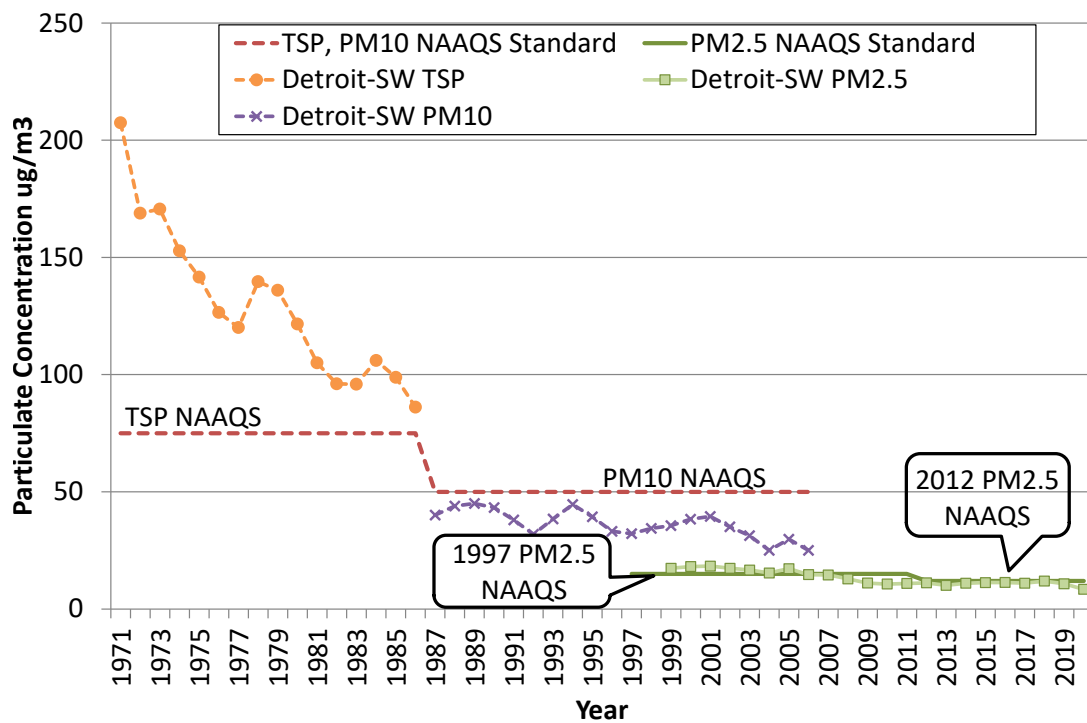
Population most at risk: People with heart or lung disease, the elderly, and children are at highest risk from exposure to PM.



Historical Trends: Southeast Michigan has been monitoring for particulate for over 40 years. **Figure 7.1** shows the trends for particulate matter. In 1971, the USEPA promulgated an annual and 24-hour particulate standard based on total suspended particulates (TSP). In 1987, the USEPA changed the standard to PM_{10} . Health studies indicated that particles smaller than 10 microns affect respiration. In 1997, the USEPA added additional NAAQS for a smaller particle fraction size, $PM_{2.5}$, which can get deeper into the lungs and possibly into the blood stream. In 2006, the USEPA revoked the PM_{10} annual standard but kept the PM_{10} 24-hour standard. The $PM_{2.5}$ 24-hour standard was also reduced from $65 \mu\text{g}/\text{m}^3$ to $35 \mu\text{g}/\text{m}^3$. In 2012, the USEPA reduced the annual standard from $15 \mu\text{g}/\text{m}^3$ to $12 \mu\text{g}/\text{m}^3$.

Particulate trends show that particulate concentrations have decreased, and the state is in compliance for all particulate NAAQS; however, Michigan has had past nonattainment issues in Southeast Michigan for TSP, PM_{10} and $PM_{2.5}$.

Figure 7.1: Historical Annual Particulate Matter at Detroit-SW



PM₁₀

Figures 7.2 and 7.3 show PM₁₀ emission sources and PM₁₀ emissions by county (courtesy of the USEPA's State and County Emission Summaries).

Figure 7.2: PM₁₀ Emissions by Source Sector

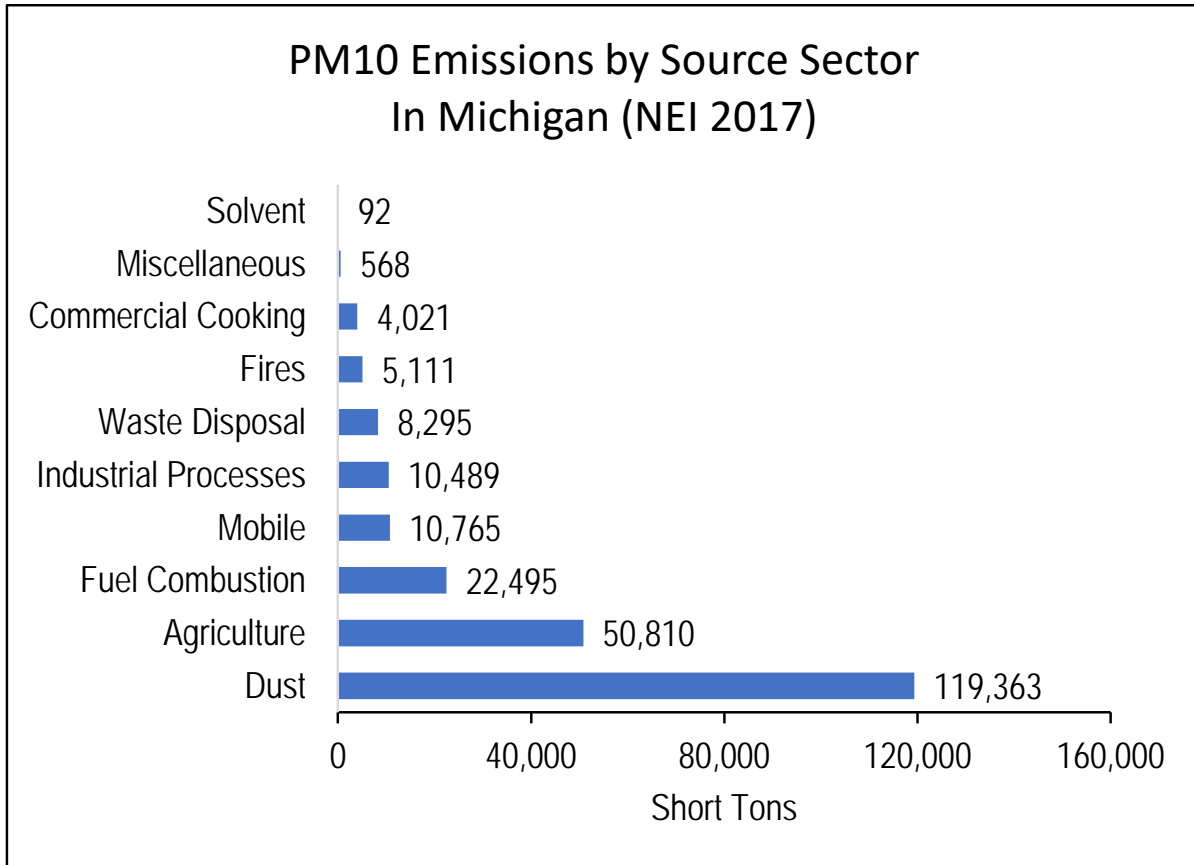
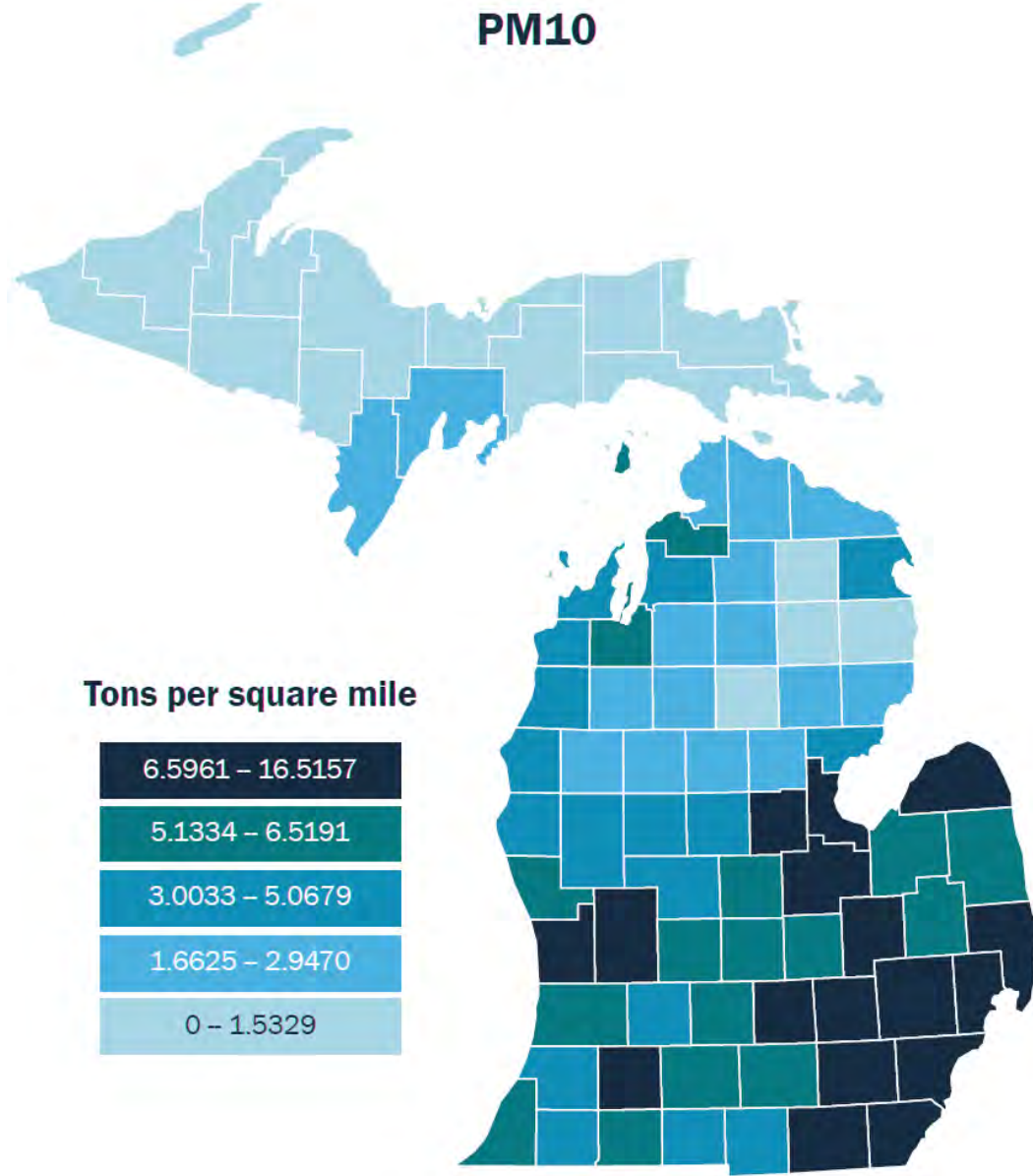


Figure 7.3: PM₁₀ Emissions in 2017

Since October 1996, all areas in Michigan have been in attainment with the PM₁₀ NAAQS. Due to the recent focus upon PM_{2.5} and because of the relatively low concentrations of PM₁₀ measured in recent years, Michigan's PM₁₀ network has been reduced to a minimum level. Table 1.2 identifies the locations of PM₁₀ monitoring stations that were operating in Michigan during 2020. These monitors are located mostly in the state's largest populated urban areas: three in the Detroit area and two in Grand Rapids. In late fall of 2020, Grand Rapids, Jenison, and Allen Park PM₁₀ continuous monitors (T640X), which also collect PM_{2.5} data, were installed. However, filter-based instruments were shut down on January 1, 2021, so the continuous instruments will not be reported in the 2020 report.

Figure 7.4 shows the location of each PM₁₀ monitor. All PM₁₀ monitors are population-oriented monitors. A second PM₁₀ monitor was added to the Grand Rapids area in Jenison (**Figure 7.5**) based on the USEPA's population requirements.

Figure 7.4: PM₁₀ Monitors in 2020

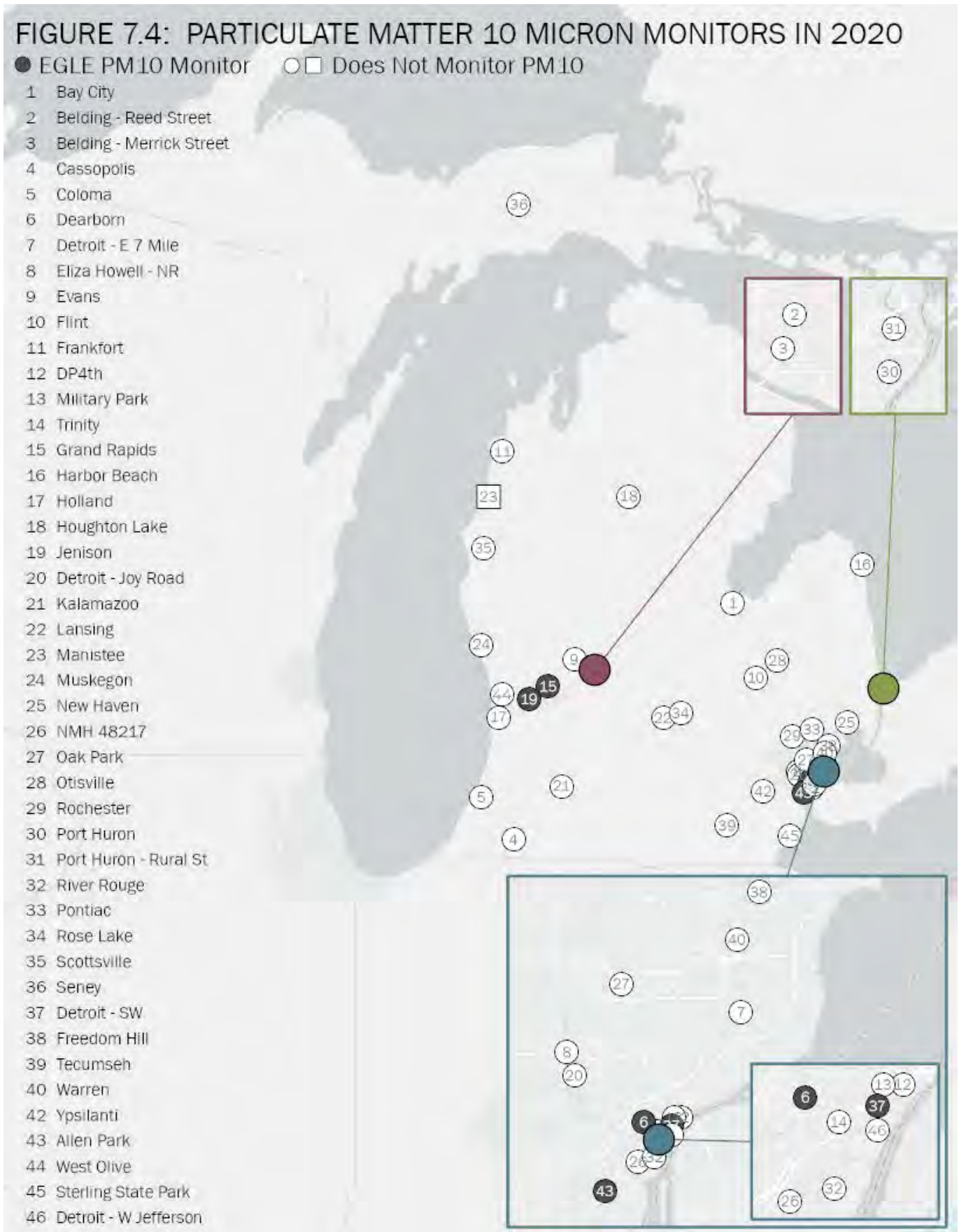


Figure 7.5 shows the PM_{10} levels in Michigan compared to the 24-hour average NAAQS of $150 \mu\text{g}/\text{m}^3$. This standard must not be exceeded on average more than once per year over a 3-year period. The design value is the 4th highest value over a 3-year period. The PM_{10} levels at all sites in Michigan are well below the national standard.

Figure 7.5: 24-Hour PM_{10} Design Value

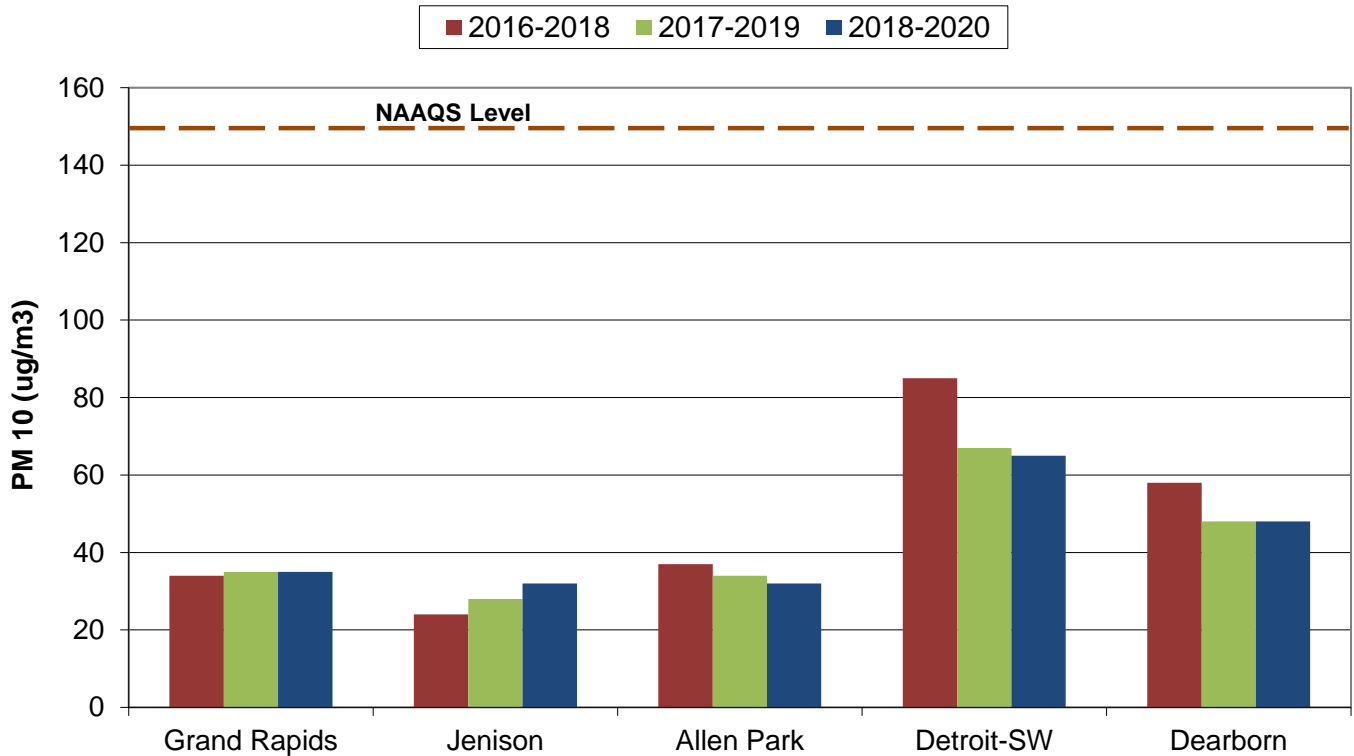
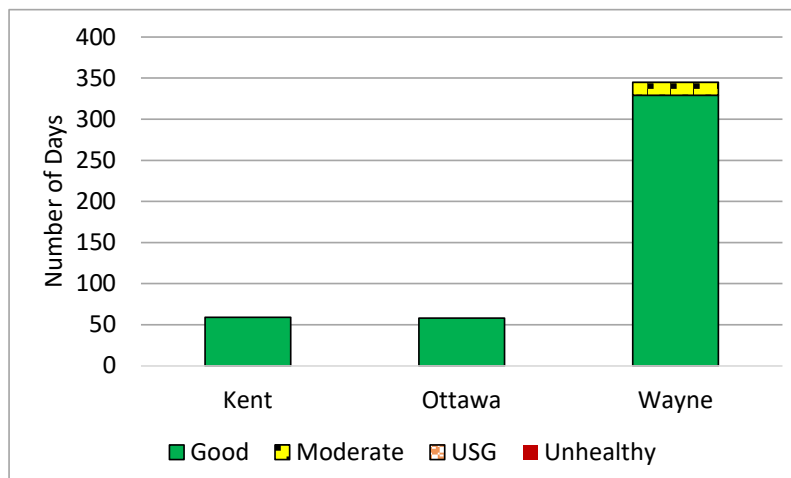


Figure 7.6 shows the AQI values per day in counties where PM_{10} is monitored. All days were in the good AQI range except for 16 days in the moderate AQI range in Wayne County.

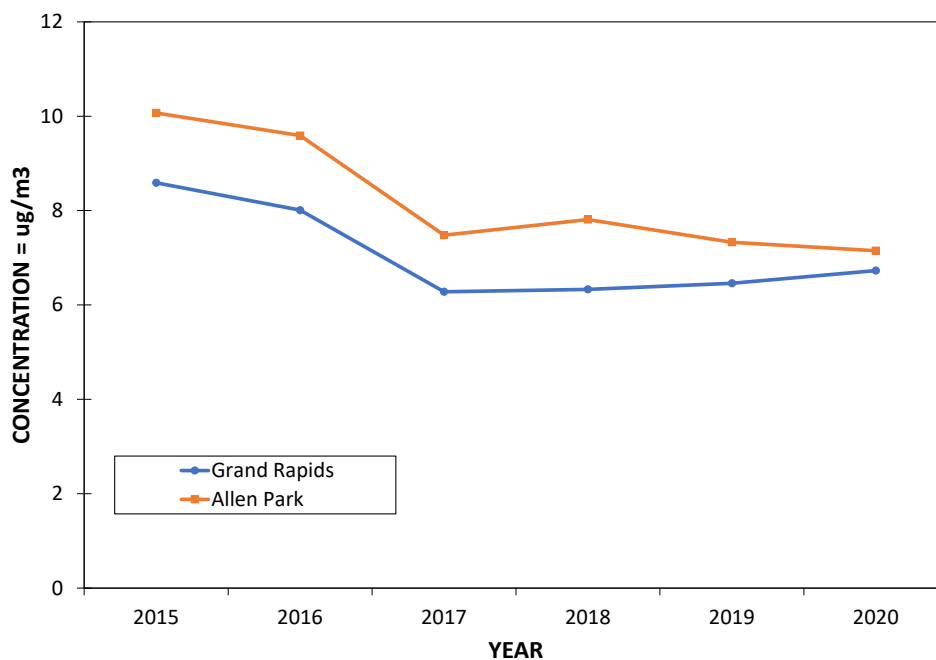
Figure 7.6: 2020 AQI Days for PM_{10} in Michigan Counties



PM_{10-2.5}

The 2006 amended air monitoring regulations specified that measurements of PM coarse (PM_{10-2.5}) needed to be added to the NCore sites.⁷ EGLE began PM coarse monitoring at Allen Park and Grand Rapids in 2010. **Figure 7.7** shows the PM_{10-2.5} levels in Michigan.

Figure 7.7: PM Coarse Levels in Michigan from 2015-2020 (Annual Arithmetic Mean)



PM_{2.5}

In December 2012, the USEPA revised the annual primary standard to 12 µg/m³ while the annual secondary standard remained at 15 µg/m³. The primary and secondary 24-hour standard remained at 35 µg/m³. In December 2014, the USEPA determined that no area in Michigan violated the 2012 standard and the state was classified as unclassifiable/attainment.

Figures 7.8 and 7.9 show PM_{2.5} emission sources and PM_{2.5} emissions by county (from the USEPA's State and County Emission Summaries).

⁷ Current information can be found at www3.epa.gov/ttn/amtic/ncoreguidance.html.

Figure 7.8: PM_{2.5} Emissions by Source Sector

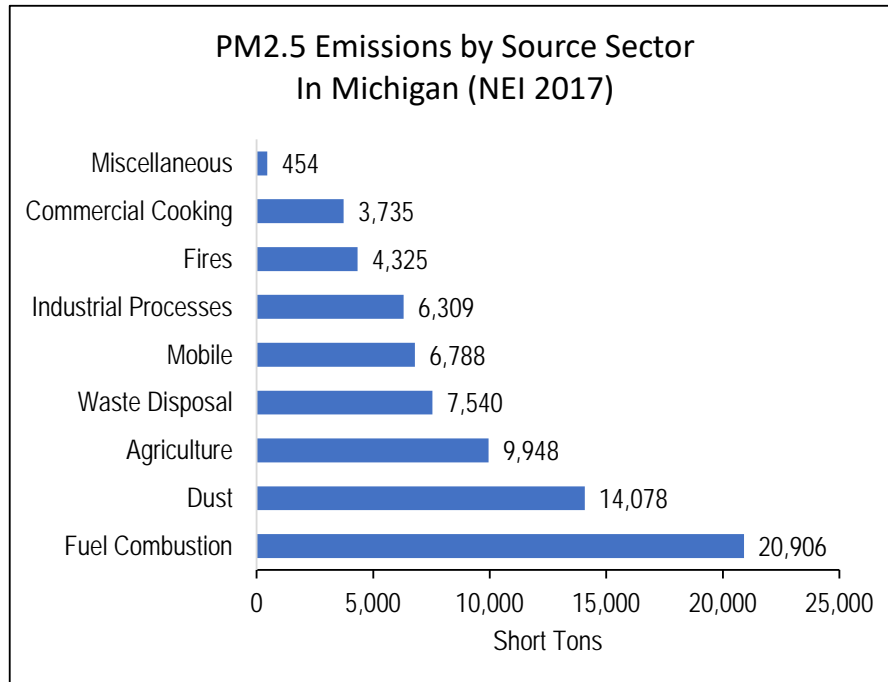
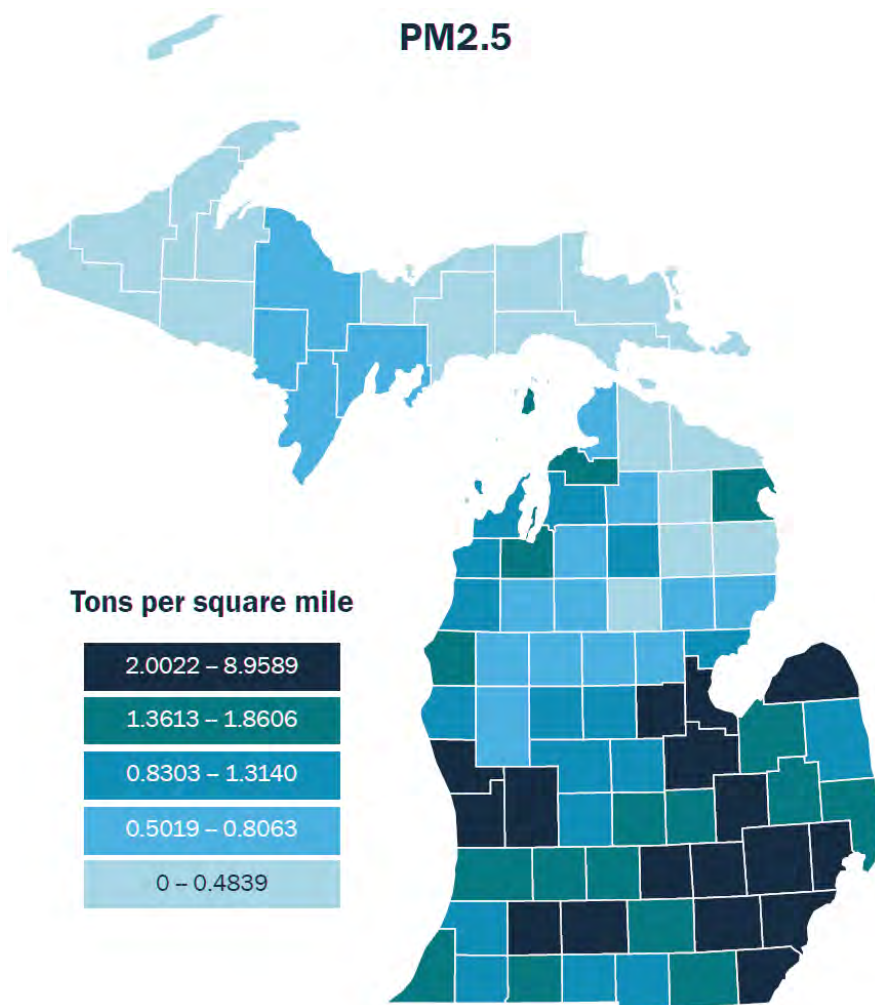


Figure 7.9: PM_{2.5} Emissions in 2017



Fine particulate matter ($PM_{2.5}$) is measured using three techniques: a filter-based FRM, Continuous Methods, and Chemical Speciation Methods. These methods are described in more detail in Appendix A.

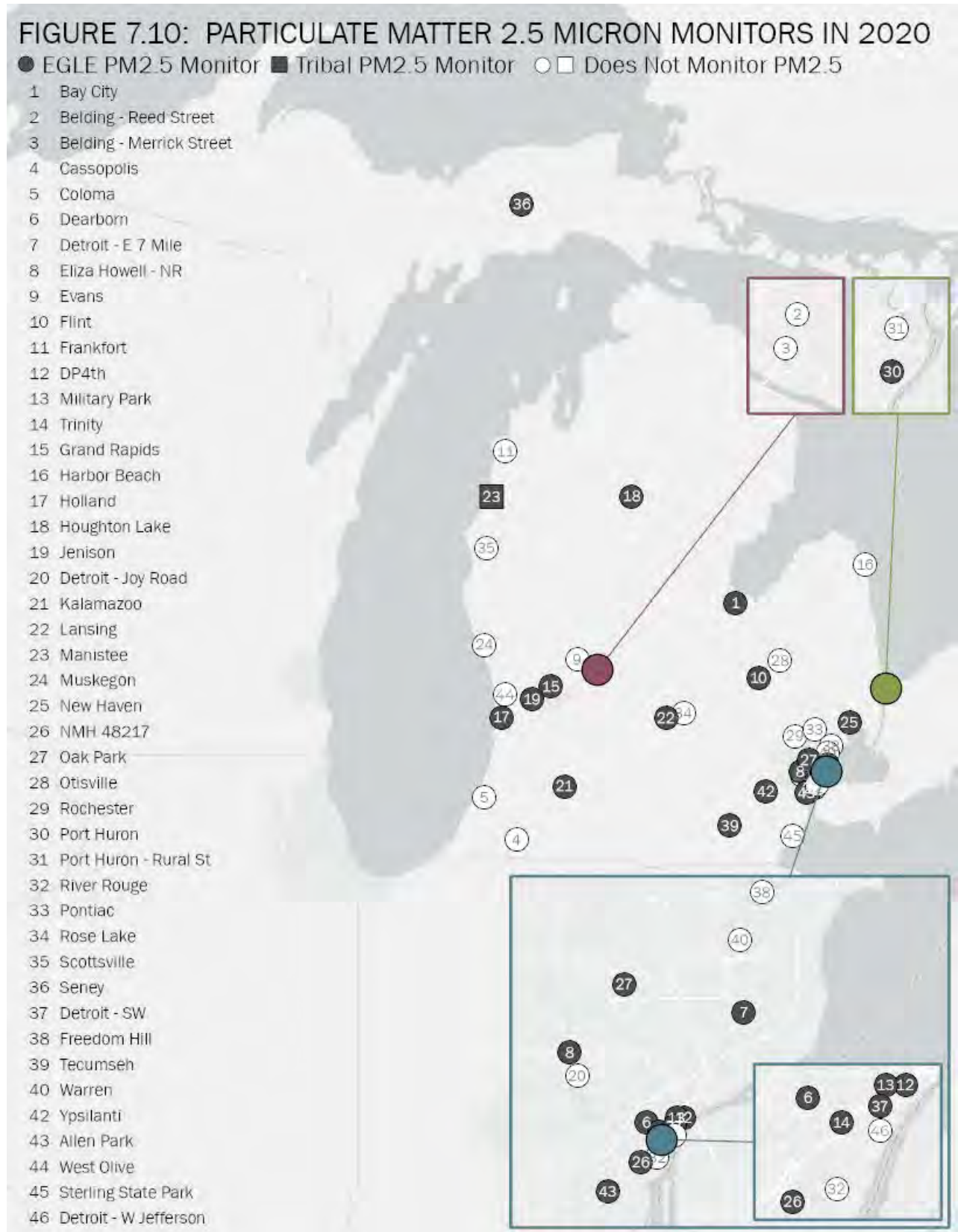
Figure 7.10 shows the location of each $PM_{2.5}$ monitor.

$PM_{2.5}$ FRM Monitoring Network: $PM_{2.5}$ FRM filter-based monitors are deployed to characterize background or regional $PM_{2.5}$ transport collectively from upwind sources as well as population-oriented sites. Several changes occurred in the FRM network in 2020.

- Loss of site access shut down: Livonia Near-road will be relocated, but a suitable replacement site has not been found yet.
- Collocation sites: Five $PM_{2.5}$ FRM monitoring sites are collocated with PM_{10} monitors to allow for $PM_{2.5}$ and PM_{10} comparisons.⁸ Collocated PM_{10} and $PM_{2.5}$ sites include Dearborn and Detroit-SW. Allen Park, Grand Rapids, and Jenison also have collocated PM_{10} and $PM_{2.5}$ but monitors were switched from FRMs and TEOMs to continuous FEM T640X beginning January 1, 2021, which measure PM_{10} , $PM_{2.5}$ and PM coarse. The T640X particulate instruments determine the concentration of particulates in the air using a light scattering technique. The T640x is FEM for both $PM_{2.5}$ and PM_{10} and then it subtracts the two to get PM coarse.
- Switched FRM to BAMs: Holland, Bay City, and Ypsilanti (collocated with secondary FRM).
- Switched FRMs to T640s: Kalamazoo, New Haven, and Port Huron were switched to T640s in the fall, but FRMs were collocated at these sites until January 1, 2021. No T640 data is reported in 2020 for these sites. The T640 particulate instruments determine the concentration of particulates in the air using a light scattering technique, but the T640 primarily is used to measure $PM_{2.5}$.

⁸ Requirements for $PM_{2.5}$ FRM sites are obtained from the Revised Requirements for Designation of Reference and Equivalent Methods for $PM_{2.5}$ and Ambient Air Quality Surveillance for PM [62 FR 38763]; Guidance for Using Continuous Monitors in $PM_{2.5}$ Monitoring Networks [EPA-454/R-98-012, May 1998]; and Appendix N to Part 50 - Interpretation of the National Ambient Air Quality Standards for PM [40 CFR Part 50, July 1, 1998].

Figure 7.10: PM_{2.5} Monitors in 2020



Continuous PM_{2.5} Network: Short-term measurements of PM_{2.5} or PM₁₀ are updated on an hourly basis using TEOM, BAM or T640 instruments. At least one continuous monitor is required at the NCore PM_{2.5} monitoring site in a metropolitan area with a population greater than one million. Both Detroit (Allen Park) and Grand Rapids meet this requirement.⁹ Under the revised 2006 air monitoring regulations, 50 percent of the FRM monitoring sites are now required to have a continuous PM_{2.5} monitor. For Michigan, there are 13 FRM monitoring sites, 7 of which also had TEOMs or BAMs.

- T640 replaced TEOMS: Lansing switched to a T640 monitor in September 2020 and is running a collocated filter-based FRM. The T640 data will not be reported until 2021.
- GHIB project: DP4th, Trinity, Military Park and Detroit-SW were switched from BAMs to T640s in fall 2020. These T640 data are reported in the 2020 report.

Speciation Monitors: Speciation monitors consist of filter-based, 24-hour monitors and continuous speciation monitors, aethalometers. Continuous monitors are used to determine diurnal changes in PM_{2.5} composition.

- 24-hour speciation monitors: Allen Park and Grand Rapids (NCore sites), Dearborn (NATTS site), and Detroit-SW. The Tecumseh speciation monitor was shut down in 2019. These monitors are placed in population-oriented stations in both urban and rural locations. PM_{2.5} chemical speciation samples are collected over a 24-hour period and analyzed to determine various components of PM_{2.5}. The primary objectives of the chemical speciation monitoring sites are to provide data that will be used to determine sources of poor air quality and to support the development of attainment strategies. Historical speciation data for Michigan indicates that PM_{2.5} is made up of 30 percent nitrate compounds, 30 percent sulfate compounds, 30 percent organic carbon,¹⁰ and 10 percent unidentified or trace elements.
- Aethalometers: Allen Park, Dearborn, and the GHIB project (DP4th, Trinity, Military Park, and Detroit-SW started in 2018). These continuous monitors measure black carbon, a combustion by-product typical of transportation sources.

Table 1.2 in [Chapter 1](#) shows all of Michigan's PM_{2.5} FRM monitoring stations operating in 2020 and denotes which sites have TEOM, FEM, Speciation, or Aethalometer monitors in operation.

⁹ Under the Guidance for Using Continuous Monitors in PM_{2.5} Monitoring Networks [EPA-454/R-98-012, May 1998].

¹⁰ To better understand the chemical composition of the organic carbon fraction, several studies have been conducted in Southeast Michigan to further investigate organic carbon. Information can be found in the Michigan 2012 Ambient Air Monitoring Network Review, available at http://www.michigan.gov/documents/deq/deq-aqd-aqe-2012-Air-Mon-Network-Review_357137_7.pdf

Table 7.1 provides the design value, the 3-year average of the annual mean PM_{2.5} concentrations for 2018-2020. Michigan's levels are below the 12 µg/m³ primary standard.¹¹

Table 7.1: 3-Year Average of the Annual Mean PM_{2.5} Concentrations for 2018-2020

Areas	County	Monitoring Sites	2018	2019	2020	2018-2020 Mean
Detroit-Ann Arbor	Lenawee	Tecumseh	8.4	8.5	8.2	8.3
Detroit-Ann Arbor	Macomb	New Haven	7.8	7.3	6.0	7.0
Detroit-Ann Arbor	Oakland	Oak Park	8.3	7.7	7.4	7.8
Detroit-Ann Arbor	St. Clair	Port Huron	8.1	7.6	6.7	7.5
Detroit-Ann Arbor	Washtenaw	Ypsilanti	8.3	8.4	8.2	8.3
Detroit-Ann Arbor	Wayne	Allen Park	9.1	8.7	7.5	8.4
Detroit-Ann Arbor	Wayne	Detroit-Linwood	8.86	--	--	8.9
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	8.4	7.6	7.5	7.8
Detroit-Ann Arbor	Wayne	Detroit-SW	11.5	12.1	9.1	10.9
Detroit-Ann Arbor	Wayne	Detroit-W. Lafayette	8.9*	--	--	8.9
Detroit-Ann Arbor	Wayne	Wyandotte	8.0	--	--	8.0
Detroit-Ann Arbor	Wayne	Dearborn	10.6	9.9	9.4	10.0
Detroit-Ann Arbor	Wayne	Livonia	7.4*	--	--	7.4
Detroit-Ann Arbor	Wayne	Livonia-Roadway	9.0	8.4*	--	8.7
Detroit-Ann Arbor	Wayne	Eliza Howell-NR	--	--	10.6	10.6
Flint	Genesee	Flint	7.4	7.2	6.0	6.9
Grand Rapids	Ottawa	Jenison	8.3*	8.3	7.4	8.0
Grand Rapids	Kent	Grand Rapids	8.2	8.00	7.7	8.0
Allegan Co	Allegan	Holland	7.6	7.2	6.0	6.9
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	8.4	7.2	7.6	7.8
Lansing-East Lansing	Ingham	Lansing	7.7**	7.3	7.1	7.4
Bay Co	Bay	Bay City	7.1	6.8	4.7	6.2
Missaukee Co	Missaukee	Houghton Lake	5.4	5.8	8.0	6.4
Manistee Co	Manistee	Manistee	6.1	4.9*	5.1*	5.4
Schoolcraft Co	Schoolcraft	Seney	4.1*	4.2	4.6*	4.3

*Indicates site does not have a complete year of data.

**Indicates site was moved during the year and concentrations were averaged together for both locations.

¹¹ For comparison to the standard, the average annual means is rounded to the nearest 0.1 µg/m³.

Table 7.2 provides the 24-hour 98th percentile $PM_{2.5}$ concentrations for 2018-2020 showing Michigan's levels are below the $35 \mu\text{g}/\text{m}^3$ standard (3-year average).¹²

Table 7.2: 24-Hour 98th Percentile $PM_{2.5}$ Concentrations for 2018-2020

Areas	County	Monitoring Sites	2018	2019	2020	2018-2020 Mean
Detroit-Ann Arbor	Lenawee	Tecumseh	24.2	22.1	18.7	22
Detroit-Ann Arbor	Macomb	New Haven	18.9	18.7	15.5	18
Detroit-Ann Arbor	Oakland	Oak Park	20.1	18.2	23.3	21
Detroit-Ann Arbor	St. Clair	Port Huron	19.6	20.3	16.6	19
Detroit-Ann Arbor	Washtenaw	Ypsilanti	21.3	22.0	19.8	21
Detroit-Ann Arbor	Wayne	Allen Park	22.8	22.0	26.3	24
Detroit-Ann Arbor	Wayne	Detroit-Linwood	18.6	--	--	19
Detroit-Ann Arbor	Wayne	Detroit-E 7 Mile	21.5	19.6	17.7	20
Detroit-Ann Arbor	Wayne	Detroit-SW	28.1	30.6	24.1	28
Detroit-Ann Arbor	Wayne	Detroit-W. Lafayette	8.9*	--	--	8.9
Detroit-Ann Arbor	Wayne	Wyandotte	20.4	--	--	20
Detroit-Ann Arbor	Wayne	Dearborn	26.1	24.0	21.0	24
Detroit-Ann Arbor	Wayne	Livonia	18.1*	--	--	18
Detroit-Ann Arbor	Wayne	Livonia-Roadway	22.8*	29.0	--	26
Detroit-Ann Arbor	Wayne	Eliza Howell-NR	--	--	23.2	23
Flint	Genesee	Flint	22.2	18.9	14.5	19
Grand Rapids	Ottawa	Jenison	22.3*	24.4	17.9	22
Grand Rapids	Kent	Grand Rapids	18.9	23.2	17.6	20
Allegan Co	Allegan	Holland	21.2	18.2	13.1	18
Kalamazoo-Battle Creek	Kalamazoo	Kalamazoo	19.0	16.9	18.0	18
Lansing-East Lansing	Ingham	Lansing	23.5**	22.3*	21.6	22
Bay Co	Bay	Bay City	17.8	17.5	14.0	16
Missaukee Co	Missaukee	Houghton Lake	16.2	15.1	15.2	16
Manistee Co	Manistee	Manistee	16.9	14.9*	13.3*	15
Schoolcraft Co	Schoolcraft	Seney	19.0*	14.1	10.6*	15

*Indicates site does not have a complete year of data.

**Indicates site was moved during the year and concentrations were averaged together for both locations.

¹² The 98th percentile value was obtained from the USEPA AQS. For comparing calculated values to the standard, the 3-year, 24-hour average is rounded to the nearest $1 \mu\text{g}/\text{m}^3$.

Figures 7.11 through 7.14 illustrate the current annual mean $PM_{2.5}$ trend for each monitoring site in Michigan. For clarity, the monitoring sites within the Detroit-Warren-Flint CSA have been broken down into two graphs.

Figure 7.11 shows the 2020 levels in Wayne County remained below the $PM_{2.5}$ NAAQS standard. Historically, Dearborn has had the highest concentrations in the state, but Detroit-SW now has the highest concentrations. All sites are below the annual $PM_{2.5}$ NAAQS standard. The Gordie Howe International Bridge sites are included in these graphs.

Figure 7.12 contains the remainder of those sites in the Detroit-Warren-Flint CSA that are outside of Wayne County. These sites also show readings in 2020 are below the $PM_{2.5}$ NAAQS.

Figure 7.13 combines the $PM_{2.5}$ monitoring sites located in West Michigan-Grand Rapids-Muskegon-Holland CSA, Kalamazoo, and Benton Harbor MSAs. All sites are below the annual $PM_{2.5}$ NAAQS.

Figure 7.14 displays the remaining monitoring sites in the Northern Lower and Upper Peninsulas. All sites are below the annual $PM_{2.5}$ NAAQS standard.

Figure 7.11: Detroit-Warren-Flint CSA (Wayne County Only)
Annual Arithmetic Means for $PM_{2.5}$ from 2015-2020

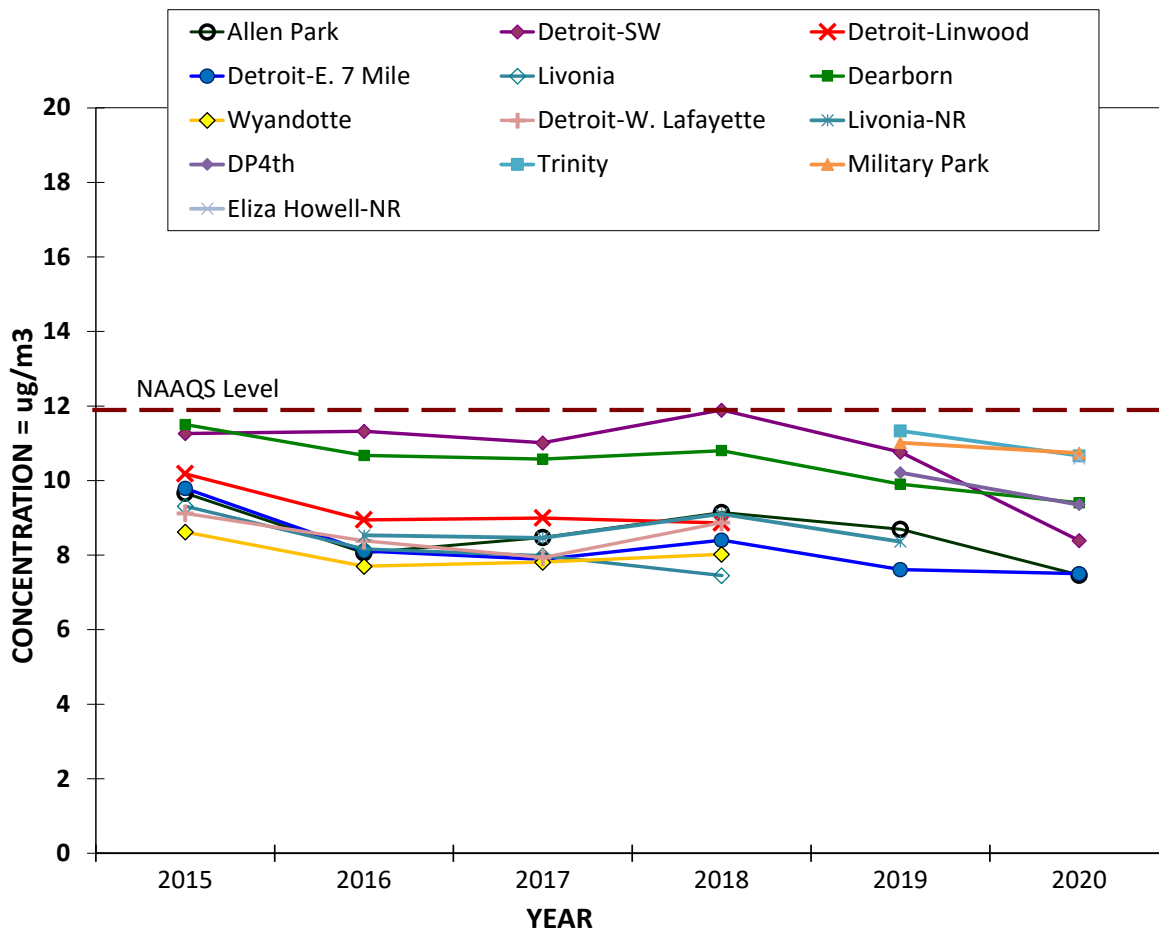


Figure 7.12: Detroit-Warren-Flint CSA (without Wayne County)
Annual Arithmetic Means for PM_{2.5} from 2015-2020

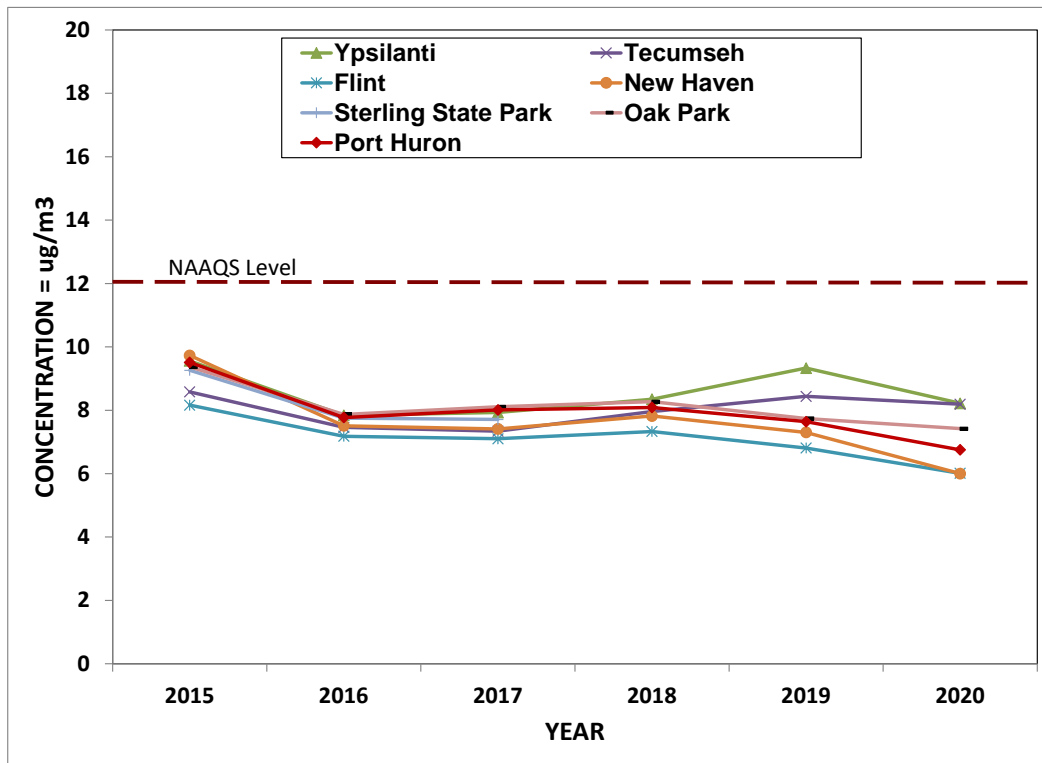


Figure 7.13: West MI - Grand Rapids-Muskegon-Holland CSA, Kalamazoo, and Benton Harbor MSAs
Annual Arithmetic Means for PM_{2.5} from 2015-2020

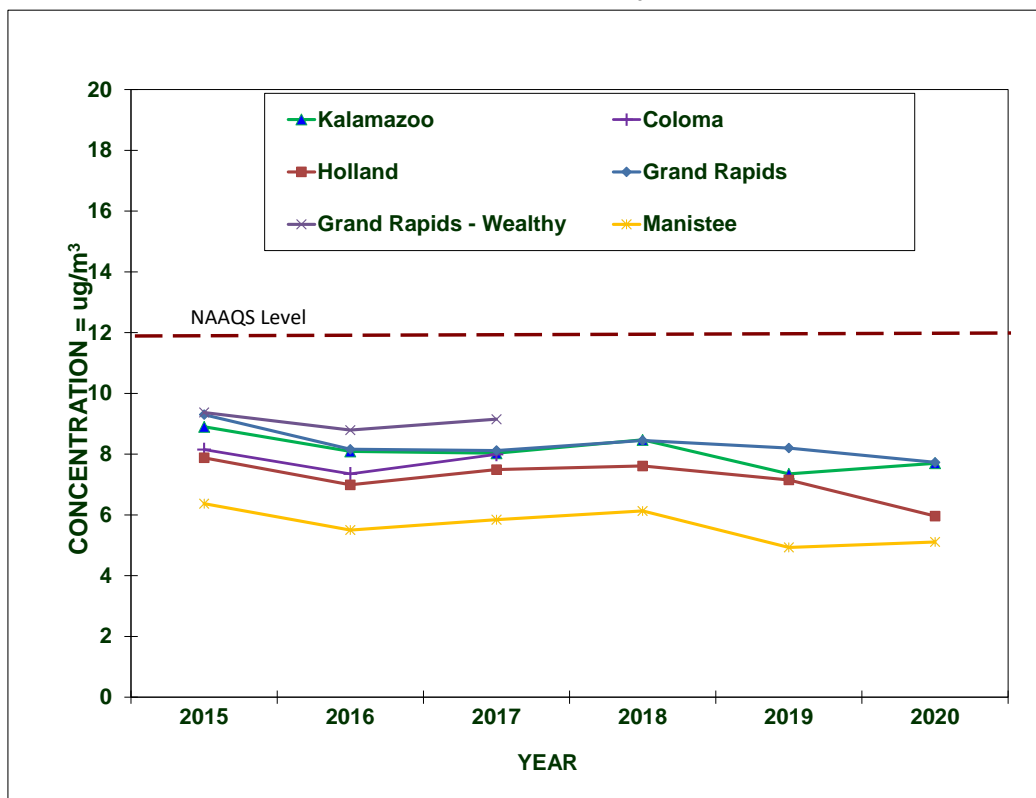


Figure 7.14: Lansing-E. Lansing CSA, Saginaw-Bay City CSA, Cadillac MSA and Upper Peninsula Annual Arithmetic Means for PM_{2.5} from 2015-2020

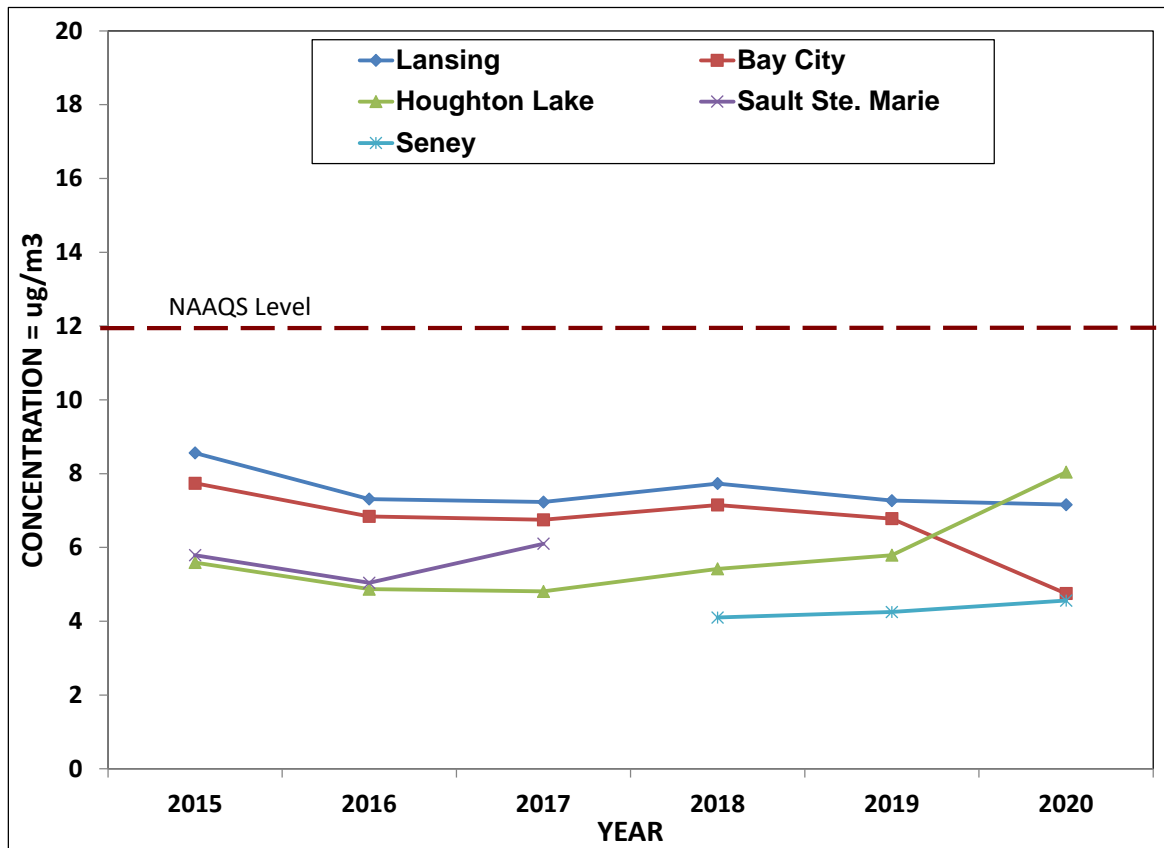
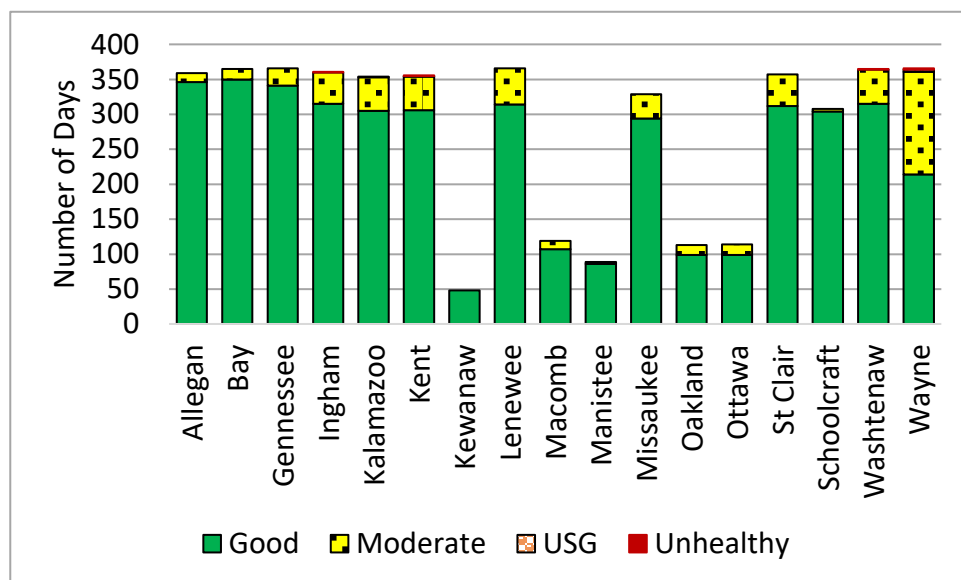


Figure 7.15 shows the AQI values per day in counties where PM_{2.5} is monitored. Most days were in the good to moderate AQI range. Three counties had five days in the USG AQI range, Kalamazoo, and Kent County each had one day, and Wayne County had three days in the USG AQI range. Four counties had AQI values in the Unhealthy range; Ingham, Kent, and Washtenaw Counties had one day, and Wayne County had two days. All these days occurred on July 4th or 5th most likely due to fireworks.

Figure 7.15: 2020 AQI Days for PM_{2.5} in Michigan



CHAPTER 8: TOXIC AIR POLLUTANTS

In addition to the six criteria pollutants discussed in previous chapters, the AQD monitors for a wide variety of substances classified as toxic air pollutants, and/or Hazardous Air Pollutants (HAPs). Under the Clean Air Act, the USEPA specifically addresses a group of 187 HAPs. Under Michigan's air regulations, Toxic Air Contaminants (TACs) are defined as all non-criteria pollutants that may be *"...harmful to public health or the environment when present in the outdoor atmosphere in sufficient quantities and duration."* The definition of TACs lists 42 substances that are not TACs, indicating that all others are TACs. The sources and effects of toxics are as follows:

Sources: Air toxics come from a variety of mobile, stationary, and indoor man-made sources as well as outdoor natural sources. Mobile sources include motor vehicles, stationary sources include industrial factories and power plants, indoor sources include household cleaners, and natural sources include forest fires and eruptions from volcanoes.

Effects: Once air toxics enter the body, there is a wide range of potential health effects. They include: the aggravation of asthma; irritation to the eyes, nose, and throat; carcinogenicity; developmental toxicity (birth defects); nervous system effects; and various other effects on internal organs. Some effects appear after a shorter period of exposure, while others may appear after long-term exposure or after a long period of time has passed since the exposure ended. Most toxic effects are not unique to one substance, and some effects may be of concern only after the substance has deposited to the ground or to a water body (e.g., mercury, dioxin), followed by exposure through an oral pathway such as the eating of fish or produce. This further complicates the assessment of air toxics concerns due to the broad range of susceptibility that various people may have.

Population most at risk: People with asthma, children, and the elderly are generally at the highest risk for health effects from exposure to air toxics.

Air Toxics can be categorized as:

- **Metals:** Examples include aluminum, arsenic, beryllium, barium, cadmium, chromium, cobalt, copper, iron, mercury, manganese, molybdenum, nickel, lead, vanadium, and zinc.
- **Organic Substances:** Further divided into sub-categories that include –
 - VOCs, include benzene (found in gasoline), perchloroethylene (emitted from some dry-cleaning facilities), and methylene chloride (a solvent and paint stripper used by industry);
 - carbonyl compounds (formaldehyde, acetone, and acetaldehyde);
 - semi-volatile compounds (SVOCs);
 - polycyclic aromatic hydrocarbons (PAHs)/polynuclear aromatic hydrocarbons (PNAs);
 - pesticides and;
 - polychlorinated biphenyls (PCBs).
- **Other substances:** Asbestos, dioxin, and radionuclides such as radon.

Because air toxics are such a large and diverse group of substances, regulatory agencies sometimes further refine these classifications to address specific concerns.

For example:

- Some initiatives have targeted those substances that are persistent, bioaccumulative and toxic (PBT), such as mercury, which accumulates in body tissues.
- The USEPA has developed an Integrated Urban Air Toxics Strategy with a focus on 30 substances (the Urban HAPs List).¹³

The evaluation of air toxics levels is difficult due to several factors.

- There are no health-protective NAAQS. Instead, air quality assessments utilize various short- and long-term screening levels and health-based levels estimated to be safe considering the critical effects of concern for specific substances.
- There is incomplete toxicity information for many substances. For some air toxics, the analytical detection limits are too high to consistently measure the amount present, and in some cases, the risk assessment-based levels are below the detection limits.
- Data gaps are present regarding the potential for interactive toxic effects for co-exposure to multiple substances present in emissions and in ambient air. Air toxics also pose a challenge due to monitoring and analytical methods that are either unavailable for some compounds or cost-prohibitive for others (e.g., dioxins).

These factors make it difficult to accurately assess the potential health concerns of all air toxics.

Nevertheless, it is feasible and important to characterize the potential health hazards and risks associated with many air toxics.

Table 8.1 shows the monitoring stations and what air toxic was monitored at each station in 2020. This table can also be found in **Appendix B** with the Air Toxics Monitoring Summary.

¹³ USEPA's Air Toxics website: Urban Strategy is located at www.epa.gov/urban-air-toxics.

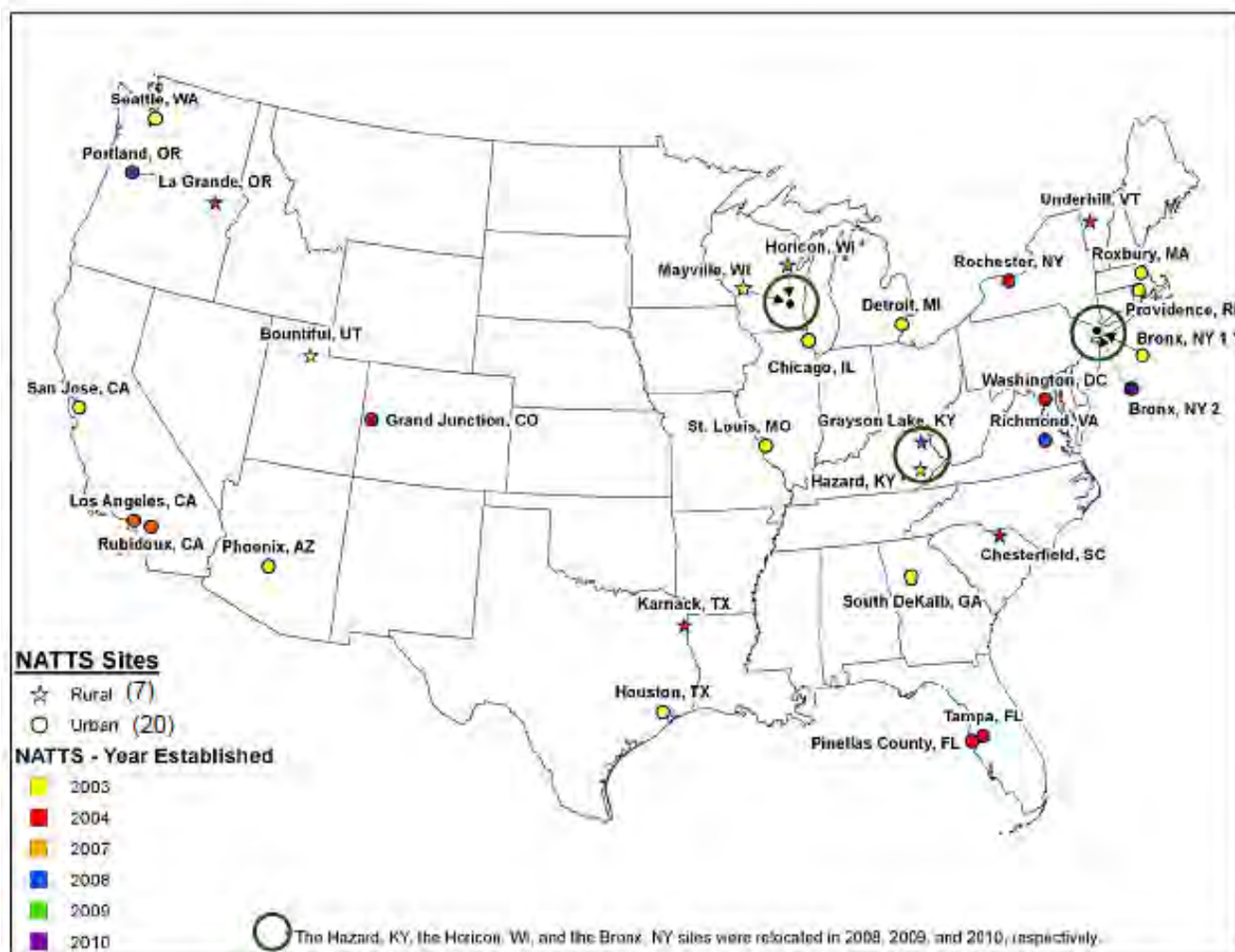
Table 8.1: 2019 Toxics Sampling Sites

Site Name	VOC	Carbonyl	PAHs	Metals TSP	Metals PM ₁₀	Speciated PM _{2.5}
Allen Park				x		x
Dearborn	x	x	x	x	x	x
Detroit-SW	x	x		x		x
Detroit-W. Jefferson				x		
Grand Rapids				x		x
Belding-Merrick St.				x		
NMH 48217				x		
Port Huron-Rural St.				x		
River Rouge		x		x		
DP4th				x		
Military Park				x		
Trinity				x		

National Monitoring Efforts and Data Analysis

The USEPA administers national programs that identify air toxics levels, detect trends, and prioritize air toxics research. EGLE participates in these programs. In addition, the AQD operates a site in Dearborn that is part of the USEPA's NATTS. The purpose of the NATTS network is to detect trends in high-risk air toxics such as benzene, formaldehyde, chromium, and 1,3-butadiene and to measure the progress of air toxics regulatory programs at the national level. Currently, the NATTS network contains 27 stations; 20 urban and 7 rural (see **Figure 8.1**). The USEPA requires that the NATTS sites measure VOCs, carbonyls, PAHs, and trace metals on a once-every-six-day sampling schedule. The Dearborn NATTS site measures trace metals as TSP, PM₁₀, and PM_{2.5}.

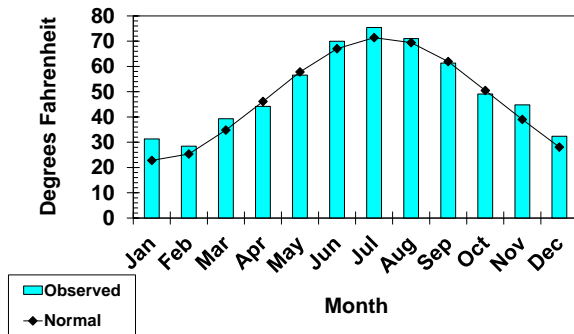
Figure 8.1: National Air Toxics Trends Sites



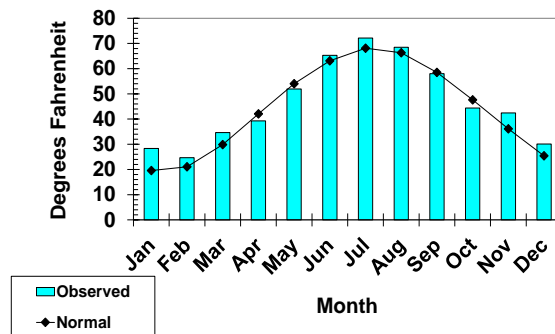
CHAPTER 9: METEOROLOGICAL INFORMATION

Figures 9.1 through 9.3 show average daily temperatures, and **Figures 9.4 through 9.6** show total monthly precipitation amounts compared to their climatic norms for sites in the Northern Lower, Southern Lower, and Upper Peninsulas. These figures were constructed by averaging data from several National Weather Service stations and therefore are not meant to be representative of any one single location in Michigan. Instead, they are intended to depict the regional trends that occurred during the year 2020.

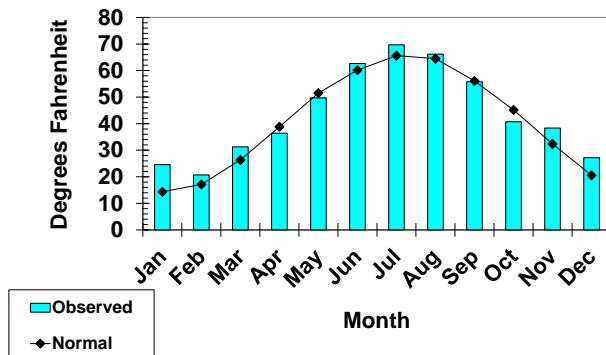
**Figure 9.1: Southern Lower Peninsula
Observed Average Monthly Temperatures vs.
Normal Average Monthly Temperatures**



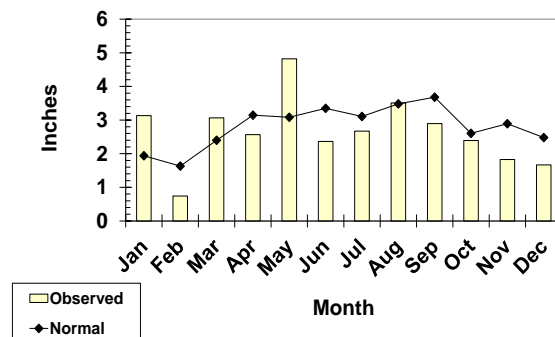
**Figure 9.2: Northern Lower Peninsula
Observed Average Monthly Temperatures vs.
Normal Average Monthly Temperatures**



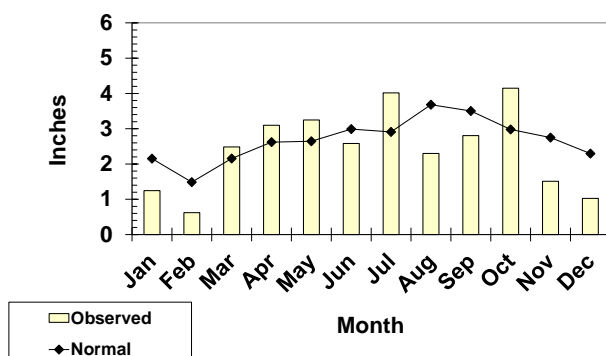
**Figure 9.3: Upper Peninsula
Observed Average Monthly Temperatures vs.
Normal Average Monthly Temperatures**



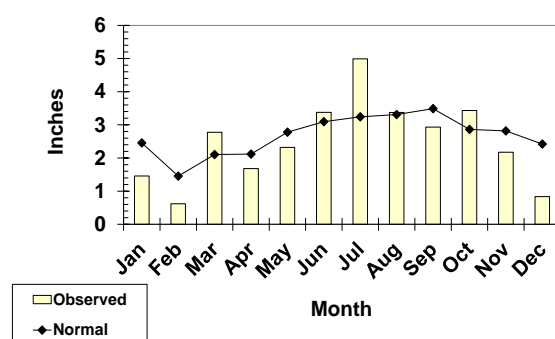
**Figure 9.4: Southern Lower Peninsula
Observed Monthly Precipitation vs.
Normal Monthly Precipitation**



**Figure 9.5: Northern Lower Peninsula
Observed Monthly Precipitation vs.
Normal Monthly Precipitation**



**Figure 9.6: Upper Peninsula
Observed Monthly Precipitation vs.
Normal Monthly Precipitation**



CHAPTER 10: SPECIAL PROJECTS

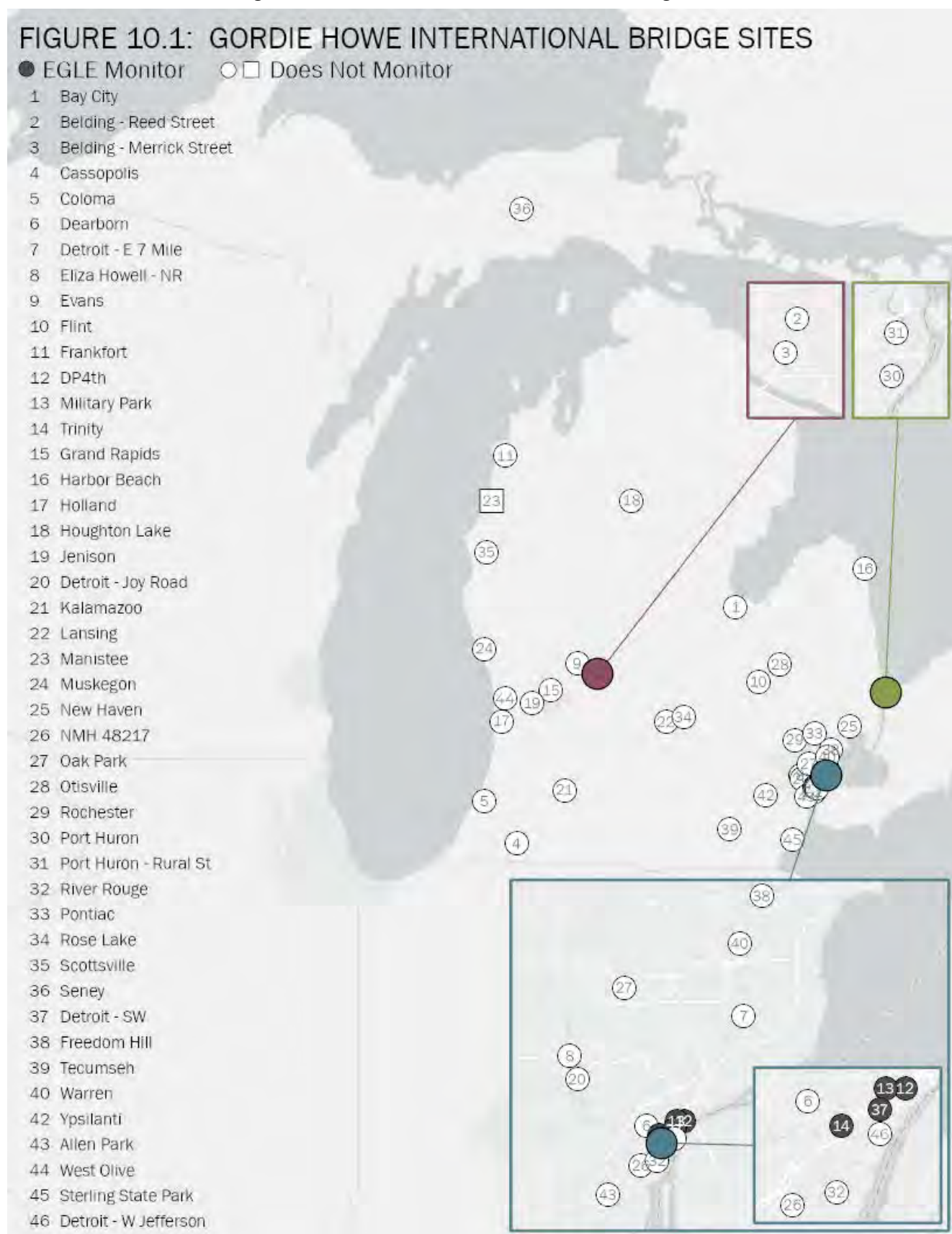
EGLÉ continues the sampling for the Gordie Howe International Bridge (GHIB). This project is a joint Canadian-American venture. The GHIB will be built linking Windsor, Ontario and Detroit, Michigan. Construction is slated to occur between 2018-2024. For additional information, go to:

GordieHoweInternationalBridge.com.

EGLÉ is conducting ambient air quality monitoring in the Delray community to ascertain air pollution levels in the community. The three new sites will monitor air pollutants before, during, and after construction of the bridge. In addition, NO_x, continuous PM_{2.5}, and black carbon were added to the Detroit-SW (261630015) monitoring site for this project.

- **Trinity (261630098):** Meteorological parameters, NO_x, SO₂, CO, continuous PM_{2.5}, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **DP4TH (261630099):** NO_x, SO₂, CO, continuous PM_{2.5}, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **Military Park (261630100):** NO_x, SO₂, continuous PM_{2.5}, black carbon, and five trace metals (Pb, Mn, As, Cd, and Ni).
- **Detroit-SW (261630015):** Meteorological parameters, NO_x, SO₂, continuous PM_{2.5}, PM_{2.5} Speciated, PM₁₀, black carbon, VOCs, carbonyls, and five trace metals (Pb, Mn, As, Cd, and Ni).

The data from these sites is reported along with the other sites in the previous chapters and in the following appendices.

Figure 10.1: Gordie Howe International Bridge Sites

APPENDIX A: CRITERIA POLLUTANT SUMMARY FOR 2020

Appendix A utilizes the USEPA's 2020 Air Quality System (AQS) Quick Look Report Data to present a summary of ambient air quality data collected for the criteria pollutants at monitoring locations throughout Michigan. Concentrations of non-gaseous pollutants are generally given in $\mu\text{g}/\text{m}^3$ and in ppm for gaseous pollutants. The following define some of the terms listed in the **Appendix A** reports.

Site I.D.: The AQS site ID is the USEPA's code number for these sites.

POC: The Parameter Occurrence Code or POC is used to assist in distinguishing different uses of monitors, i.e., under Pb, NO₂, and SO₂, POC #1-5 are used to help differentiate between individual monitors. For PM, the POC numbers are used more for the type of monitoring, such as:

- 1 – FRM or FEM;
- 2 - Typically collocated FRM;
- 3 - TEOM hourly PM₁₀ and PM_{2.5} measurements; and
- 5 - PM_{2.5} speciation monitors (shown at right is a Met One SASS – speciation air sampling system).

OBS: For Pb, TSP, PM_{2.5}, and PM₁₀, the # OBS (number of observations) refers to the number of valid 24-hour values gathered.

For continuous monitors (CO, NO₂, O₃, PM_{2.5} TEOM, BAM and SO₂), # OBS refers to the total valid hourly averages obtained from the analyzer.

Values: The value is listed for each criteria pollutant per its NAAQS (primary and secondary). The number of exceedances per site for the primary and secondary standards utilize running averages for continuous monitors (except for O₃) and does not include averages considered invalid due to limited sampling times. For example, a particulate-mean based only on six months could not be considered as violating the annual standard. As noted, each site is allowed one short-term standard exceedance before a violation is determined.



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Criteria Pollutant Summary For 2020

CO measured in ppm

Site ID	POC	City	County	Year	# OBS	1-hr Highest Value	1-hr 2 nd Highest Value	1-hr OBS > 35	8-hr Highest Value	8-hr 2 nd Highest Value	8-hr OBS > 9
260810020	1	Grand Rapids	Kent	2020	7136	1.5	1.4	0	1.1	1.1	0
261630001	1	Allen Park	Wayne	2020	8259	1.7	1.6	0	1.2	1.2	0
261630093	1	Eliza Howell-NR	Wayne	2020	8191	2.4	2.4	0	2.1	1.8	0
261630098	1	DP4th	Wayne	2020	8349	1.4	1.4	0	1.1	1.1	0
261630099	1	Trinity	Wayne	2020	8367	2.3	2.1	0	1.4	1.3	0

*Indicates site does not have a complete year of data.

Pb (24-hour) measured in µg/m³

Site ID	POC	City	County	Year	# OBS	Highest rolling 3-month Arith Mean	Highest Value (24-hr)	2 nd Highest Value (24-hr)
260670003	1	Belding-Merrick St.	Ionia	2020	60	0.01	.028	.009
261470031	1	Port Huron-Rural St.	St. Clair	2020	61	0.03	0.121	0.119
261630005	1	River Rouge	Wayne	2020	61	0.01	0.014	0.013
261630015	1	Detroit-SW	Wayne	2020	61	0.01	0.021	0.020
261630027	1	Detroit-W. Jefferson	Wayne	2020	61	0.02	0.086	0.031
261630033	1	Dearborn	Wayne	2020	60	0.01	0.093	0.051
261630097	1	NMH 48217	Wayne	2020	61	0.01	0.020	0.017
261630098	1	DP4th	Wayne	2020	61	0.02	0.103	0.052
261630099	1	Trinity	Wayne	2020	62	0.04	0.056	0.030
261630100	1	Military Park	Wayne	2020	61	0.02	0.096	0.079

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NO₂ measured in ppb

Site ID	POC	City	County	Year	# OBS	1-Hr Highest Value	1-Hr 2 nd Highest Value	98 th Percentile 1-hr	Annual Arith Mean
260650018	1	Lansing	Ingham	2020	8178	39.5	35.1	33.0	5.73
261130001	1	Houghton Lake	Missaukee	2020	8327	13.7	11.1	3.4	1.02
261390005	1	Jenison	Ottawa	2020	8318	29.7	29.7	28.2	4.71
261630015	1	Detroit-SW	Wayne	2020	8094	47.1	45.6	38.2	11.23
261630093	1	Eliza Howell-NR	Wayne	2020	8101	42.9	41.8	39.1	13.05
261630098	1	DP4th	Wayne	2020	8278	80.0	47.1	43.6	12.25
261630099	1	Trinity	Wayne	2020	7908	59.6	49.3	39.9	11.94
161630100	1	Military Park	Wayne	2020	7847	75.4	70.4	43.3	11.14

*Indicates site does not have a complete year of data.

NO_y measured in ppb

Site ID	POC	City	County	Year	# OBS	1-Hr Highest Value	1-Hr 2 nd Highest Value	Annual Arith Mean
260810020	1	Grand Rapids	Kent	2020	6392	181.5	154.6	10.29
261630001	1	Allen Park	Wayne	2020	8270	206.4	202.1	12.55
261630019	1	Detroit-E 7 Mile	Wayne	2020	7538	132.1	128.0	9.50

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O₃ (1-hour) measured in ppm

Site ID	POC	City	County	Year	Num Meas	Num Req	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Day Max >= 0.125 Measured	Values >= 0.125 Estimated	Missed Days < 0.125 Standard
260050003	1	Holland	Allegan	2020	245	245	0.092	0.090	0.083	0.081	0	0	0
260190003	1	Frankfort	Benzie	2020	244	245	0.097	0.080	0.076	0.074	0	0	1
260210014	1	Coloma	Berrien	2020	245	245	0.097	0.087	0.086	0.081	0	0	0
260270003	2	Cassopolis	Cass	2020	236	245	0.080	0.080	0.079	0.079	0	0	2
260370002	2	Rose Lake	Clinton	2020	239	245	0.076	0.073	0.071	0.068	0	0	0
260490021	1	Flint	Genesee	2020	245	245	0.101	0.083	0.075	0.075	0	0	0
260492001	1	Otisville	Genesee	2020	243	245	0.076	0.075	0.074	0.074	0	0	0
260630007	1	Harbor Beach	Huron	2020	245	245	0.107	0.102	0.090	0.083	0	0	0
260650018	1	Lansing	Ingham	2020	239	245	0.071	0.069	0.068	0.068	0	0	0
260770008	1	Kalamazoo	Kalamazoo	2020	245	245	0.078	0.078	0.078	0.076	0	0	0
260810020	1	Grand Rapids	Kent	2020	353	366	0.095	0.083	0.083	0.082	0	0	5
260810022	1	Evans	Kent	2020	245	245	0.084	0.081	0.077	0.076	0	0	0
260910007	1	Tecumseh	Lenawee	2020	245	245	0.082	0.073	0.072	0.072	0	0	0
260990009	1	New Haven	Macomb	2020	245	245	0.089	0.088	0.088	0.086	0	0	0
260991003	1	Warren	Macomb	2020	245	245	0.083	0.083	0.081	0.079	0	0	0
261010922	1	Manistee	Manistee	2020	69	245	0.073	0.069	0.061	0.058	0	0	0
261050007	1	Scottville	Mason	2020	238	245	0.092	0.077	0.076	0.075	0	0	0
261130001	1	Houghton Lake	Missaukee	2020	232	245	0.079	0.074	0.072	0.071	0	0	2

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Site ID	POC	City	County	Year	Num Meas	Num Req	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Day Max ≥ 0.125 Measured	Values ≥ 0.125 Estimated	Missed Days < 0.125 Standard
261210039	1	Muskegon	Muskegon	2020	243	245	0.098	0.097	0.090	0.085	0	0	2
261250001	2	Oak Park	Oakland	2020	244	245	0.086	0.083	0.081	0.081	0	0	1
261390005	1	Jenison	Ottawa	2020	245	245	0.090	0.090	0.083	0.083	0	0	0
261470005	1	Port Huron	St. Clair	2020	245	245	0.085	0.083	0.081	0.077	0	0	0
261530001	1	Seney	Schoolcraft	2020	244	245	0.082	0.080	0.077	0.072	0	0	1
261610008	1	Ypsilanti	Washtenaw	2020	243	245	0.086	0.082	0.081	0.078	0	0	2
261630001	2	Allen Park	Wayne	2020	342	366	0.106	0.084	0.081	0.080	0	0	2
261630019	2	Detroit-E 7 Mile	Wayne	2020	239	245	0.086	0.083	0.081	0.080	0	0	4

* Indicates site was moved from Lansing (260650012) to Lansing on Filley St (260650018).

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O₃ (8-hour) measured in ppm

Site ID	POC	City	County	Year	% OBS	Valid Days Measured	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Day Max > 0.070
260050003	1	Holland	Allegan	2020	100	245	0.081	0.079	0.078	0.076	6
260190003	1	Frankfort	Benzie	2020	100	245	0.091	0.078	0.069	0.068	2
260210014	1	Coloma	Berrien	2020	100	245	0.085	0.082	0.079	0.078	7
260270003	2	Cassopolis	Cass	2020	95	233	0.077	0.075	0.075	0.075	5
260370002	1	Rose Lake	Clinton	2020	97	238	0.068	0.067	0.065	0.064	0
260490021	1	Flint	Genesee	2020	100	245	0.078	0.069	0.068	0.067	1
260492001	1	Otisville	Genesee	2020	100	244	0.070	0.069	0.068	0.068	0
260630007	1	Harbor Beach	Huron	2020	100	245	0.085	0.083	0.078	0.075	7
260650018	1	Lansing	Ingham	2020	97	238	0.064	0.063	0.062	0.062	0
260770008	1	Kalamazoo	Kalamazoo	2020	100	244	0.075	0.074	0.073	0.072	5
260810020	1	Grand Rapids	Kent	2020	96	353	0.083	0.080	0.079	0.078	6
260810022	1	Evans	Kent	2020	100	244	0.076	0.071	0.070	0.070	2
260910007	1	Tecumseh	Lenawee	2020	100	245	0.077	0.071	0.068	0.067	2
260990009	1	New Haven	Macomb	2020	100	245	0.078	0.076	0.075	0.074	12
260991003	1	Warren	Macomb	2020	100	245	0.077	0.071	0.070	0.070	2
261010922	1	Manistee	Manistee	2020	69	245	0.064	0.061	0.059	0.051	0
261050007	1	Scottville	Mason	2020	96	236	0.089	0.074	0.068	0.068	2
261130001	1	Houghton Lake	Missaukee	2020	93	229	0.072	0.069	0.069	0.068	1
261210039	1	Muskegon	Muskegon	2020	98	241	0.083	0.083	0.083	0.080	6
261250001	2	Oak Park	Oakland	2020	98	241	0.078	0.077	0.076	0.074	6
261390005	1	Jenison	Ottawa	2020	100	244	0.085	0.081	0.077	0.075	6
261470005	1	Port Huron	St. Clair	2020	100	245	0.072	0.070	0.070	0.069	1
261530001	1	Seney	Schoolcraft	2020	99	243	0.080	0.076	0.073	0.067	3
261610008	1	Ypsilanti	Washtenaw	2020	99	243	0.074	0.073	0.072	0.072	5
261630001	2	Allen Park	Wayne	2020	93	339	0.073	0.071	0.070	0.070	2
261630019	2	Detroit-E 7 Mile	Wayne	2020	97	238	0.076	0.075	0.074	0.073	4

PM_{2.5} (24-hour) FRM measured in µg/m³ at local conditions

Site ID	POC	Monitor	City	County	Year	# OBS	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	98%	Wtd. Arith. Mean
260490021	1	FRM	Flint	Genesee	2020	61	22.0	15.6	15.2	13.7	15.6	6.56
260650018	1	FRM	Lansing	Ingham	2020	60	31.8	21.6	16.9	16.5	21.6	7.06
260770008	1	FRM	Kalamazoo	Kalamazoo	2020	111	38.3	27.4	18.0	17.7	18.0	7.70
260770008	2	FRM	Kalamazoo	Kalamazoo	2020	61	26.0	17.4	15.3	14.3	17.4	7.11
260810020	1	FRM	Grand Rapids	Kent	2020	116	47.9	19.3	17.6	16.4	17.6	7.73
260990009	1	FRM	New Haven	Macomb	2020	119	16.7	16.5	15.5	15.1	15.5	6.00
261010922	1	FRM	Manistee	Manistee	2020	88	14.2	13.3	12.7	11.7	13.3	5.11*
261250001	1	FRM	Oak Park	Oakland	2020	112	29.0	25.3	23.3	17.7	23.3	7.42
261390005	1	FRM	Jenison	Ottawa	2020	114	33.2	17.9	17.9	16.8	17.9	7.39
261470005	1	FRM	Port Huron	St. Clair	2020	119	24.5	17.9	16.6	16.2	16.6	6.75
261610008	1	FRM	Ypsilanti	Washtenaw	2020	60	32.8	16.9	15.0	14.4	16.9	7.17
261630001	1	FRM	Allen Park	Wayne	2020	117	41.9	29.4	26.3	18.2	26.3	7.46
261630015	1	FRM	Detroit-SW	Wayne	2020	122	30.3	26.8	19.5	17.6	19.5	8.39
261630019	1	FRM	Detroit-E 7 Mile	Wayne	2020	116	28.4	17.9	17.7	17.0	17.7	7.50
261630033	1	FRM	Dearborn	Wayne	2020	120	37.6	30.4	21.0	21.0	21.0	9.40
261630033	2	FRM	Dearborn	Wayne	2020	57	30.8	21.4	20.9	19.8	21.4	9.08

*Indicates the site does not have a complete year of data.

PM_{2.5} (24-hour) FEM measured in µg/m³ at local conditions

Site ID	POC	Monitor	City	County	Year	# OBS	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	98%	Wtd. Arith. Mean
260050003	3	BAM	Holland	Allegan	2020	359	30.4	21.7	15.8	14.7	13.1	5.96
260170014	3	BAM	Bay City	Bay	2020	365	23.1	15.6	14.7	14.3	14.0	4.75
260490021	3	BAM	Flint	Genesee	2020	366	33.3	21.4	19.1	17.4	14.5	6.01
260910007	3	BAM	Tecumseh	Lenawee	2020	366	30.4	30.4	29.0	28.9	18.7	8.19
261130001	3	BAM	Houghton Lake	Missaukee	2020	329	19.3	19.3	16.4	16.2	15.2	8.04*
261530001	3	BAM	Seney	Schoolcraft	2020	282	17.3	15.4	14.5	13.1	10.6	4.56*
261610008	3	BAM	Ypsilanti	Washtenaw	2020	365	67.8	34.2	31.8	27.9	19.8	8.22
261630015	3	BAM/ T640	Detroit-SW**	Wayne	2020	289	38.5	35.6	34.1	30.2	25.9	9.57*
261630093	3	BAM	Eliza Howell-NR	Wayne	2020	356	108.9	45.8	40.7	34.2	23.2	10.59

* Indicates the site does not have a complete year of data.

**TIECO BAMs were switched out to T640s in the fall of 2020.

PM_{2.5} Continuous, Non-Regulatory (1-hour) measured in µg/m³

Site ID	POC	Monitor	City	County	Year	# OBS	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Wtd. Arith. Mean
260650012	3	TEOM	Lansing	Ingham	2020	6106	455.1	384.5	306.5	224.7	7.44
260770008	3	TEOM	Kalamazoo	Kalamazoo	2020	6907	169.0	162.9	144.5	126.9	7.38
260810020	3	TEOM	Grand Rapids	Kent	2020	6513	715.8	249.1	241.9	228.2	7.73
261470005	3	TEOM	Port Huron	St. Clair	2020	7373	122.7	56.6	45.6	44.3	7.22
261630001	3	TEOM	Allen Park	Wayne	2020	6400	216.0	208.0	174.0	144.0	8.34
261630015	3	BAM/T640	Detroit-SW**	Wayne	2020	8345	270.6	227.9	188.8	183.8	12.60
261630033	3	TEOM	Dearborn	Wayne	2020	8284	342.0	217.1	165.7	100.9	9.19
261630097	3	TEOM	NMH 48217	Wayne	2020	8495	450.7	343.8	319.9	88.9	8.33
261630098	3	BAM/T640	DP4th**	Wayne	2020	8735	95.0	93.4	85.4	80.0	9.59
261630099	3	BAM/T640	Trinity**	Wayne	2020	8308	270.6	162.3	120.9	101.3	10.75
261630100	3	BAM/T640	Military Park**	Wayne	2020	7552	220.6	214.5	159.0	120.5	10.76

* Indicates the site does not have a complete year of data.

**TIECO BAMs were switched out to T640s in the fall of 2020.

PM₁₀ (24-hour) measured in µg /m³

Site ID	POC	Monitor	City	County	Year	# OBS	# Req.	Valid Days	% OBS	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Wtd Arith Mean
260810020	1	GRAV	Grand Rapids	Kent	2020	59	61	58	95	28	27	26	24	8.6
261390005	1	GRAV	Jenison	Ottawa	2020	58	61	57	93	22	21	21	21	7.2
261630001	1	GRAV	Allen Park	Wayne	2020	62	61	59	97	34	27	26	23	9.6
261630015	1	GRAV	Detroit-SW	Wayne	2020	58	61	57	93	59	48	47	46	16.3
261630033	1	GRAV	Dearborn	Wayne	2020	60	61	59	97	53	49	48	47	22.9
261630033	9	GRAV	Dearborn	Wayne	2020	29	31	29	94	59	50	47	44	24.2

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PM₁₀ TEOM (1-hour) measured in µg/m³

Site ID	POC	Monitor	City	County	Year	# OBS	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Wtd. Arith. Mean
261630033	3	TEOM	Dearborn	Wayne	2020	8086	57	50	49	44	16.9

PM_{10-2.5} (24-hour) measured in µg/m³

Site ID	Monitor	City	County	Year	# OBS	Highest Value	2 nd Highest Value	3 rd Highest Value	4 th Highest Value	Wtd. Arith. Mean
260810020	GRAV	Grand Rapids	Kent	2020	107	25.5	22.5	17.5	17.2	6.73
261630001	GRAV	Allen Park	Wayne	2020	102	21.3	20.9	19.9	19.2	7.15

SO₂ measured in ppb

Site ID	POC	City	County	Year	# OBS	1-hr Highest Value	1-hr 2 nd Highest Value	99 th %ile: 1-hr	24-hr Highest Value	24-hr 2 nd Highest Value	OBS >0.5	Arith Mean
260650018	1	Lansing	Ingham	2020	8379	5.5	4.6	4.2	2.1	1.9	0	1.32
260810020	2	Grand Rapids	Kent	2020	8409	11.0	3.0	2.7	1.4	1.2	0	0.49
261150006	1	Sterling State Park	Monroe	2020	8302	8.7	7.0	6.9	2.4	2.3	0	0.59
261390011	1	West Olive	Ottawa	2020	8278	18.6	16.7	15.2	10.5	5.8	0	0.69
261470005	1	Port Huron	St. Clair	2020	8382	106.3	104.3	76.4	26.4	17.1	0	1.88
261630001	1	Allen Park	Wayne	2020	8337	18.2	17.2	14.7	3.1	2.8	0	0.49
261630015	1	Detroit-SW	Wayne	2020	8380	54.37	45.3	43.3	27.0	14.6	0	2.34
261630097	1	NMH 48217	Wayne	2020	8251	24.8	21.7	17.0	3.7	3.7	0	0.60
261630098	1	DP4th	Wayne	2020	8353	31.1	28.3	17.0	4.3	4.1	0	1.14
261630099	1	Trinity	Wayne	2020	8258	21.4	18.8	16.1	9.0	6.2	0	0.71
261630100	1	Military Park	Wayne	2020	8199	40.8	36.0	32.5	13.0	12.4	0	1.61

APPENDIX B: 2020 AIR TOXICS MONITORING SUMMARY FOR METALS, VOCS, CARBONYL COMPOUNDS, PAHS, HEXAVALENT CHROMIUM & SPECIATED PM_{2.5}

Appendix B provides summary statistics of ambient air concentrations of various substances monitored in Michigan during 2020. At each monitoring site, air samples were taken over a 24-hour period (midnight to midnight). These air samples represent the average air concentration during that 24-hour period. The frequency of air samples collected is typically done once every 6 or 12 days. Sometimes the sampled air concentration is lower than the laboratory's analytical method detection level (MDL). When the concentration is lower than the MDL, two options are used to estimate the air concentration. The calculation of the minimum average ("Average (ND=0)") uses 0.0 µg/m³ for a value less than the MDL. In the calculation of the maximum average ("Average (ND=MDL/2)") the MDL divided by 2 (i.e., ½ the MDL) is substituted for air concentrations less than the MDL.

Table B shows the monitoring stations and what types of air toxics were monitored at each station in 2020. The following terms and acronyms are used in **Appendix B-1** and **B-2** data tables:

- Num Obs: Number of Observations (number of daily air samples taken during the year)
- Obs>MDL: Number of daily samples above the MDL
- Average (ND=0): average air concentration in 2020, assuming daily samples below MDL were equal to 0.0 µg/m³.
- Average (ND=MDL/2): average air concentration in 2020, assuming daily samples below MDL were equal to one half the MDL.
- MDL: Analytical MDL in units of µg/m³
- Max1: Highest daily air concentration during 2020
- Max2: Second highest daily air concentration during 2020
- Max3: Third highest daily air concentration during 2020
- µg/m³: Micrograms per cubic meter (1,000,000 µg = 1 g)

Table B: 2019 Toxics Sampling Sites

SITE NAME	VOC	Carbonyl	PAHs	Metals TSP	Metals PM ₁₀	Speciated PM _{2.5}
Allen Park				x	x	x
Dearborn	x	x	x	x	x	x
Detroit-SW	x	x		x		x
Detroit-W. Jefferson				x		
Grand Rapids				x		x
Belding-Merrick St.				x		
NMH 48217				x		
Port Huron-Rural St.				x		
River Rouge		x		x		
DP4th				x		
Military Park				x		
Trinity				x		

VOC = volatile organic compound; PAHs = polycyclic aromatic hydrocarbon; TSP = total suspended particulate

PM₁₀ = particulate matter with aerodynamic diameter less than 10 µm; Mn = manganese.

APPENDIX B-1 DATA TABLES

Dearborn (261630033) Concentrations in micrograms per cubic meter (µg/m3)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
1,1,2,2-Tetrachloroethane	58	1	0.00102	0.059	0.118	0.059	0	0
1,1,2-Trichloro-1,2,2-Trifluoroethane	58	58	0.529	0.529	0.0649	0.716	0.614	0.598
1,1,2-Trichloroethane	58	1	9.41E-05	0.0257	0.0523	0.0055	0	0
1,1-Dichloroethane	58	0	0	0.0215	0.0429	0	0	0
1,1-Dichloroethylene	58	0	0	0.0305	0.061	0	0	0
1,2,4-Trichlorobenzene	58	6	0.00371	0.178	0.387	0.0668	0.0468	0.043
1,2,4-Trimethylbenzene	58	58	0.389	0.389	0.0519	2.37	2.34	1.72
1,2-Dichlorobenzene	58	5	0.000611	0.0389	0.084	0.0132	0.0084	0.0078
1,2-Dichloropropane	58	6	0.00163	0.0295	0.0616	0.0185	0.0176	0.0166
1,3,5-Trimethylbenzene	58	58	0.109	0.109	0.0255	0.654	0.551	0.472
1,3-Butadiene	58	58	0.0422	0.0422	0.026	0.158	0.122	0.11
1,3-Dichlorobenzene	58	2	0.000228	0.032	0.0653	0.0078	0.0054	0
1,4-Dichlorobenzene	58	45	0.025	0.0364	0.0782	0.142	0.114	0.092
Acenaphthene (Tsp) Stp	62	53	0.00568	0.0057	0.00017	0.0343	0.0233	0.0201
Acenaphthylene (Tsp) Stp	62	60	0.000728	0.000728	1.12E-05	0.0139	0.0117	0.006
Acetaldehyde	70	70	2.02	2.02	0.0374	5.13	4.75	4.66
Acetone	70	70	3.4	3.4	0.403	16.5	13	12.4
Acetonitrile	58	58	0.497	0.497	0.0745	2.64	1.31	1.27
Acetylene	58	58	0.342	0.342	0.248	1.18	1.1	0.975
Acrolein - Verified	56	0	0			0	0	0
Acrylonitrile	57	5	0.0103	0.0228	0.0279	0.247	0.103	0.102
Anthracene (Tsp) Stp	62	62	0.000429	0.000429	2.85E-05	0.0037	0.003	0.0014
Arsenic (Tsp) Stp	92	91	0.00186	0.00186	4.76E-05	0.0085	0.0061	0.0055
Arsenic Pm10 Lc	93	93	0.00164	0.00164		0.006	0.0052	0.0034

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic Pm10 Stp	93	93	0.00166	0.00166	7.41E-05	0.006	0.0053	0.0034
Barium (Tsp) Stp	92	91	0.0241	0.0241	0.00759	0.0892	0.0735	0.0721
Barium Pm10 Lc	93	93	0.0144	0.0144		0.0688	0.0661	0.0332
Barium Pm10 Stp	93	93	0.0146	0.0146	0.00066	0.0679	0.0652	0.0327
Benzaldehyde	70	70	0.407	0.407	0.043	4.6	4.02	3.35
Benzene	58	58	0.678	0.678	0.0324	6.71	1.28	1.13
Benzo[A]Anthracene (Tsp) Stp	62	62	0.000208	0.000208	1.18E-05	0.00232	0.00193	0.0016
Benzo[A]Pyrene (Tsp) Stp	62	62	0.000174	0.000174	1.43E-05	0.0017	0.0014	0.001
Benzo[B]Fluoranthene (Tsp) Stp	60	60	0.000549	0.000549	7.12E-06	0.00564	0.00375	0.0032
Benzo[E]Pyrene (Tsp) Stp	62	62	0.000288	0.000288	5.94E-06	0.00348	0.00162	0.0014
Benzo[G,H,I]Perylene (Tsp) Stp	62	61	0.000224	0.000224	5.71E-06	0.0012	0.00096	0.0009
Benzo[K]Fluoranthene (Tsp) Stp	61	59	0.000146	0.000146	1.26E-05	0.00131	0.00068	0.0006
Beryllium (Tsp) Stp	92	91	8.70E-05	8.70E-05	3.16E-05	0.00038	0.00025	0.0002
Beryllium Pm10 Lc	93	91	2.87E-05	2.93E-05		0.00011	0.00011	0.0001
Beryllium Pm10 Stp	93	93	2.92E-05	2.92E-05	9.69E-06	0.00011	0.00011	0.0001
Bromochloromethane	58	1	0.000228	0.0315	0.0636	0.0132	0	0
Bromodichloromethane	55	0	0	0.0386	0.0771	0	0	0
Bromoform	58	45	0.0116	0.0331	0.196	0.0279	0.0248	0.0217
Bromomethane	58	58	0.0392	0.0392	0.0677	0.205	0.144	0.118
Butyraldehyde	69	69	0.466	0.466	0.0522	1.83	1.81	1.7
Cadmium (Tsp) Stp	92	91	0.000264	0.000264	2.11E-05	0.00183	0.00095	0.0009
Cadmium Pm10 Lc	93	93	0.000194	0.000194		0.00096	0.00094	0.0008
Cadmium Pm10 Stp	93	93	0.000197	0.000197	2.08E-05	0.00098	0.00098	0.0009
Carbon Disulfide	58	58	0.0598	0.0598	0.118	0.299	0.274	0.164
Carbon Tetrachloride	58	58	0.577	0.577	0.103	0.749	0.73	0.723

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Chlorobenzene	58	52	0.0256	0.0282	0.05	0.423	0.0414	0.0373
Chloroethane	58	46	0.0237	0.0282	0.0438	0.29	0.0995	0.0712
Chloroform	58	58	0.627	0.627	0.0643	1.47	1.39	0.84
Chloromethane	58	58	0.98	0.98	0.0628	1.36	1.32	1.26
Chloroprene	58	0	0	0.0241	0.0483	0	0	0
Chromium (Tsp) Stp	92	91	0.00596	0.00596	0.00167	0.0215	0.0211	0.0203
Chromium Pm10 Lc	93	93	0.00335	0.00335		0.023	0.0216	0.007
Chromium Pm10 Stp	93	93	0.00341	0.00341	0.00225	0.0238	0.0223	0.0073
Chrysene (Tsp) Stp	23	23	0.000759	0.000759	7.69E-06	0.00448	0.00312	0.0027
Cis-1,2-Dichloroethene	58	0	0	0.0275	0.0551	0	0	0
Cis-1,3-Dichloropropene	58	0	0	0.0223	0.0446	0	0	0
Cobalt (Tsp) Stp	92	91	0.00026	0.00026	3.16E-05	0.00056	0.00053	0.0005
Cobalt Pm10 Lc	93	93	0.000158	0.000158		0.00049	0.00046	0.0004
Cobalt Pm10 Stp	93	93	0.00016	0.00016	3.15E-05	0.00051	0.00048	0.0004
Copper (Tsp) Stp	92	91	0.0198	0.0198	0.00168	0.0745	0.0719	0.0695
Copper Pm10 Lc	93	93	0.0205	0.0205		0.148	0.0947	0.0749
Copper Pm10 Stp	93	93	0.0209	0.0209	0.000799	0.151	0.0976	0.0771
Coronene (Tsp) Stp	62	62	0.000104	0.000104	3.68E-06	0.000462	0.000434	0.00043
Crotonaldehyde	42	42	0.278	0.278	0.00851	1.13	0.927	0.911
Dibenzo[A,H]Anthracene (Tsp) Stp	62	38	4.13E-05	4.40E-05	1.38E-05	0.000441	0.000365	0.00027
Dibromochloromethane	58	11	0.00109	0.0579	0.14	0.0111	0.00937	0.00767
Dichlorodifluoromethane	58	58	2.12	2.12	0.0827	2.55	2.54	2.51
Dichloromethane	58	58	2.71	2.71	0.0787	11	8.89	8.27
Ethyl Acrylate	58	0	0	0.0258	0.0516	0	0	0
Ethylbenzene	58	58	0.205	0.205	0.0468	1.11	0.521	0.512
Ethylene Dibromide	58	0	0	0.0517	0.103	0	0	0
Ethylene Dichloride	58	57	0.0725	0.0729	0.0418	0.118	0.117	0.106

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Ethylene Oxide	57	50	0.223	0.232	0.147	1.05	0.726	0.602
Fluoranthene (Tsp) Stp	62	62	0.00368	0.00368	4.20E-05	0.0183	0.0145	0.0136
Fluorene (Tsp) Stp	62	62	0.00537	0.00537	8.45E-05	0.0274	0.0212	0.0198
Formaldehyde	70	70	3.26	3.26	0.0524	9.15	8.85	8.82
Freon 114	58	58	0.103	0.103	0.101	0.132	0.122	0.121
Hexachlorobutadiene	58	4	0.000736	0.0767	0.167	0.0256	0.00746	0.00533
Hexanaldehyde	67	67	0.2	0.2	0.0109	1.69	1.59	1.28
Indeno[1,2,3-Cd]Pyrene (Tsp) Stp	62	62	0.000231	0.000231	1.15E-05	0.00132	0.00122	0.00104
Iron (Tsp) Stp	92	91	1.27	1.27	0.027	5.7	4.88	3
Iron Pm10 Lc	93	93	0.696	0.696		2.22	1.94	1.8
Iron Pm10 Stp	93	93	0.706	0.706	0.0109	2.32	1.91	1.81
Lead (Tsp) Lc Frm/Fem	92	92	0.0128	0.0128		0.0978	0.0939	0.0516
Lead Pm10 Lc	93	93	0.0108	0.0108		0.11	0.102	0.0539
M/P Xylene	58	58	0.618	0.618	0.0559	3.6	1.78	1.68
Manganese (Tsp) Stp	92	91	0.0774	0.0774	0.000926	0.407	0.324	0.24
Manganese Pm10 Lc	93	93	0.0346	0.0346		0.149	0.126	0.118
Manganese Pm10 Stp	93	93	0.0351	0.0351	0.00037	0.156	0.127	0.119
Methyl Chloroform	58	47	0.0134	0.0208	0.0782	0.0338	0.0284	0.024
Methyl Ethyl Ketone	61	61	0.372	0.372	0.0853	0.746	0.687	0.675
Methyl Isobutyl Ketone	53	52	0.207	0.207	0.0614	0.635	0.586	0.5
Methyl Methacrylate	58	10	0.00439	0.0964	0.228	0.0446	0.0377	0.0373
Methyl Tert-Butyl Ether	58	6	0.00117	0.0217	0.0457	0.0209	0.0126	0.0101
Molybdenum (Tsp) Stp	92	91	0.00413	0.00413	0.000164	0.136	0.128	0.00889
Molybdenum Pm10 Lc	93	93	0.00379	0.00379		0.131	0.122	0.00817
Molybdenum Pm10 Stp	93	93	0.0039	0.0039	0.000293	0.135	0.126	0.0085
Ethylene Oxide	57	50	0.223	0.232	0.147	1.05	0.726	0.602
Naphthalene (Tsp) Stp	62	62	0.0577	0.0577	0.00176	0.152	0.143	0.137

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Nickel (Tsp) Stp	92	91	0.00272	0.00272	0.000894	0.0268	0.0259	0.00688
Nickel Pm10 Lc	93	93	0.00215	0.00215		0.0298	0.0278	0.00718
Nickel Pm10 Stp	93	93	0.00219	0.00219	0.00144	0.0308	0.0288	0.00713
N-Octane	58	58	0.105	0.105	0.104	0.432	0.265	0.258
O-Xylene	58	58	0.234	0.234	0.069	0.947	0.76	0.677
Perylene (Tsp) Stp	62	38	2.31E-05	2.61E-05	1.56E-05	0.000216	0.000191	0.00015
Phenanthrene (Tsp) Stp	62	62	0.0109	0.0109	0.000176	0.0526	0.0431	0.0391
Propionaldehyde	70	70	0.419	0.419	0.101	1.41	1.35	1.04
Propylene	58	58	0.415	0.415	0.221	1.76	1.6	1.06
Pyrene (Tsp) Stp	62	62	0.00191	0.00191	3.86E-05	0.00861	0.00749	0.00613
Styrene	58	57	0.372	0.373	0.0756	1.98	1.18	1.02
Tert-Amyl Methyl Ether	58	0	0	0.0227	0.0453	0	0	0
Tert-Butyl Ethyl Ether	58	0	0	0.0179	0.0358	0	0	0
Tetrachloroethylene	58	58	0.664	0.664	0.0864	8.55	6.92	2.64
Toluene	58	58	1.01	1.01	0.0698	4.22	3.16	2.8
Trans-1,2-Dichloroethylene	58	15	0.0025	0.0208	0.0493	0.0174	0.0155	0.0139
Trans-1,3-Dichloropropene	58	1	0.000517	0.0333	0.0667	0.03	0	0
Trichloroethylene	58	51	0.0383	0.0414	0.0514	0.155	0.0811	0.0758
Trichlorofluoromethane	58	58	1.19	1.19	0.0728	1.48	1.47	1.47
Valeraldehyde	70	70	0.149	0.149	0.0041	0.768	0.756	0.653
Vanadium (Tsp) Stp	92	91	0.00322	0.00322	6.30E-05	0.0228	0.0226	0.0105
Vanadium Pm10 Lc	93	93	0.00184	0.00184		0.0192	0.0184	0.00349
Vanadium Pm10 Stp	93	93	0.00187	0.00187	4.58E-05	0.0198	0.019	0.00365
Vinyl Chloride	58	5	0.00078	0.0181	0.0371	0.0245	0.0128	0.00332
Zinc (Tsp) Stp	92	91	0.114	0.114	0.00535	1.07	1.04	0.452
Zinc Pm10 Lc	93	93	0.0856	0.0856		1.02	0.883	0.485
Zinc Pm10 Stp	93	93	0.0877	0.0877	0.00226	1.07	0.923	0.488

Detroit-SW (W. Fort St., N. Delray-SWHS) (261630015) Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
1,1,2,2-Tetrachloroethane	28	0	0	0.162	0.323	0	0	0
1,1,2-Trichloroethane	28	0	0	0.0491	0.0981	0	0	0
1,1-Dichloroethane	28	0	0	0.0852	0.17	0	0	0
1,1-Dichloroethylene	28	0	0	0.0784	0.157	0	0	0
1,2,4-Trichlorobenzene	28	0	0	0.698	1.4	0	0	0
1,2,4-Trimethylbenzene	28	1	0.0218	0.171	0.309	0.61	0	0
1,2-Dichlorobenzene	28	0	0	0.185	0.37	0	0	0
1,2-Dichloropropane	28	0	0	0.55	1.1	0	0	0
1,3,5-Trimethylbenzene	28	0	0	0.12	0.24	0	0	0
1,3-Butadiene	28	0	0	0.06	0.12	0	0	0
1,3-Dichlorobenzene	28	0	0	0.143	0.286	0	0	0
1,4-Dichlorobenzene	28	0	0	0.194	0.388	0	0	0
2,2,4-Trimethylpentane	28	1	0.0186	0.0905	0.149	0.52	0	0
Acetaldehyde	30	30	2.72	2.72		4.27	4.26	4.18
Acetone	30	30	2.44	2.44		4.48	3.55	3.51
Acetonitrile	28	21	0.702	0.765	0.503	1.5	1.4	1.2
Acrolein - Unverified	30	28	0.0714	0.0765		0.134	0.114	0.108
Acrylonitrile	28	0	0	0.399	0.798	0	0	0
Arsenic (Tsp) Stp	61	61	0.00172	0.00172	4.54E-05	0.00582	0.00426	0.00322
Benzaldehyde	30	30	0.203	0.203		0.386	0.373	0.359
Benzene	28	25	0.596	0.601	0.0957	1.6	0.94	0.94
Bromodichloromethane	28	0	0	0.075	0.15	0	0	0
Bromoform	28	0	0	0.175	0.35	0	0	0

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Bromomethane	28	0	0	0.11	0.22	0	0	0
Cadmium (Tsp) Stp	61	61	0.000151	0.000151	2.02E-05	0.00035	0.00034	0.00031
Carbon Tetrachloride	28	0	0	0.115	0.23	0	0	0
Chlorobenzene	28	0	0	0.105	0.209	0	0	0
Chloroethane	28	0	0	0.06	0.12	0	0	0
Chloroform	28	1	0.0204	0.0789	0.121	0.57	0	0
Chloromethane	28	28	1.29	1.29	0.159	1.6	1.5	1.5
Cis-1,2-Dichloroethene	28	0	0	0.0641	0.128	0	0	0
Cis-1,3-Dichloropropene	28	0	0	0.0679	0.136	0	0	0
Crotonaldehyde	30	0	0			0	0	0
Dibromochloromethane	28	0	0	0.148	0.296	0	0	0
Dibromochloromethane	28	0	0	0.148	0.296	0	0	0
Dichlorodifluoromethane	28	27	2.18	2.19	0.25	2.5	2.5	2.5
Dichloromethane	28	11	0.159	0.266	0.349	0.55	0.47	0.43
Ethylbenzene	28	0	0	0.147	0.293	0	0	0
Ethylene Dibromide	28	0	0	0.15	0.3	0	0	0
Ethylene Dichloride	28	0	0	0.0984	0.197	0	0	0
Formaldehyde	30	30	2.27	2.27		5.66	4.43	4.11
Hexanaldehyde	30	30	0.165	0.165		0.352	0.339	0.335
Lead (Tsp) Lc Frm/Fem	61	61	0.00784	0.00784		0.0216	0.0206	0.0205
M/P Xylene	28	6	0.201	0.492	0.739	1.3	1	0.93
Manganese (Tsp) Stp	61	61	0.0501	0.0501	0.000883	0.246	0.177	0.155
Methacrolein	30	30	0.124	0.124		0.442	0.231	0.203
Methyl Chloroform	28	0	0	0.105	0.211	0	0	0
Methyl Ethyl Ketone	28	7	0.386	0.798	1.1	2.5	1.9	1.6

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Methyl Isobutyl Ketone	28	0	0	0.434	0.868	0	0	0
Methyl Tert-Butyl Ether	28	0	0	0.095	0.19	0	0	0
N-Hexane	28	17	0.758	0.775	0.0872	4.5	2.5	2.5
Nickel (Tsp) Stp	61	61	0.00204	0.00204	0.000852	0.00495	0.00479	0.00468
O-Xylene	28	1	0.0179	0.178	0.332	0.5	0	0
Pm10 Total 0-10um Stp	58	40	16.9	24.5		59	48	47
Propionaldehyde	30	30	0.353	0.353		0.61	0.606	0.576
Styrene	28	3	0.0939	0.439	0.773	0.89	0.88	0.86
Tetrachloroethylene	28	0	0	0.117	0.235	0	0	0
Tolualdehydes	30	18	0.048	0.0801		0.115	0.107	0.105
Toluene	28	25	0.764	0.787	0.445	2.4	1.6	1.4
Trans-1,2-Dichloroethylene	28	0	0	0.075	0.15	0	0	0
Trans-1,3-Dichloropropene	28	0	0	0.0452	0.0905	0	0	0
Trichloroethylene	28	0	0	0.0848	0.17	0	0	0
Trichlorofluoromethane	28	28	1.29	1.29	0.232	1.4	1.4	1.4
Valeraldehyde	30	30	0.223	0.223		0.42	0.39	0.359
Vinyl Chloride	28	0	0	0.065	0.13	0	0	0

Detroit-W. Jefferson, South Delray (261630027) Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	61	61	0.00196	0.00196	4.64E-05	0.00885	0.00454	0.00451
Cadmium (Tsp) Stp	61	61	0.000242	0.000242	2.00E-05	0.00141	0.00073	0.00063
Lead (Tsp) Lc Frm/Fem	61	61	0.0106	0.0106		0.0867	0.0318	0.0225
Manganese (Tsp) Stp	61	61	0.162	0.162	0.000893	0.896	0.584	0.527
Nickel (Tsp) Stp	61	61	0.00236	0.00236	0.000862	0.00848	0.00834	0.00797

Port Huron-Rural St. (261470031), Speciated $\text{PM}_{2.5}$ ($\mu\text{g}/\text{m}^3$)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	92	92	0.0014	0.0014	4.53E-05	0.00796	0.00607	0.00554
Cadmium (Tsp) Stp	92	92	0.000229	0.000229	2.00E-05	0.00141	0.00114	0.00113
Lead (Tsp) Lc Frm/Fem	92	92	0.0203	0.0203		0.146	0.122	0.120
Manganese (Tsp) Stp	92	92	0.00952	0.00952	0.000882	0.0313	0.0285	0.0276
Nickel (Tsp) Stp	92	92	0.000776	0.000776	0.00085	0.00224	0.00188	0.00187

River Rouge (261630005) Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Acetaldehyde	31	31	2.58	2.58		6.58	4.61	3.71
Acetone	31	31	2.67	2.67		6.3	4.5	4.34
Acrolein - Unverified	31	30	0.0934	0.0965		0.252	0.196	0.179
Arsenic (Tsp) Stp	61	61	0.00163	0.00163	4.54E-05	0.00851	0.00517	0.00479
Benzaldehyde	31	30	0.175	0.181		0.661	0.318	0.308
Cadmium (Tsp) Stp	61	61	0.000191	0.000191	2.00E-05	0.00049	0.00042	0.00039
Crotonaldehyde	31	0	0			0	0	0
Formaldehyde	31	31	3.37	3.37		7.6	6.65	6.33
Hexanaldehyde	31	31	0.17	0.17		0.515	0.507	0.35

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Lead (Tsp) Lc Frm/Fem	61	61	0.00592	0.00592		0.014995	0.013	0.0129
Manganese (Tsp) Stp	61	61	0.0318	0.0318	0.000877	0.0873	0.0871	0.0719
Methacrolein	31	31	0.154	0.154		0.444	0.437	0.337
Nickel (Tsp) Stp	61	61	0.00117	0.00117	0.000846	0.00484	0.00312	0.00237
Propionaldehyde	31	31	0.354	0.354		0.734	0.664	0.62
Tolualdehydes	31	20	0.0766	0.119		0.279	0.258	0.209
Valeraldehyde	31	30	0.174	0.18		0.419	0.364	0.355

Belding-Merrick St. (260670003) Concentrations in micrograms per cubic meter (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	60	60	0.00159	0.00159	4.62E-05	0.0242	0.00412	0.00396
Cadmium (Tsp) Stp	60	60	9.05E-05	9.05E-05	2.00E-05	0.00071	0.00038	0.00016
Lead (Tsp) Lc Frm/Fem	60	60	0.00396	0.00396		0.0284	0.00929	0.00882
Manganese (Tsp) Stp	60	60	0.0084	0.0084	0.000886	0.0242	0.0227	0.02
Nickel (Tsp) Stp	60	60	0.000605	0.000605	0.000854	0.00152	0.00116	0.00113

NMH 48217 (261630097) Concentrations in micrograms per cubic meter (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	61	61	0.00151	0.00151	4.46E-05	0.00867	0.00537	0.00529
Cadmium (Tsp) Stp	61	61	0.000133	0.000133	2.00E-05	0.00041	0.00031	0.00031
Lead (Tsp) Lc Frm/Fem	61	61	0.00509	0.00509		0.0207	0.0179	0.0135
Manganese (Tsp) Stp	61	61	0.0196	0.0196	0.000866	0.0611	0.0445	0.0415
Nickel (Tsp) Stp	61	61	0.00103	0.00103	0.000836	0.00271	0.00237	0.00205

DP4th (261630098) Concentrations in micrograms per cubic meter (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	61	61	0.00141	0.00141	4.51E-05	0.00531	0.00304	0.00278

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Cadmium (Tsp) Stp	61	61	0.000145	0.000145	2.00E-05	0.00037	0.00034	0.00032
Lead (Tsp) Lc Frm/Fem	61	61	0.00978	0.00978		0.104	0.0525	0.029
Manganese (Tsp) Stp	61	61	0.0435	0.0435	0.000881	0.162	0.102	0.101
Nickel (Tsp) Stp	61	61	0.00193	0.00193	0.000849	0.00527	0.00433	0.00398

Military Park (261630100) Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	61	61	0.0019	0.0019	0.0000452	0.00828	0.00764	0.00587
Cadmium (Tsp) Stp	61	61	0.00021	0.00021	0.00002	0.00073	0.00055	0.00046
Lead (Tsp) Lc Frm/Fem	61	61	0.0156	0.0156		0.0962	0.0796	0.0687
Manganese (Tsp) Stp	61	61	0.0442	0.0442	0.000875	0.153	0.126	0.108
Nickel (Tsp) Stp	61	61	0.0016	0.0016	0.000843	0.00584	0.00344	0.00313

Trinity (261630099) Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Arsenic (Tsp) Stp	61	61	0.00194	0.00194	4.43E-05	0.00768	0.00575	0.00486
Cadmium (Tsp) Stp	61	61	0.000222	0.000222	2.00E-05	0.00104	0.00053	0.00047
Lead (Tsp) Lc Frm/Fem	61	61	0.0109	0.0109		0.0541	0.0301	0.0276
Manganese (Tsp) Stp	61	61	0.0655	0.0655	0.00087	0.177	0.164	0.14
Nickel (Tsp) Stp	61	61	0.00291	0.00291	0.000839	0.00985	0.00799	0.00717

APPENDIX B-2 Data Tables

Allen Park (261630001), Speciated PM_{2.5} (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Aluminum Pm2.5 Lc	118	87	0.026	0.026	0.0229	0.533	0.135	0.112
Ammonium Ion Pm2.5 Lc	119	119	0.52	0.52	0.0129	3.73	3	2.18
Antimony Pm2.5 Lc	118	68	0.00529	0.00529	0.016	0.0313	0.0248	0.0241
Arsenic Pm2.5 Lc	118	37	2.52E-05	3.07E-05	0.0001	0.00028	0.00027	0.00026
Barium Pm2.5 Lc	118	73	0.0147	0.0148	0.0283	0.47	0.0795	0.0505
Bromine Pm2.5 Lc	118	38	0.000544	0.000589	0.000136	0.00708	0.00637	0.00555
Cadmium Pm2.5 Lc	118	68	0.00401	0.00407	0.0137	0.0274	0.0235	0.0198
Calcium Pm2.5 Lc	118	118	0.0616	0.0616	0.00981	0.377	0.301	0.299
Cerium Pm2.5 Lc	118	55	0.00766	0.00766	0.0361	0.0499	0.0463	0.0462
Cesium Pm2.5 Lc	118	58	0.00703	0.00703	0.0271	0.047	0.0396	0.0388
Chlorine Pm2.5 Lc	119	118	0.108	0.108	0.0251	2.53	0.652	0.635
Chromium Pm2.5 Lc	118	100	0.0232	0.0232	0.00394	1.96	0.0584	0.0442
Cobalt Pm2.5 Lc	118	90	0.00218	0.00218	0.00228	0.0164	0.0147	0.0106
Copper Pm2.5 Lc	118	32	0.000253	0.000253	0.00157	0.0033	0.00319	0.00186
Ec Csn_Rev Unadjusted Pm2.5 Lc Tot	118	97	0.00767	0.00767	0.00421	0.283	0.0257	0.0256
Indium Pm2.5 Lc	121	121	0.416	0.416	0.00032	2.25	1.58	1.17
Iron Pm2.5 Lc	118	71	0.00504	0.00504	0.0147	0.0296	0.0268	0.0268
Lead Pm2.5 Lc	118	118	0.0704	0.0704	0.00845	0.229	0.221	0.218
Magnesium Pm2.5 Lc	118	90	0.00407	0.00407	0.00659	0.0164	0.0162	0.0146
Manganese Pm2.5 Lc	118	62	0.0225	0.0265	0.045	0.81	0.106	0.101
Nickel Pm2.5 Lc	118	91	0.00254	0.00254	0.00296	0.0136	0.00949	0.00918
Oc Csn_Rev Unadjusted Pm2.5 Lc Tot	118	92	0.000894	0.000894	0.00122	0.00539	0.0042	0.00402

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Phosphorus Pm2.5 Lc	121	121	1.99	1.99	0.643	10.7	5.1	4.3
Potassium Ion Pm2.5 Lc	118	101	0.000149	0.000261	0.00196	0.00439	0.00306	0.00217
Potassium Pm2.5 Lc	119	118	0.109	0.109	0.0129	8.82	0.307	0.287
Rubidium Pm2.5 Lc	118	118	0.129	0.129	0.00539	8.59	0.404	0.332
Selenium Pm2.5 Lc	118	61	0.000944	0.000956	0.00315	0.00502	0.00499	0.00491
Silicon Pm2.5 Lc	118	75	0.00126	0.00126	0.00244	0.012	0.00633	0.00502
Silver Pm2.5 Lc	118	116	0.0582	0.0582	0.0136	0.301	0.252	0.248
Sodium Ion Pm2.5 Lc	119	119	0.035	0.035	0.014	0.466	0.406	0.221
Sodium Pm2.5 Lc	118	85	0.0355	0.0355	0.0801	0.223	0.158	0.134
Strontium Pm2.5 Lc	118	79	0.00307	0.0031	0.00292	0.205	0.0111	0.00886
Sulfate Pm2.5 Lc	119	118	1.01	1.01	0.0294	8.11	4.75	2.31
Sulfur Pm2.5 Lc	118	117	0.357	0.357	0.00104	2.5	1.65	0.908
Tin Pm2.5 Lc	118	69	0.00542	0.00542	0.0155	0.023	0.0222	0.022
Titanium Pm2.5 Lc	118	106	0.00337	0.00337	0.00291	0.0453	0.00961	0.00933
Total Nitrate Pm2.5 Lc	119	118	1.53	1.53	0.0383	11.7	9.05	6.89
Vanadium Pm2.5 Lc	118	43	0.000244	0.00048	0.000708	0.00273	0.00228	0.00212
Zinc Pm2.5 Lc	118	118	0.0138	0.0138	0.00172	0.0894	0.0473	0.0391
Zirconium Pm2.5 Lc	118	65	0.00436	0.00436	0.014	0.0306	0.0259	0.0231

Dearborn (261630033), Speciated PM_{2.5} (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Aluminum Pm2.5 Lc	60	40	0.0218	0.0218	0.0228	0.122	0.0904	0.0856
Ammonium Ion Pm2.5 Lc	60	60	0.53	0.53	0.0129	3.56	2.32	2.28
Antimony Pm2.5 Lc	60	28	0.00281	0.00281	0.016	0.0256	0.0192	0.0107
Arsenic Pm2.5 Lc	60	16	7.57E-05	8.15E-05	0.0001	0.00337	0.00033	0.00028
Barium Pm2.5 Lc	60	30	0.00856	0.00856	0.0283	0.0441	0.0382	0.0356
Bromine Pm2.5 Lc	60	20	0.000705	0.000752	0.000135	0.00614	0.00587	0.00444
Cadmium Pm2.5 Lc	60	27	0.00352	0.00352	0.0138	0.0218	0.0212	0.0149
Calcium Pm2.5 Lc	60	60	0.0936	0.0936	0.00978	0.369	0.355	0.286
Cerium Pm2.5 Lc	60	37	0.0118	0.0118	0.0363	0.0475	0.044	0.0433
Cesium Pm2.5 Lc	60	33	0.00668	0.00668	0.027	0.0376	0.0331	0.0264
Chlorine Pm2.5 Lc	60	60	0.179	0.179	0.0251	2.56	0.523	0.49
Chromium Pm2.5 Lc	60	54	0.0261	0.0261	0.00393	0.204	0.163	0.131
Cobalt Pm2.5 Lc	59	48	0.00483	0.00483	0.00228	0.122	0.0268	0.0183
Copper Pm2.5 Lc	59	22	0.000411	0.000411	0.00159	0.00422	0.00255	0.00217
Ec Csn_Rev Unadjusted Pm2.5 Lc Tot	59	58	0.0135	0.0135	0.00424	0.0838	0.0492	0.0479
Indium Pm2.5 Lc	61	60	0.55	0.55	0.00032	1.72	1.5	1.37
Iron Pm2.5 Lc	60	33	0.00415	0.00415	0.0148	0.0267	0.0207	0.017
Lead Pm2.5 Lc	59	58	0.285	0.285	0.00843	3.29	1.75	0.781
Magnesium Pm2.5 Lc	60	51	0.00777	0.00777	0.0066	0.116	0.0439	0.0159
Manganese Pm2.5 Lc	60	50	0.00576	0.00576	0.00297	0.0233	0.0222	0.0181
Nickel Pm2.5 Lc	59	47	0.00238	0.00238	0.00122	0.0587	0.00641	0.0059
Oc Csn_Rev Unadjusted Pm2.5 Lc Tot	61	61	2.32	2.32	0.643	4.87	4.59	4.17
Phosphorus Pm2.5 Lc	60	54	0.00049	0.000556	0.00196	0.00649	0.00473	0.00431
Potassium Ion Pm2.5 Lc	60	58	0.0445	0.0445	0.0129	0.221	0.18	0.174
Potassium Pm2.5 Lc	60	60	0.0611	0.0611	0.00544	0.207	0.194	0.192

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Rubidium Pm2.5 Lc	60	25	0.00065	0.000699	0.00316	0.00385	0.00373	0.00356
Selenium Pm2.5 Lc	60	41	0.00124	0.00124	0.00243	0.0116	0.00523	0.00522
Silicon Pm2.5 Lc	60	59	0.0616	0.0616	0.0138	0.234	0.226	0.172
Silver Pm2.5 Lc	60	30	0.00463	0.00463	0.0129	0.0238	0.0214	0.0213
Sodium Ion Pm2.5 Lc	60	60	0.0492	0.0492	0.0141	0.25	0.218	0.168
Sodium Pm2.5 Lc	60	45	0.0618	0.0626	0.0805	0.488	0.223	0.173
Strontium Pm2.5 Lc	60	39	0.00105	0.00105	0.00291	0.00358	0.00358	0.00349
Sulfate Pm2.5 Lc	60	60	1.08	1.08	0.0294	2.94	2.22	2.19
Sulfur Pm2.5 Lc	60	59	0.37	0.37	0.00105	1.1	0.855	0.785
Tin Pm2.5 Lc	60	28	0.00488	0.00488	0.0155	0.0501	0.0253	0.0199
Titanium Pm2.5 Lc	60	49	0.00269	0.0027	0.00292	0.0112	0.00743	0.00734
Total Nitrate Pm2.5 Lc	60	59	1.43	1.43	0.0386	11.8	7.03	6.78
Vanadium Pm2.5 Lc	60	26	0.000628	0.000826	0.000713	0.0178	0.00211	0.00204
Zinc Pm2.5 Lc	60	59	0.0506	0.0506	0.00172	0.654	0.271	0.268
Zirconium Pm2.5 Lc	60	28	0.00352	0.00352	0.0139	0.0213	0.0181	0.0139

Detroit-SW, (W Fort St., N. Delray-SWHS) (261630015), Speciated PM_{2.5} (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Aluminum Pm2.5 Lc	59	47	0.0402	0.0402	0.023	0.254	0.24	0.141
Ammonium Ion Pm2.5 Lc	59	59	0.552	0.552	0.0129	4.2	2.32	2.31
Antimony Pm2.5 Lc	59	38	0.0068	0.0068	0.0159	0.0329	0.0325	0.0323
Arsenic Pm2.5 Lc	59	18	1.42E-05	1.76E-05	0.0001	0.00022	0.00007	0.00006
Barium Pm2.5 Lc	59	38	0.0108	0.0108	0.0284	0.0572	0.0477	0.0373
Bromine Pm2.5 Lc	59	28	0.000913	0.000957	0.000136	0.00513	0.00448	0.00418
Cadmium Pm2.5 Lc	59	32	0.00382	0.00382	0.0137	0.0215	0.0187	0.0177
Calcium Pm2.5 Lc	59	59	0.204	0.204	0.00984	1.87	1.55	1.35
Cerium Pm2.5 Lc	59	32	0.00873	0.00873	0.0362	0.0527	0.0333	0.0321
Cesium Pm2.5 Lc	59	31	0.00816	0.00816	0.0271	0.0596	0.0355	0.032
Chloride Pm2.5 Lc	59	59	0.198	0.198	0.0254	1.48	1.04	0.928
Chlorine Pm2.5 Lc	59	54	0.0285	0.0285	0.00391	0.561	0.157	0.136
Chromium Pm2.5 Lc	59	42	0.00171	0.00173	0.00229	0.0139	0.00851	0.0078
Cobalt Pm2.5 Lc	59	18	0.000167	0.000178	0.00158	0.00136	0.00116	0.00113
Copper Pm2.5 Lc	59	59	0.0123	0.0123	0.00423	0.0658	0.0288	0.0277
Ec Csn_Rev Unadjusted Pm2.5 Lc Tot	58	58	0.526	0.526	0.00032	1.19	1.12	1.11
Indium Pm2.5 Lc	59	35	0.00463	0.00463	0.0148	0.0229	0.0163	0.0162
Iron Pm2.5 Lc	59	59	0.133	0.133	0.00846	0.627	0.535	0.411
Lead Pm2.5 Lc	59	49	0.00558	0.00558	0.0066	0.0255	0.0214	0.0203
Magnesium Pm2.5 Lc	59	37	0.0266	0.0295	0.045	0.223	0.223	0.12
Manganese Pm2.5 Lc	59	49	0.00476	0.00476	0.00298	0.0249	0.0245	0.0204
Nickel Pm2.5 Lc	59	44	0.000964	0.000964	0.00122	0.00654	0.00385	0.00286
Oc Csn_Rev Unadjusted Pm2.5 Lc Tot	58	58	2.26	2.26	0.644	4.92	4.38	4.32
Phosphorus Pm2.5 Lc	59	54	0.000357	0.000409	0.00196	0.00577	0.00375	0.00206

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Potassium Ion Pm2.5 Lc	59	59	0.0374	0.0374	0.0129	0.214	0.168	0.135
Potassium Pm2.5 Lc	59	59	0.0658	0.0658	0.00541	0.379	0.19	0.189
Rubidium Pm2.5 Lc	59	29	0.000877	0.000877	0.00316	0.00558	0.00504	0.00461
Selenium Pm2.5 Lc	59	39	0.00114	0.00114	0.00244	0.00553	0.00482	0.00453
Silicon Pm2.5 Lc	59	59	0.129	0.129	0.0136	0.92	0.916	0.522
Silver Pm2.5 Lc	59	29	0.00362	0.00362	0.0128	0.0216	0.0159	0.0146
Sodium Ion Pm2.5 Lc	59	59	0.0279	0.0279	0.0141	0.125	0.0839	0.0709
Sodium Pm2.5 Lc	59	42	0.0426	0.0426	0.0803	0.42	0.171	0.163
Strontium Pm2.5 Lc	59	37	0.00191	0.00191	0.00292	0.0109	0.00845	0.00778
Sulfate Pm2.5 Lc	59	59	1.11	1.11	0.0294	2.91	2.43	2.29
Sulfur Pm2.5 Lc	59	59	0.401	0.401	0.00105	1.01	0.988	0.925
Tin Pm2.5 Lc	59	35	0.00486	0.00486	0.0156	0.0311	0.0199	0.0192
Titanium Pm2.5 Lc	59	47	0.00399	0.00399	0.00292	0.0258	0.0209	0.0117
Total Nitrate Pm2.5 Lc	59	59	1.37	1.37	0.0385	11.6	6.67	6.18
Vanadium Pm2.5 Lc	59	29	0.000383	0.000573	0.000718	0.00234	0.00177	0.00151
Zinc Pm2.5 Lc	59	59	0.0201	0.0201	0.00172	0.0995	0.0646	0.0638
Zirconium Pm2.5 Lc	59	30	0.00324	0.00324	0.014	0.0172	0.0142	0.0141

Grand Rapids (260810020), Speciated PM_{2.5} (µg/m³)

Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Aluminum Pm2.5 Lc	121	66	0.0146	0.0146	0.0322	0.146	0.142	0.134
Ammonium Ion Pm2.5 Lc	121	120	0.686	0.686	0.00692	4.44	4.23	3.56
Antimony Pm2.5 Lc	121	69	0.00517	0.00517	0.0388	0.0333	0.0289	0.0256
Arsenic Pm2.5 Lc	121	56	0.0000193	0.000165	0.00186	0.00011	0.00011	0.00011
Barium Pm2.5 Lc	121	71	0.0111	0.0111	0.0801	0.132	0.0759	0.0643
Bromine Pm2.5 Lc	121	27	0.000379	0.00215	0.00454	0.00651	0.00518	0.00514
Cadmium Pm2.5 Lc	121	70	0.00465	0.00465	0.0158	0.0248	0.0246	0.0242
Calcium Pm2.5 Lc	121	121	0.0298	0.0298	0.00885	0.162	0.0926	0.0876
Cerium Pm2.5 Lc	121	61	0.0119	0.0119	0.0954	0.0644	0.0593	0.0583
Cesium Pm2.5 Lc	114	65	0.00807	0.00807	0.0271	0.053	0.0373	0.0369
Chloride Pm2.5 Lc	113	113	0.116	0.116	0.0249	4.3	0.279	0.267
Chlorine Pm2.5 Lc	114	89	0.0319	0.0319	0.00389	3.04	0.242	0.0271
Chromium Pm2.5 Lc	111	81	0.00167	0.00167	0.00229	0.0172	0.0106	0.00803
Cobalt Pm2.5 Lc	111	35	0.000269	0.000269	0.00158	0.00383	0.00309	0.0024
Copper Pm2.5 Lc	111	91	0.00706	0.00706	0.0041	0.366	0.0705	0.0195
Ec Csn_Rev Unadjusted Pm2.5 Lc Tot	111	111	0.386	0.386	0.00032	1.55	1.53	1.15
Indium Pm2.5 Lc	114	64	0.00533	0.00541	0.0146	0.0237	0.0228	0.0222
Iron Pm2.5 Lc	111	111	0.0553	0.0553	0.00839	0.191	0.172	0.15
Lead Pm2.5 Lc	114	70	0.00356	0.00356	0.00659	0.0334	0.0169	0.0149
Magnesium Pm2.5 Lc	114	61	0.0275	0.0322	0.0452	1.21	0.108	0.0932
Manganese Pm2.5 Lc	114	86	0.00221	0.00221	0.00296	0.0127	0.00965	0.00842
Nickel Pm2.5 Lc	111	86	0.000768	0.000773	0.00121	0.00411	0.00348	0.00288
Oc Csn_Rev Unadjusted Pm2.5 Lc Tot	111	111	2.17	2.17	0.638	8.59	5.98	5.75
Phosphorus Pm2.5 Lc	114	101	0.000265	0.000338	0.00203	0.00679	0.00611	0.0046

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Chemical Name	Num Obs	Obs > MDL	Average (ND=0)	Average (ND=MDL/2)	MDL	Max 1	Max 2	Max 3
Potassium Ion Pm2.5 Lc	113	113	0.173	0.173	0.0129	14.4	0.776	0.284
Potassium Pm2.5 Lc	114	114	0.166	0.166	0.00544	11.9	0.747	0.357
Rubidium Pm2.5 Lc	114	65	0.00117	0.00117	0.00317	0.00874	0.00854	0.00628
Selenium Pm2.5 Lc	114	70	0.00088	0.00088	0.00247	0.00495	0.00454	0.00406
Silicon Pm2.5 Lc	114	101	0.0376	0.0376	0.0139	0.231	0.221	0.131
Silver Pm2.5 Lc	114	69	0.00419	0.00419	0.0128	0.0259	0.0225	0.0221
Sodium Ion Pm2.5 Lc	113	112	0.0193	0.0193	0.014	0.0892	0.0844	0.0754
Sodium Pm2.5 Lc	114	82	0.0362	0.0362	0.0791	0.29	0.213	0.143
Strontium Pm2.5 Lc	114	76	0.00346	0.00346	0.00292	0.244	0.00847	0.00608
Sulfate Pm2.5 Lc	113	113	0.982	0.982	0.0292	13.1	3.57	2.5
Sulfur Pm2.5 Lc	114	114	0.331	0.331	0.00102	3.63	1.23	0.95
Tin Pm2.5 Lc	114	58	0.00498	0.00498	0.0155	0.029	0.0249	0.0236
Titanium Pm2.5 Lc	114	98	0.00387	0.00387	0.00292	0.0572	0.0199	0.0172
Total Nitrate Pm2.5 Lc	113	113	1.44	1.44	0.0388	7.89	6.65	6.26
Vanadium Pm2.5 Lc	114	25	0.000113	0.000382	0.000697	0.00346	0.00144	0.00102
Zinc Pm2.5 Lc	114	114	0.0153	0.0153	0.00173	0.416	0.0414	0.0359
Zirconium Pm2.5 Lc	114	64	0.00401	0.00401	0.014	0.027	0.0227	0.0165

APPENDIX C - SUMMARY

Appendix C summarizes the development of the NAAQS and how compliance with these standards is determined. Also included is the variety of monitoring techniques, requirements used to ensure quality data is obtained, and a history of NAAQS changes that have occurred since the inceptions of the CAA.

National Ambient Air Quality Standards (NAAQS)

Under Section 109 of the CAA, the USEPA established a primary and secondary NAAQS for each pollutant for which air quality criteria have been issued. The primary standard is designed to protect the public health with an adequate margin of safety, including the health of the most susceptible individuals in a population, such as children, the elderly, and those with chronic respiratory ailments. Factors in selecting the margin of safety for the primary standard include the nature and severity of the health effects involved and the size of the sensitive population at risk. Secondary standards are chosen to protect public welfare (personal comfort and well-being) and the environment by limiting economic damage, impacts on visibility and climate, and harmful effects on soil, water, crops, vegetation, wildlife, and buildings.

In addition, the NAAQS have various averaging times to address health impacts. Short averaging times reflect the potential for acute (immediate) effects, whereas long-term averaging times are designed to protect against chronic (long-term) effects.

NAAQS have been established for CO, Pb, NO₂, PM, O₃, and SO₂. **Table C1.1** lists the primary and secondary NAAQS, averaging time and concentration level for each criteria pollutant in effect in 2018. The concentrations are listed as parts per million (ppm), micrograms per cubic meter (µg/m³), and/or milligrams per cubic meter (mg/m³).

Table C1.1:

Pollutant	Primary (health) Level	Primary Averaging Time	Secondary (welfare) Level	Secondary Averaging Time
Carbon Monoxide (CO) 8-hour average	9 ppm (10 mg/m ³)	8-hour average, not to be exceeded more than once per year (1971)	None*	None*
Carbon Monoxide (CO) 1-hour average	35 ppm (40 mg/m ³)	1-hour average, not to be exceeded more than once per year (1971)	None*	None*
Lead (Pb)	0.15 µg/m ³	Maximum rolling 3-month average (2008)	Same as Primary	Same as Primary
Nitrogen Dioxide (NO₂) Annual mean	0.053 ppm (100 µg/m ³)	Annual mean (1971)	Same as Primary	Same as Primary
Nitrogen Dioxide (NO₂) 1-hour average	0.100 ppm	98 th percentile of 1-hour average, averaged over 3 years (2010)	Same as Annual	Same as Annual
Particulate Matter (PM₁₀)	150 µg/m ³	24-hour average, not to be exceeded more than once per year over 3 years (1987)	Same as Primary	Same as Primary
Particulate Matter (PM_{2.5}) Annual average	12.0 µg/m ³	Annual mean averaged over 3 years (2012)	15.0 µg/m ³	Annual mean
Particulate Matter (PM_{2.5}) 24-hour average	35 µg/m ³	98 th percentile of 24-hour concentration, averaged over 3 years (2006)	Same as Primary	Same as Primary
Ozone (O₃)	0.070 ppm	Annual 4 th highest 8-hour daily max averaged over 3 years (2015)	Same as Primary	Same as Primary
Sulfur Dioxide (SO₂)	0.075 ppm	99 th percentile of 1-hour daily max averaged over 3 years (2010)	0.5 ppm	3 hours

*In 1985, the USEPA revoked the secondary standard for CO (for public welfare) due to a lack of evidence of adverse effects on public welfare at or near ambient concentrations.

To demonstrate compliance with the NAAQS, the USEPA has defined specific criteria for each pollutant, which are summarized in **Table C1.2**.

Table C1.2: Criteria for the Determination of Compliance with the NAAQS

Pollutant	Criteria for Compliance
CO	Compliance with the CO standard is met when the second highest, non-overlapping, 35 ppm, 1-hour average standard and/or the 9 ppm, 8-hour average standard is not exceeded more than once per year.
Pb	Compliance with the Pb standard is met when daily values collected for three consecutive months are averaged and do not exceed the 0.15 µg/m ³ standard.
NO ₂	Compliance is met when the annual arithmetic mean concentration does not exceed the 0.053 ppm standard and the 98 th percentile* of the daily maximum 1-hour concentration averaged over 3 years does not exceed 100 ppb.
PM ₁₀	The 24-hour PM ₁₀ primary and secondary standards are met when 150 µg/m ³ is not exceeded more than once per year on average over 3 years.
PM _{2.5}	The annual PM _{2.5} primary and secondary standards are met when the annual arithmetic mean concentration is less than or equal to 12 µg/m ³ and 15 µg/m ³ , respectively. The 24-hour PM _{2.5} primary and secondary standards are met when the 3-year average of the 98 th percentile** 24-hour concentration is less than or equal to 35 µg/m ³ .
O ₃	The 8-hour O ₃ primary and secondary standards are met when the 3-year average of the 4th highest daily maximum 8-hour average concentration is less than or equal to 0.070 ppm.
SO ₂	To determine compliance, the 99 th percentile*** 1-hour concentration averaged over a 3-year period does not exceed 0.075 ppm, and the 3-hour average concentration shall not exceed 0.5 ppm more than once per calendar year.

*98th percentile daily maximum 1-hour value is the value below which nominally 98 percent of all daily maximum 1-hour concentration values fall, using the ranking and selection method specified in section 5.2 of appendix S of CFR Part 50.

** 98th percentile is the daily value out of a year of PM_{2.5} monitoring data below which 98 percent of all daily values fall using the ranking and selection method specified in section 4.5(a) of appendix N of CFR Part 50.

*** 99th percentile daily maximum 1-hour value is the value below which nominally 99 percent of all daily maximum 1-hour concentration values fall, using the ranking and selection method specified in section 5 of appendix T of CFR Part 50.

As part of the USEPA's grant to EGLE, the AQD provides an annual Network Review document¹⁴ of all monitoring data collected from the previous year and recommendations on any network changes. These recommendations are based on each monitor's exceedance history, changes in population distribution, and modifications to federal monitoring requirements under the CAA. Under the amended air monitoring regulations that began in 2007, states are required to solicit public comment (in May of each year) on their future air monitoring network design prior to submitting the annual review to the USEPA in July.

¹⁴ [Most recent Network Reviews](#)

Types of Monitors

Federal Reference Method (FRM): method of sampling and analyzing the ambient air for an air pollutant that USEPA uses as the “gold standard” for measuring that pollutant. FRM monitors are used to designate attainment/nonattainment areas. The gaseous pollutants CO, NO₂, O₃, and SO₂ are measured with continuous FRM monitors that provide real-time hourly data. The FRM for PM and Pb requires a filter that measure concentrations over a 24-hour period. These filters must be further analyzed in a laboratory; therefore, the samples results are delayed.

Rural background monitors: measure background air quality in non-urban areas

Aethalometers: measure carbon black, a combustion by-product typical of transportation sources, by concentrating particulate on a filter tape and measuring changes in optical transmissivity and absorption.

EC/OC instruments measure elemental carbon using pyrolysis coupled with a nondispersive infrared detector to separate the elemental and organic carbon fractions.

Federal Equivalent Method (FEM): method for measuring the concentration of an air pollutant in the ambient air that has been designated as equivalent to the FRM.

Continuous Monitors: measure data in real-time, meaning concentrations of the air pollutant are usually available within an hour on the Mlair website.

TEOM: tapered element oscillating monitors (TEOMs) are continuous PM monitor that is used only for real-time data indications since they are not FEMs and cannot be used for attainment/nonattainment designations.

BAM: Beta attenuation monitors (BAMs) are real-time, continuous PM_{2.5} monitor that is FEM, thus can be used for attainment/nonattainment designation.

T640: A continuous PM_{2.5} monitor that uses a light scattering technique to measure particulates. This FEM method can be used for attainment/nonattainment designation.

T640X: A continuous monitor that measures PM_{2.5}, PM₁₀ and PM coarse that uses a light scattering technique to measure particulates. This FEM method can be used for attainment/nonattainment designation.

PM_{2.5} FRM Monitoring: The concentrations of PM_{2.5} measured over a 24-hour time period are determined using the filter-based gravimetric FRM. Data generated by the FRM monitors are used for comparisons to the NAAQS in Michigan. The sites are located in urban, commercial, and residential areas where people are exposed to PM_{2.5}.

Chemical Speciation Monitoring: Speciated monitoring provides a better understanding of the chemical composition of PM_{2.5} material and better characterizes background levels. Single event Met-One Speciation Air Sampling System (SASS) monitors are used throughout Michigan's speciation network.

National Air Toxics Trend Station (NATTS): Network developed to fulfill the need for long-term hazardous air pollutants (HAPs) monitoring data of consistent quality. Among the principal objectives are assessing trends and emission reduction program effectiveness, assessing and verifying air quality models.

NCore Network: Began January 1, 2011, as part of the USEPA's 2006 amended air monitoring requirements. National Core (NCore) sites provide a full suite of measurements at one location. NCore

stations collect the following measurements: ozone, SO₂ (trace), CO (trace), NO_y (reactive oxides of nitrogen), PM_{2.5} FRM, continuous PM_{2.5}, speciated PM_{2.5}, wind speed, wind direction, relative humidity, and ambient temperature. In addition, filter-based measurements are required for PM coarse (PM_{10-2.5}) on a once every three-day sampling frequency. This information will support scientific studies ranging across technological, health, and atmospheric process disciplines. Michigan has two NCore sites; Allen Park and Grand Rapids.

Near-road Monitoring Network: Focuses on vehicle emissions and how they disperse near-roadways, was approved by USEPA in 2011. This network, now referred to as the near-roadway network, is focused on high traffic urban roads in Core-Based Statistical Areas (CBSAs) with more than one million people.

Population-Oriented Monitors: Monitors that are located in an area where many people live, also considered ambient air.

Transport monitors: Measure air pollutants that have travelled a distance from the emission sources and are formed in the atmosphere when certain pollutants are present, like ozone.

Source-Oriented/Point-Source Monitors: Monitors that are located near a specific emissions source (e.g., factory) of a pollutant.

Primary Monitor: Data from these monitors are used to compare to the NAAQS and must meet quality assurance criteria.

Secondary/Precision/Collocated Monitor: Two or more air samplers, analyzers, or other instruments that are operated simultaneously while located side by side. These are used for quality assurance purposes.

Urban Scale Monitors: Measures air pollution concentrations in more populated urban areas.

Quality Assurance

The AQD's Air Monitoring Unit (AMU) ensures that all data collected and reported is of high quality and meets federal requirements. The AMU has a quality system in place that includes a Quality Assurance Project Plan (QAPP), standard operating procedures (SOPs), standardized forms and documentation policies, and a robust audit and assessment program.

The monitoring network adheres to the requirements in Title 40 of the Code of Federal Regulations (CFR), Parts 50, 53, and 58. This ensures that the monitors are correctly sited, operated in accordance with the Federal Reference Methods, and adhere to the quality assurance requirements.

Quality assurance checks are conducted by site operators at the frequencies required in the regulations and unit procedures. Independent audits are conducted by the AMU's Quality Assurance (QA) Team, which has a separate reporting line of supervision. The quality assurance checks and audits are reported to the USEPA each quarter.

External audits are conducted annually by the USEPA. The USEPA conducts Performance Evaluation Program (PEP) audits for PM_{2.5} samplers and the National Performance Audit Program (NPAP) checks for the gaseous monitors. The USEPA also conducts program-wide Technical Systems Audits (TSAs) every three years to evaluate overall program operations and assess adequacy of documentation and records retention. External audits are also conducted on the laboratory operations for certain analytical techniques using performance evaluation samples.

Historical NAAQS Changes

CO

- 1971 1-hour: Second highest average does not exceed 35 in a year
- 8-hour: Second highest average does not exceed 9 ppm in a year.

Lead

- 1978 Calendar quarter values averaged does not exceed 1.5 $\mu\text{g}/\text{m}^3$
- 2008 3-month values averaged does not exceed 0.15 $\mu\text{g}/\text{m}^3$

NO₂

- 1971 Annual average of 53 ppb or less
- 2010 98th percentile of the 1-hour concentration averaged over 3 yrs. is 100 ppb or less

Ozone

- 1971 Total photochemical oxidants: 1-hour max of 0.08 ppm not exceeded once per yr
- 1979 1-hour: 1-hour maximum concentration is 0.12 ppm one or less hour per yr
- 1997 8-hour: 4th highest daily maximum 8-hour concentration averaged over 3 yrs. is 0.08 ppm or less
- 2008 8-hour: 4th highest daily maximum 8-hour concentration averaged over 3 yrs. is 0.075 ppm or less
- 2015 8-hour: 4th highest daily maximum 8-hour concentration averaged over 3 yrs. is 0.070 ppm or less

PM

- 1971 TSP: 24-hour average not to exceed 260 $\mu\text{g}/\text{m}^3$ more than once per yr
- Annual geometric mean of 75 $\mu\text{g}/\text{m}^3$
- 1987 PM₁₀: Indicator for PM changed from TSP to PM10
- 24-hour average not to exceed 150 $\mu\text{g}/\text{m}^3$ more than once per yr over a 3-yr period
- Annual mean of 50 $\mu\text{g}/\text{m}^3$ or less average over 3 yrs.
- 1997 PM_{2.5}: Annual mean of 15.0 $\mu\text{g}/\text{m}^3$ or less average over 3 yrs.
- 98th percentile of 24-hour average of 65 $\mu\text{g}/\text{m}^3$ or less averaged over 3 yrs.
- 2006 PM₁₀: Annual average revoked
- 24-hour average retained
- PM_{2.5}: Annual mean retained
- 98th percentile of 24-hour average of 35 $\mu\text{g}/\text{m}^3$ or less averaged over 3 yrs.
- 2012 PM_{2.5}: Annual mean of 12.0 $\mu\text{g}/\text{m}^3$ or less average over 3 yrs.

SO₂

- 1971 24-Hour concentration of 0.14 ppm not exceeded more than once per year
- Annual average of 0.03 ppm or less.
- 2010 1-hour average of 99th percentile is 75 ppb or less, averaged over 3 yrs.
- Previous standards revoked

APPENDIX D: ACRONYMS AND THEIR DEFINITIONS

>	Greater than
<	Less than
≥	Greater than or equal to
≤	Less than or equal to
%.....	Percent
µg/m ³	Micrograms per cubic meter
µm.....	Micrometer
AIRS ID.....	Aerometric Information Retrieval System Identification Number
AMU	Air Monitoring Unit
AQD	Air Quality Division
AQES.....	Air Quality Evaluation Section
AQI.....	Air Quality Index
AQS.....	Air Quality System (EPA air monitoring data archive)
As	Arsenic
BAM.....	Beta Attenuation Monitor (hourly PM _{2.5} measurement monitor)
BC	Black Carbon
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CAA.....	Clean Air Act
CBSA.....	Core-Based Statistical Area
Cd	Cadmium
CFR	Code of Federal Regulations
CO	Carbon monoxide
CSA	Consolidated Statistical Area
DW.....	Downwind
EC/OC.....	Elemental carbon/Organic carbon
EGLE.....	Michigan Department of Environment, Great Lakes and Energy
FDMS.....	Filter Dynamic Measurement System
FEM.....	Federal Equivalent Method
FIA.....	Family Independence Agency
FR	Federal Register
FRM	Federal Reference Method
GHIB.....	Gordie Howe International Bridge
HAP	Hazardous Air Pollutant
hr	Hour
Lc.....	Local Conditions

MASN	Michigan Air Sampling Network
MDL	Method Detection Limit
mg/m ³	Milligrams per meter cubed
MI	Michigan
MiSA	Micropolitan Statistical Area
Mn	Manganese
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standard
NAMS	National Air Monitoring Station
NATTS	National Air Toxics Trend Sites
NCore	National Core Monitoring Sites
ND	Non-detect
NEI	National Emission Inventory
Ni	Nickel
NMH 48217 ...	New Mount Hermon 48217 ZIP code monitoring site
NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
NO _y	Oxides of Nitrogen + nitric acid + organic and inorganic nitrates
NPAP	National Performance Audit Program
NR	Near Road
O ₃	Ozone
Obs/OBS	Observations
PAMS	Photochemical Assessment Monitoring Station
PAH	Polynuclear Aromatic Hydrocarbon
Pb	Lead
PBT	Persistent, Bioaccumulative and Toxic
PCB	Polychlorinated Biphenyls
PEP	Performance Evaluation Program
PM	Particulate Matter
PM _{2.5}	Particulate Matter with an aerodynamic diameter less than or equal to 2.5 microns
PM ₁₀	Particulate Matter with a diameter of 10 microns or less
PM _{10-2.5}	Coarse PM equal to the concentration difference between PM ₁₀ and PM _{2.5}
PNA	Polynuclear Aromatic Hydrocarbons
POC	Parameter Occurrence Code
ppb	Parts Per Billion
ppm	Parts Per Million = mg/kg, mg/L, µg/g (1 ppm = 1,000 ppb)
QA	Quality Assurance
QAPP	Quality Assurance Project Plan

SASS..... Speciation Air Sampling System (PM_{2.5} Speciation Sampler)
SO₂ Sulfur Dioxide
SOP Standard Operating Procedures
STN Speciation Trend Network (PM_{2.5})
Stp Standard Temperature and Pressure
SVOC..... Semi-Volatile Compound
SW Southwest
SWHS Southwestern High School
TAC..... Toxic Air Contaminant
TEOM..... Tapered element oscillating microbalance (hourly PM_{2.5} measurement monitor)
tpy Ton per year
TRI Toxic Release Inventory
TSA Technical Systems Audit
TSP..... Total Suspended Particulate
US United States
USEPA..... United States Environmental Protection Agency
UV Ultra-violet
VOC Volatile Organic Compounds

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Other units within the AQES: Strategy Development Unit, BioWatch Unit, Toxics Unit, and the Emissions Reporting & Assessment Unit.

Other units in EGLE: The Environmental Support Division

The Air Quality Division also wishes to acknowledge the many significant contributions of Mitch Toonstra of the **City of Grand Rapids, Air Pollution Control Division**, which operates and maintains air monitoring equipment in West Michigan.

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Michigan.gov/air

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Air Quality Division District Office Contact Information

Cadillac District – Cadillac Office

(Northwest Lower Peninsula)
120 W Chapin Street
Cadillac, MI 49601-2158
231-775-3960 Fax: 231-775-4050

Counties: Benzie, Grand Traverse, Kalkaska, Lake, Leelanau, Manistee, Mason, Missaukee, Osceola, and Wexford

Cadillac District - Gaylord Office

(Northeast Lower Peninsula)
2100 West M-32
Gaylord, MI 49735-9282
989-731-4920 Fax: 989-731-6181

Counties: Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Montmorency, Oscoda, Otsego, Presque Isle, and Roscommon

Detroit District

(Wayne County)
Cadillac Place, Suite 2-300
3058 West Grand Blvd.
Detroit, MI 48202-6058
313-456-4700 Fax: 313-456-4692

Counties: Wayne

Grand Rapids District

(Central West Michigan)
350 Ottawa Avenue,
NW Unit 10
Grand Rapids, MI 49503
616-356-0500 Fax: 616-356-0201

Counties: Barry, Ionia, Kent, Mecosta, Montcalm, Muskegon, Newaygo, Oceana, and Ottawa

Jackson District

(South Central Michigan)
State Office Building, 4th Floor
301 E Louis B Glick Highway
Jackson, MI 49201-1556
517-780-7690 Fax: 517-780-7855

Counties: Hillsdale, Jackson, Lenawee, Monroe, and Washtenaw

Kalamazoo District

(Southwest Michigan)
7953 Adobe Road
Kalamazoo, MI 49009-5026
269-567-3500 Fax: 269-567-3555

Counties: Allegan, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, and Van Buren

Lansing District

(Central Michigan)
P.O. Box 30242
Constitution Hall, 525 W. Allegan St., 1 South
Lansing, MI 48909-7760
517-284-6651 Fax: 517-241-3571

Counties: Clinton, Eaton, Genesee, Gratiot, Ingham, Lapeer, Livingston, and Shiawassee

Bay City District

(Central East Michigan)
401 Ketchum Street, Suite B
Bay City, MI 48708
989-894-6200 Fax: 989-891-9237

Counties: Arenac, Bay, Clare, Gladwin, Huron, Iosco, Isabella, Midland, Ogemaw, Saginaw, Sanilac, and Tuscola

Warren District

(Southeast Michigan)
27700 Donald Court
Warren, MI 48092-2793
586-753-3700 Fax: 586-753-3731

Counties: Macomb, Oakland, and St. Clair

Marquette District

(Entire Upper Peninsula)
1504 West Washington Street
Marquette, MI 49855
906-228-4853 Fax: 906-228-4940

Counties: All counties in the Upper Peninsula

Section 3.8

Site Photographs



Aerial Photograph



Aerial Photograph - E. Brown Street & S. Old Woodward Avenue



Aerial Photograph - Daines Street & S. Old Woodward Avenue



Aerial Photograph - Daines Street & S. Old Woodward Avenue

Section 3.9

Site Logistics

Proposed Haul Routes Map

Brown Street Mixed-Use



Section 4.0

Mechanical Equipment Specifications



Corner Weights (lb)								Center of Gravity (in.)			
AA		BB		CC		DD		EE		FF	
Base	Max	Base	Max	Base	Max	Base	Max	Base	Max	Base	Max
112	145	130	144	168	194	145	233	39.50	45.00	20.50	20.00

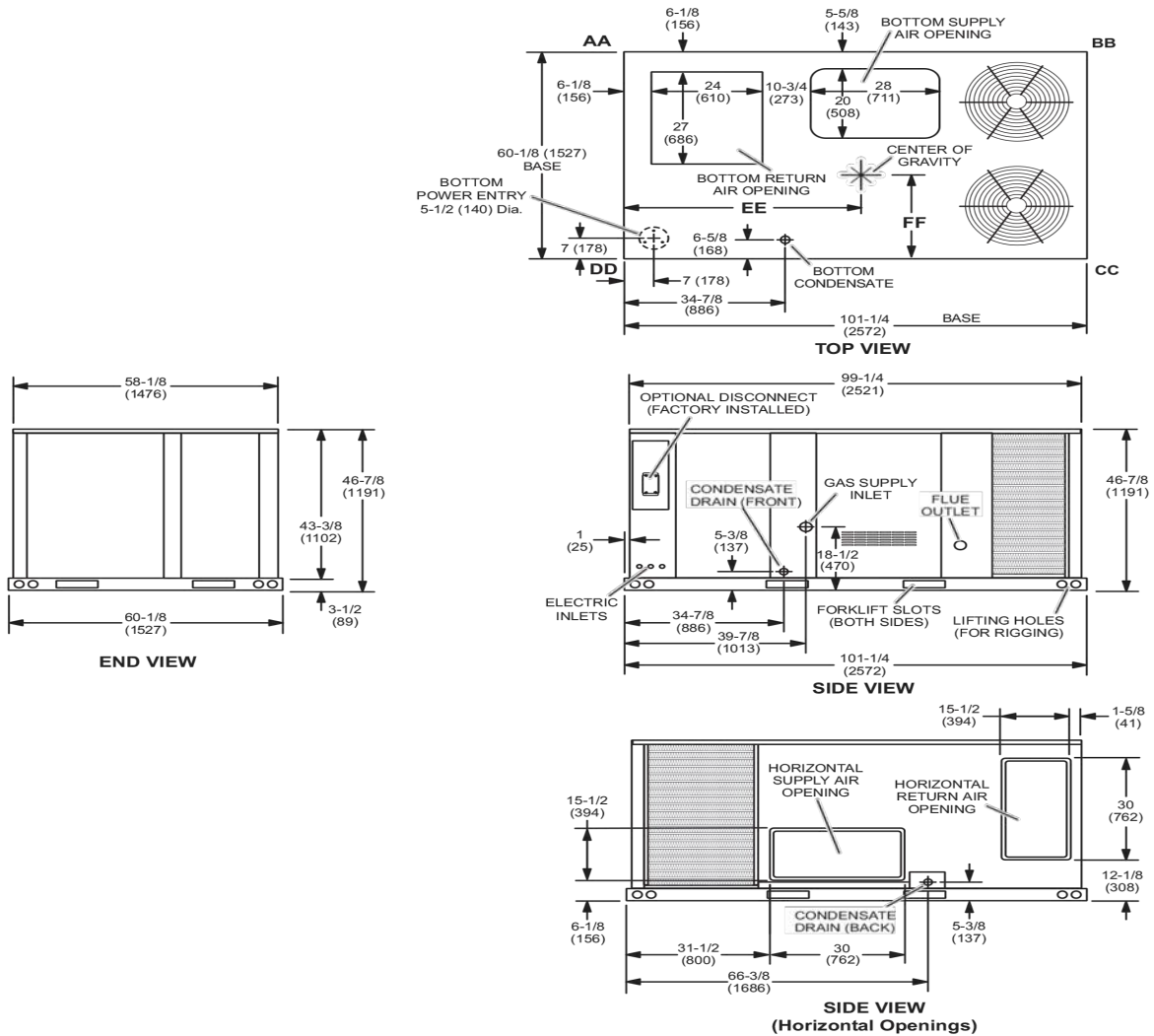


RETAIL RTU 7.5-TON



Project Submittal

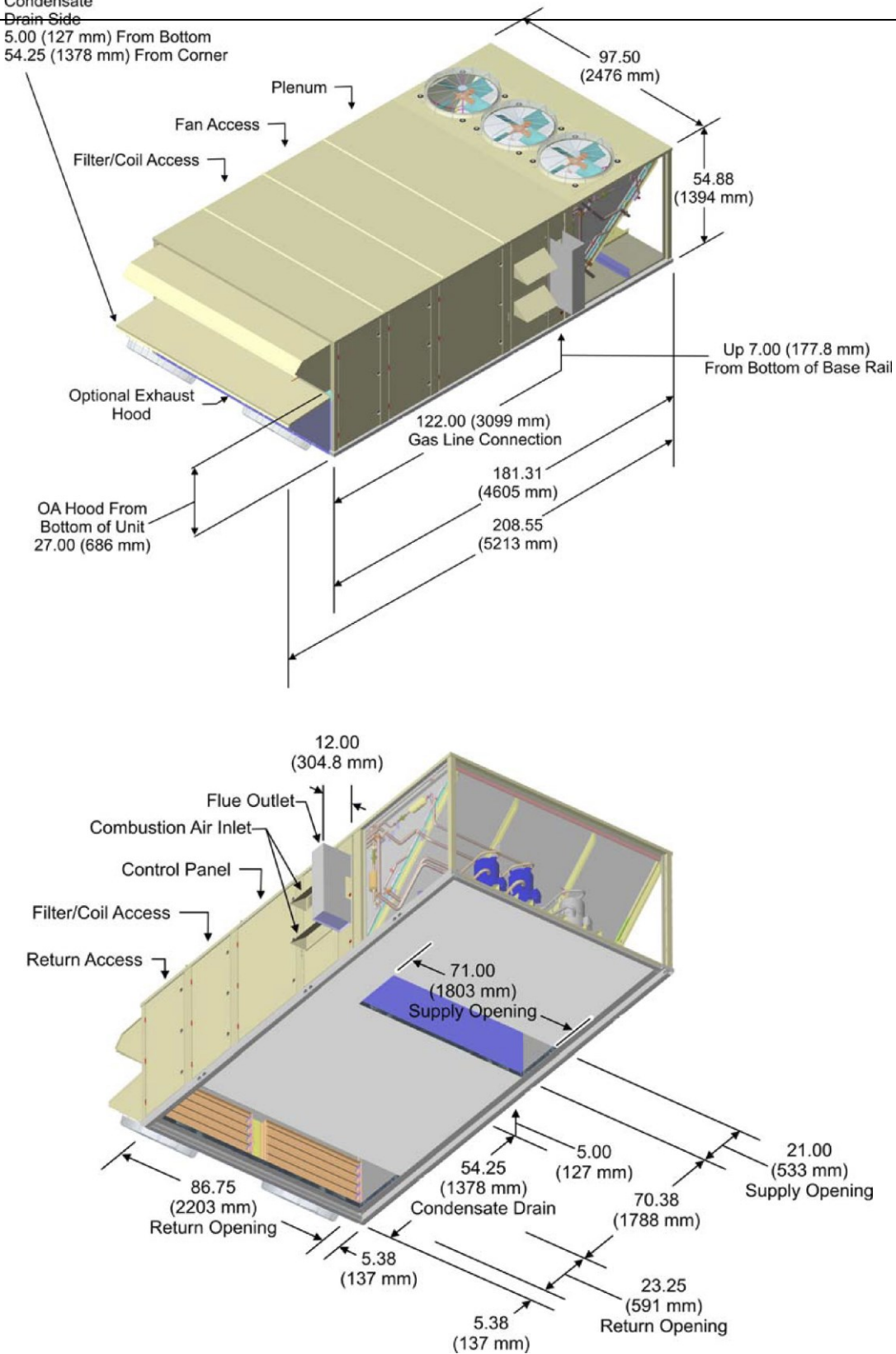
Corner Weights (lb)								Center of Gravity (in.)			
AA		BB		CC		DD		EE		FF	
Base	Max	Base	Max	Base	Max	Base	Max	Base	Max	Base	Max
236	325	201	264	218	278	264	353	44.50	43.50	24.50	25.50



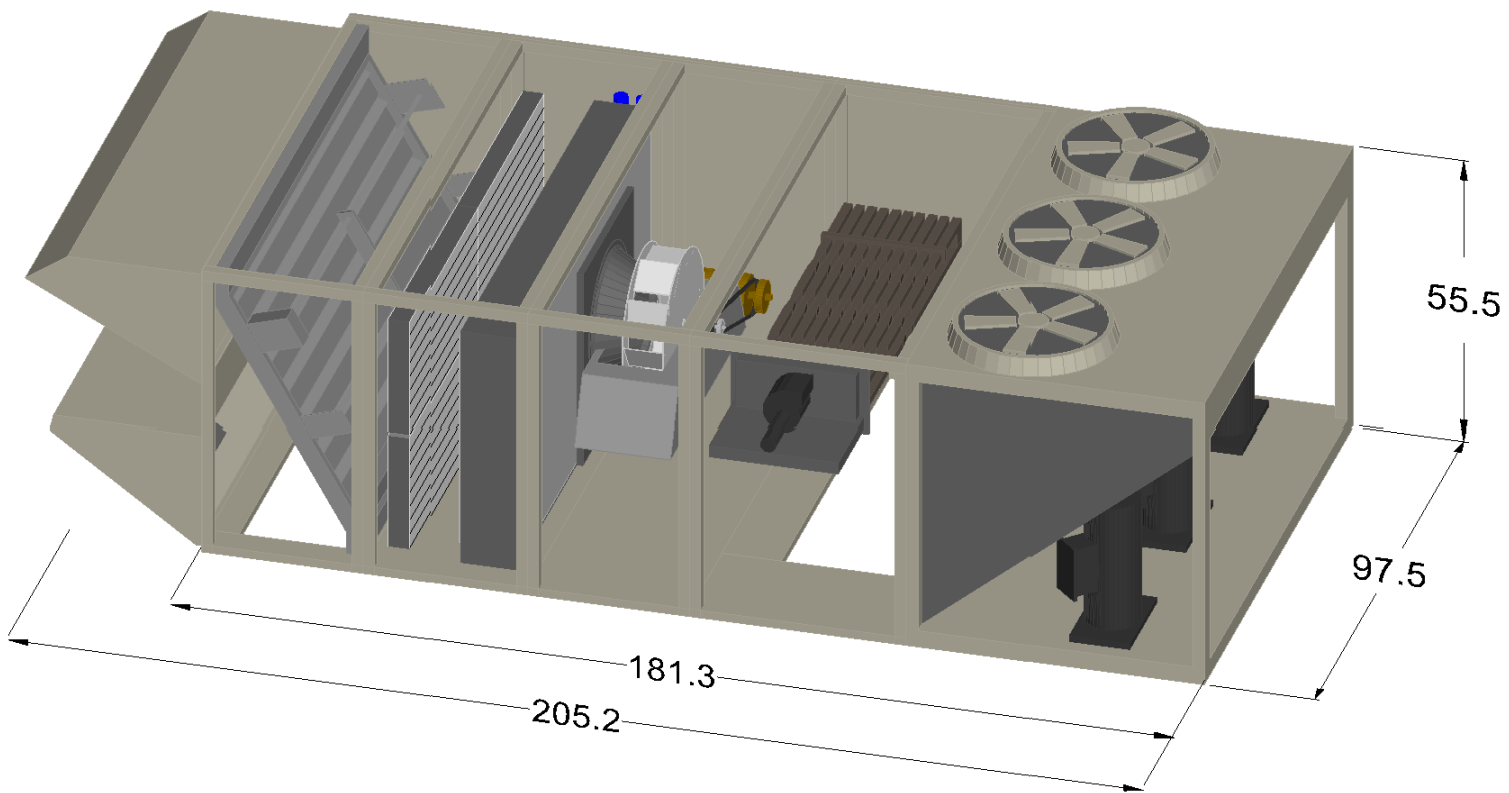
FIRST FLOOR OFFICE 25-TON RTU

MPS030-035A Gas heat_Drawing for 25 Ton RTU

No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.



No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.



Job Number:

V077D11

Job Name: Birmingham Mixed Use

Date:

1/1/2021

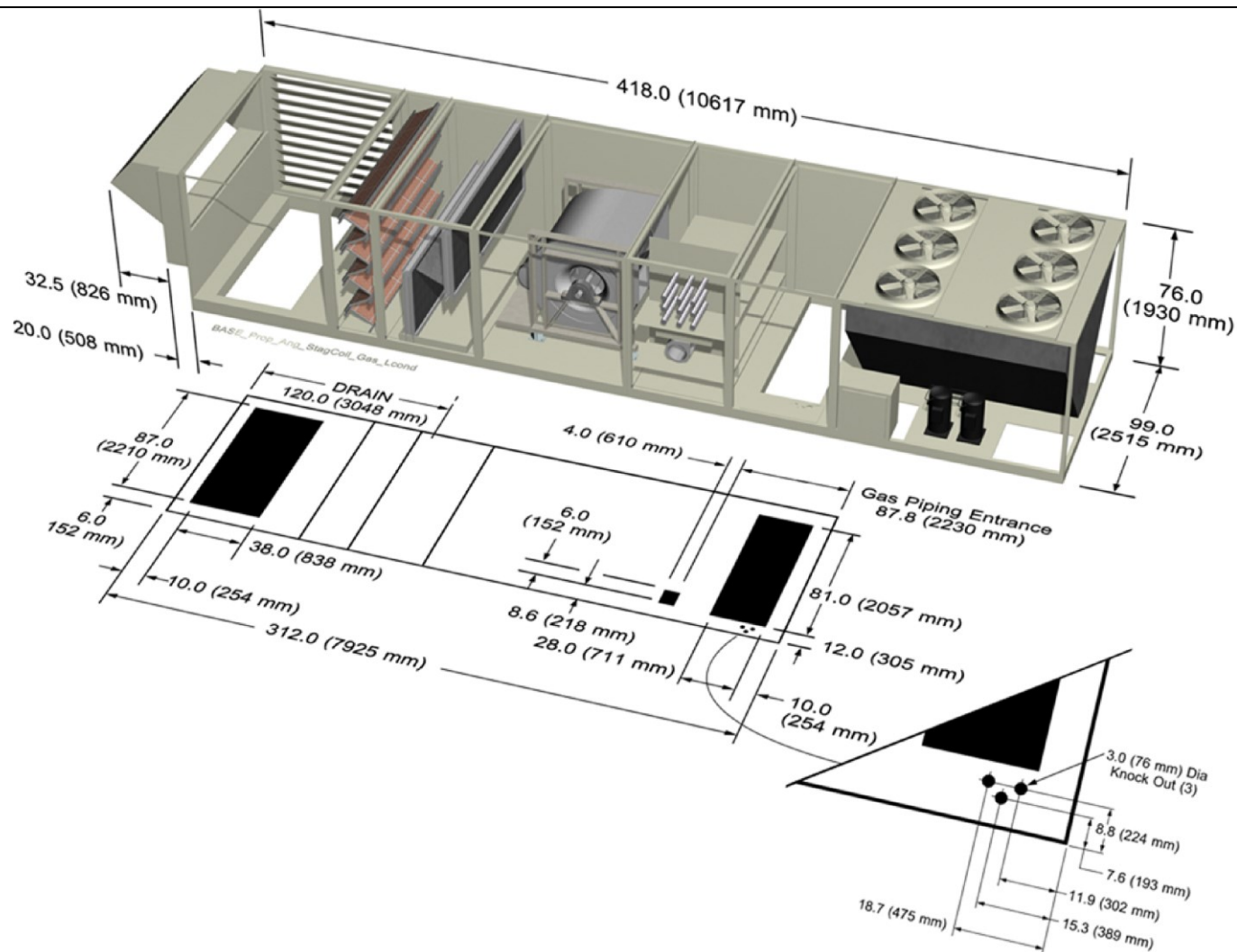
Prepared Date:

1/12/2022

www.DaikinApplied.com

SECOND FLOOR OFFICE 70-TON RTU

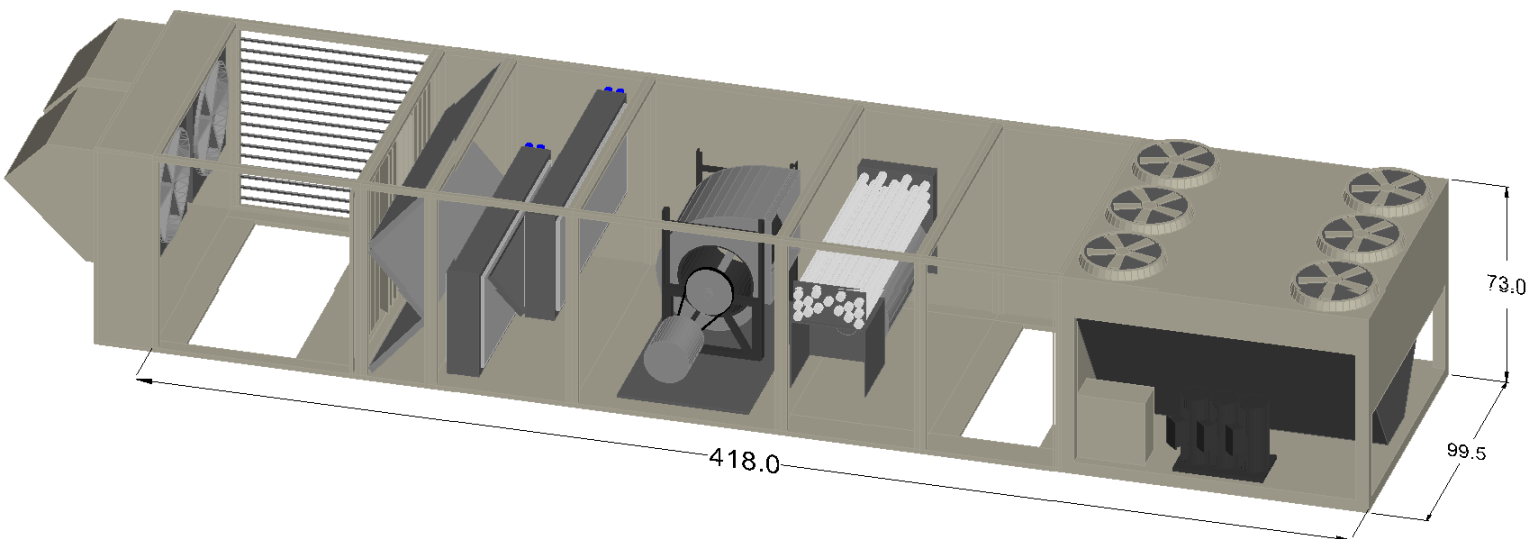
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MPS-62-075E Prop Ang StagCoil Gas Lcond_Drawing for 70 Ton RTU

Job Number: V077D11
Job Name: Birmingham Mixed Use
Date: 11/11/2011
Prepared Date:
www.DaikinApplied.com
1/12/2012

No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.



Job Number:

V077D11

Birmingham Mixed Use

Date:

16 of 61

Prepared Date:

1/12/2022

www.DaikinApplied.com

Inverter Driven Heat Pump

24,000 BTU Multi Position AHU

Job Name _____
 Location _____
 Engineer _____
 Submitted To _____
 Submitted By _____
 Reference _____

Date _____
 Approval _____
 Construction _____
 Unit No _____
 Drawing No _____

PRODUCT FEATURES

- Up to 1.0" WC
- 2-Wire Wired Remote Controls
- All Aluminum Coil
- Heating operation rated down to -5°F outdoor temperature.
- Long Lineset Lengths (up to 164')
- Integral Electric Heat Kit (Optional)



MODEL NUMBERS

Indoor Unit	AMUG24LMAS
Outdoor Unit	AOU24RGLX
System	24RGLXM

EFFICIENCIES

SEER	19.0
EER	12.0
HSPF	10.7
COP	3.20
	10.9

OUTDOOR TEMPERATURE OPERATION RANGE

Cooling	*F(°C)	-5 - 115 (-20 - 46)
Heating		-5 - 75 (-20 - 24)

CAPACITIES

Cooling	Rated	BTU/hW	24,000
	Min.—Max.		5,400 - 29,000
Heating	Rated		27,000
	Min.—Max.		5,400 - 32,400

LINESET REQUIREMENTS

Connection Method			Flare
Liquid	in (mm)		3/8
Gas			5/8
Pre-Charge Length	ft (m)		66 (20)
Minimum Length			16 (5)
Maximum Length			164 (50)
Max. Height Diff.			98 (30)

INDOOR DIMENSIONS & WEIGHT

Net (H x W x D)	in	42 8/16 x 21 x 21 11/16
	mm	1080 x 533 x 551
Gross (H x W x D)	in	42 12/16 x 24 x 25 5/16
	mm	1086 x 610 x 643
Net Weight	lb (kg)	104 (47)
Gross Weight		116 (52.5)

OUTDOOR DIMENSIONS & WEIGHT

Net (H x W x D)	in	32 11/16 x 35 7/16 x 13
	mm	830 x 900 x 330
Gross (H x W x D)	in	39 3/8 x 41 5/16 x 17 1/2
	mm	1000 x 1050 x 445
Net Weight	lb (kg)	134 (61)
Gross Weight		152 (69)

Warranty Information



7 Year Compressor, 5 Year Parts out-of-the-box Warranty



10 Year Compressor, 10 Year Parts Warranty when registered within 60 days of installation in a residence



12 Year Compressor, 12 Year Parts Warranty when registered within 60 days of installation in a residence, and installed by a Fujitsu Elite contractor

ACCESSORIES

UTY-RNRUZ4	Wired Remote Control
UTY-RSRY	Simple Remote Control
UTY-LBTUM	IR receiver kit with wireless remote controller
UTY-TTRX	Third Party Thermostat Adapter
UTY-TFSXZ2	WiFi Module
UTY-XCSX	External Input and Output PCB
UTY-XSZX	Remote Sensor

Due to continuous product improvements, specifications are subject to change without notice. Please log in to the Fujitsu Portal for the most up-to-date documentation
<https://portal.fujitsugeneral.com>

Effective Date: 7/9/2020

Version 24RGLXM -2020A

Fujitsu General America, Inc. • 340 Changebridge Rd, Pine Brook, NJ 07058 • Toll Free: (888) 888-3424 • www.fujitsugeneral.com

Inverter Driven Heat Pump
24,000 BTU Multi Position AHU

FAN DATA					ELECTRICAL SPECIFICATIONS						
Indoor Unit Airflow Rate	Cooling	High	CFM (m3/h)	800	Voltage/Frequency/Phase			208-230V/60Hz/1			
		Medium		670	Voltage Range			187—253 V			
		Low		590	Current	Cooling	Rated	A	8.8		
		Quiet		310		Heating	Rated		10.9		
	Heating	High		800	Maximum Operating Current		Cooling		15.6		
		Medium		670			Heating		16.1		
		Low		590	Starting Current				9.6		
		Quiet		310	MCA				20.8		
Outdoor Unit Airflow Rate	Cooling		2,119 (3,600)	Maximum Circuit Breaker					30		
Heating		2,119 (3,600)									
SOUND PRESSURE					Input Power	Cooling	Rated	kW			
Indoor Unit	Cooling	High	dB (A)	40			Min.—Max.		0.55 - 2.22		
		Medium		34		Heating	Rated		2.48		
		Low		32			Min.—Max.		0.55 - 3.47		
		Quiet		26	Power Factor	Cooling		%	98.8		
	Heating	High		37		Heating			98.9		
		Medium		33	OTHER						
		Low		31	Moisture Removal		pints/h (L/h)	4.6 (2.2)			
		Quiet		25	Energy Star					No	
Outdoor Unit	Cooling			53	Drain hose	Material	PVC				
Heating		55		Size		in (mm) Ø 3/4 (19) [O.D.]					
REFRIGERANT					Operation Range	Cooling	°F (°C)	64 to 90 (18 to 32)			
Type				410A			%RH	80 or less			
Charge	lb oz				Static Pressure Range	Heating	°F (°C)	60 to 86 (16 to 30)			
	g						in. WG	0-1.0			
Oil Type				POE (RB68)			Pa	20-250			

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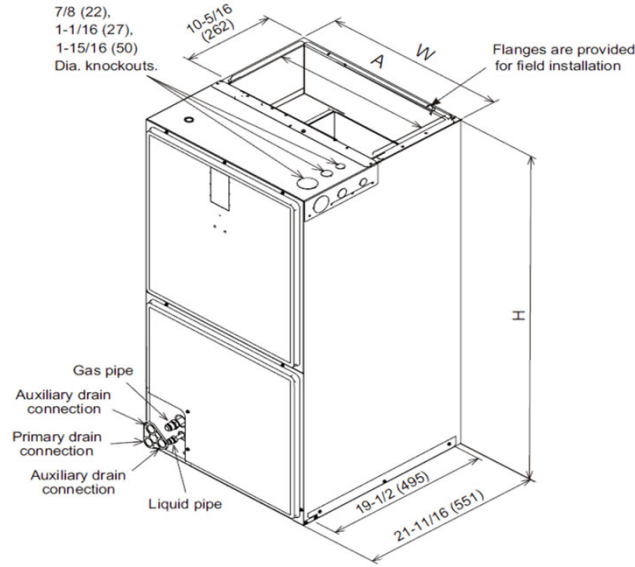
Note: Specifications are based on the following conditions:
Cooling: Indoor temperature of 80°F (26.7°C) DB/67°F (19.4°C) WB, and outdoor temperature of 95°F (35°C) DB/75°F (23.9°C) WB. Heating: Indoor temperature of 70°F (21.1°C) DB/60°F (15.6°C) WB, and outdoor temperature of 47°F (8.3°C) DB/43°F (6.1°C) WB. Pipe length: 25ft. (7.5m), Height difference: 0ft. (0m) (Outdoor unit – indoor unit).

Inverter Driven Heat Pump

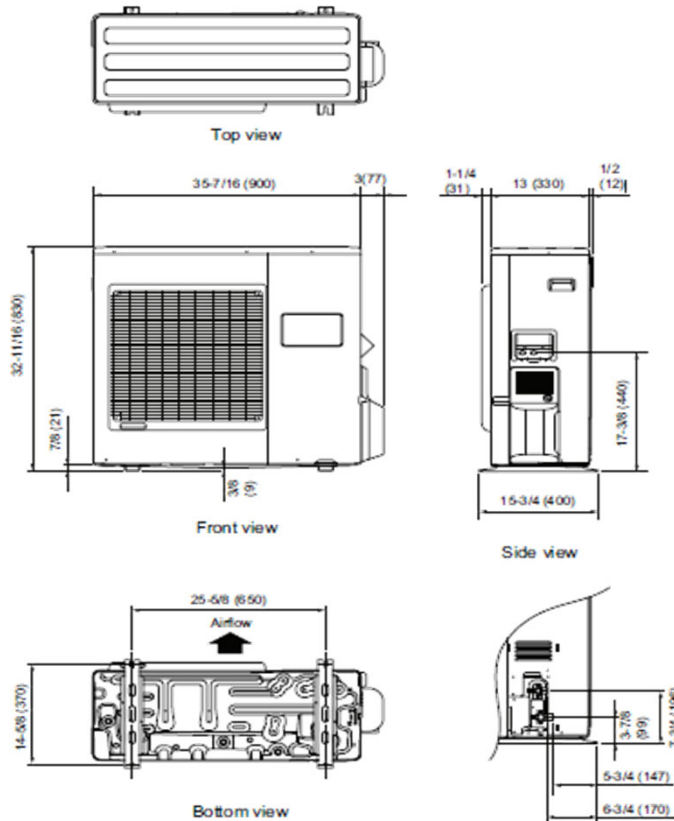
24,000 BTU Multi Position AHU

DIMENSIONS

Unit: in (mm)



Model	A (Supply duct)	W (Unit width)	H (Unit height)
AMUG24LMAS	19-1/2 (495)	21 (533)	42-1/2 (1,080)



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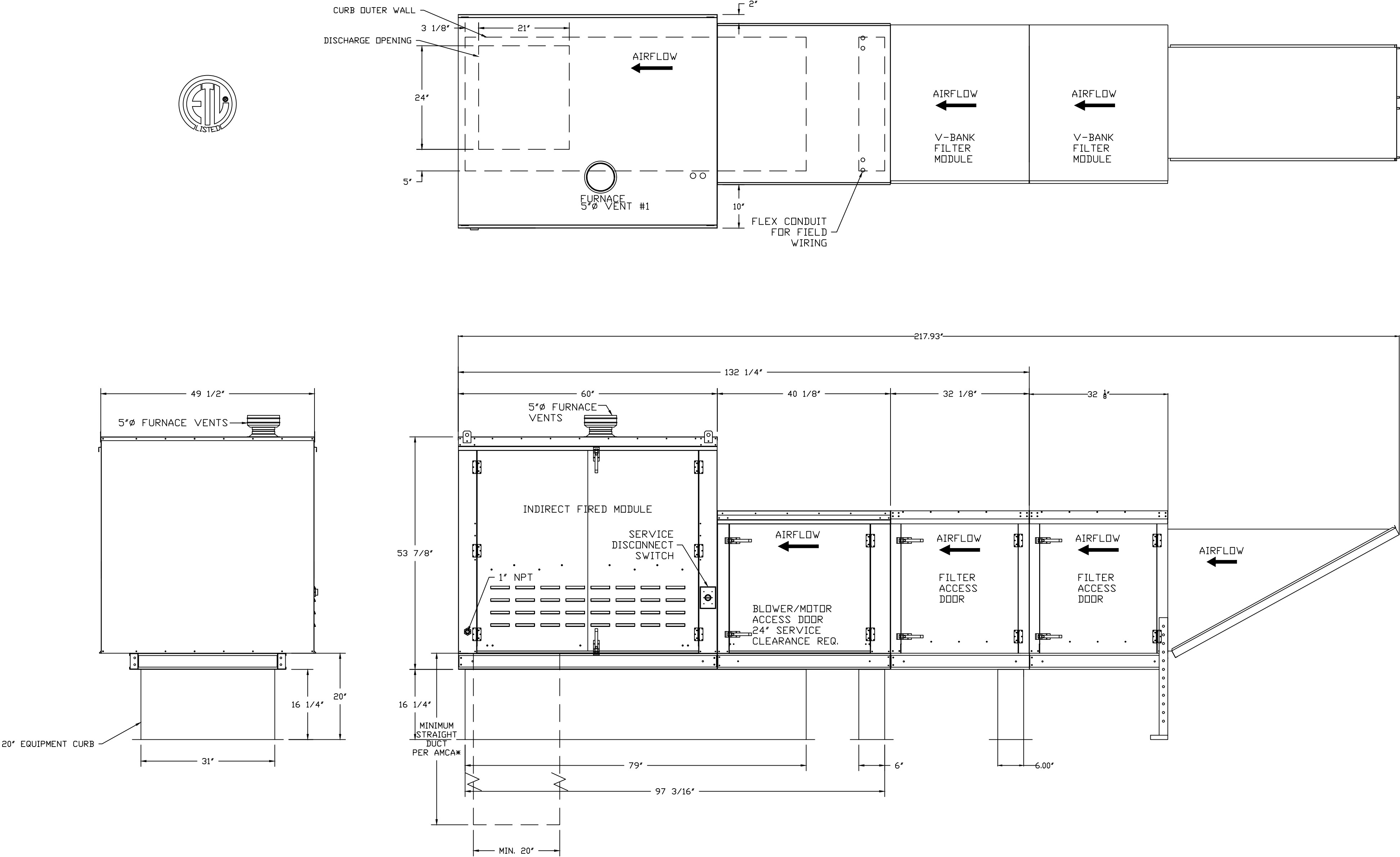
Note: Specifications are based on the following conditions:
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- FAN #1 A2-IBT-300-200 - HEATER
1. INDIRECT BENT TUBE GAS FIRED HEATER WITH 20" DIRECT DRIVE FAN, 1 FURNACE, ELECTRONIC FULL MODULATION, CONSTANT 80% EFFICIENCY, AND 6:1 MAX TURNDOWN FOR NG, (5:1 MAX TURNDOWN FOR LP). STAINLESS STEEL BURNER AND HEAT EXCHANGER.
 2. V-BANK 1A-13 FILTERS W/INTAKE HOOD WITH EZ FILTERS - OUTDOOR
 3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
 4. MOTORIZED BACK DRAFT DAMPER 22.75" X 24" FOR SIZE 2 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, LF120S ACTUATOR INCLUDED
 5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
 6. GAS PRESSURE GAUGE, 0 TO +10 INCHES WC, 2.5" DIAMETER, 1/8" THREAD SIZE, REAR THREAD
 7. FACTORY ASSEMBLED IBT CONDENSATION DRAIN KIT FOR 1 FURNACE UNITS. REQUIRED FOR WINTER DESIGN TEMP OF 0 DEGREES F AND LOWER.
 8. KIT INCLUDES DRAIN ASSEMBLY, MOUNTING SCREWS, ZIP TIES, AND HEAT TAPE FOR SINGLE FURNACE UNIT. FIELD PIPING FROM UNIT BY OTHERS.
 9. FIELD WIRED EXHAUST CONTACTOR BEFORE AIRFLOW SWITCH. RATED 23 AMPS. STARTS UP TO (2) SINGLE PHASE MOTORS. 2HP MAX. 115V, 3HP MAX. 240V. STARTS ONE THREE PHASE MOTOR. SHP MAX. 208V, 7.5HP MAX 230V, 15HP MAX. 460V. OVERLOAD NOT INCLUDED
 10. CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI
 11. SINGLE ELECTRICAL CABINET LED LIGHTS USED ON MODULAR MUA UNITS
 12. CURB DUCT HANGER - 1-1/4" ANGLE IRON FRAME WELDED TO CURB TO SUPPORT STANDARD SIZE DUCTWORK. PRICED PER CURB. ONLY AVAILABLE WHEN CURB ASSEMBLY IS ORDERED.
 13. INSULATED BLOWER HOUSING SIZES 1-2 COMMERCIAL MODULAR
 14. FREEZE/STAT FACTORY SET AT 35°F AND 10 MINUTES.
 15. VAV (VARIABLE-AIR-VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS.
 16. 0-10VDC SPEED CONTROL VARIABLE FREQUENCY DRIVE INCLUDED
 17. MOUNT LOAD REACTOR IN FAN.
 18. VFD FACTORY MOUNTED AND WIRED IN UNIT CONTROL VESTIBULE.
 19. SINGLE POINT ELECTRICAL CONNECTION FOR ALL IBT HEATERS WITH 1 MODULE. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE IS USED ON THE IBT HEATER, THE #28, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
 20. IBT - US Patent 877119 B2

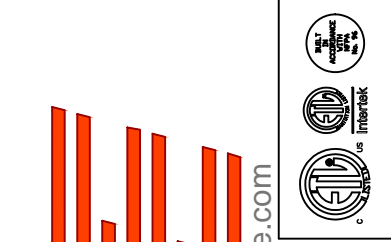
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20" x 20"

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 9°F. TEMP. RISE = 70°F.
BTUS CALCULATED OFF ACTUAL AIR DENSITY
OUTPUT BTUS AT ALTITUDE OF 0.0 ft. = 196225
INPUT BTUS AT ALTITUDE OF 0.0 ft. = 245281
OUTPUT BTUS AT ALTITUDE OF 648 ft. = 191673
INPUT BTUS AT ALTITUDE OF 648 ft. = 239592



REVISIONS	
DESCRIPTION	DATE:
△	
△	
△	
△	



QPS - MA
ROYAL OAK, MI, 48067

DATE: 8/23/2019
DWG.#:
3956342
DRAWN
BY: Josh.hilem
SCALE:
3/4" = 1'-0"
MASTER DRAWING

SHEET NO.
2

Application & Supporting Docs.



Combined CIS & Site Plan Review Application Planning Division

Form will not be processed until it is completely filled out.

1. Applicant

Name: _____
Address: _____

Phone Number: _____
Fax Number: _____
Email address: _____

2. Property Owner

Name: _____
Address: _____

Phone Number: _____
Fax Number: _____
Email address: _____

3. Applicant's Attorney/Contact Person

Name: _____
Address: _____

Phone Number: _____
Fax Number: _____
Email address: _____

4. Project Designer/Developer

Name: _____
Address: _____

Phone Number: _____
Fax Number: _____
Email address: _____

5. Required Attachments

- I. Two (2) paper copies and one (1) digital copy of all project plans including:
 - i. A detailed Existing Conditions Plan including the subject site in its entirety, including all property lines, buildings, structures, curb cuts, sidewalks, drives, ramps and all parking on site and on the street(s) adjacent to the site, and must show the same detail for all adjacent properties within 200 ft. of the subject site's property lines;
 - ii. A detailed and scaled Site Plan depicting accurately and in detail the proposed construction, alteration or repair;
 - iii. A certified Land Survey;
 - iv. Interior floor plans;
 - v. A Landscape Plan;
 - vi. A Photometric Plan;
 - vii. Colored elevation drawings for each building elevation;
- II. Specification sheets for all proposed materials, light fixtures and mechanical equipment;
- III. Samples of all proposed materials;
- IV. Photographs of existing conditions on the site including all structures, parking areas, landscaping and adjacent structures;
- V. Current aerial photographs of the site and surrounding properties;
- VI. Warranty Deed, or Consent of Property Owner if applicant is not the owner;
- VII. Any other data requested by the Planning Board, Planning Department, or other City Departments.

6. Project Information

Address/Location of the property: _____

Name of development: _____

Sidwell #: _____
Current Use: _____

Current zoning: _____

Is the property located in the floodplain? _____

Name of Historic District Site is Located in: _____

Date of HDC Approval: _____
Date of DRB Approval: _____
Area of Site in Acres: _____
Proposed Use: _____
Will proposed project require the division of platted lots? ____

Will proposed project require the combination of platted lots? ____

7. Details of the Proposed Development (attach separate sheet if necessary)

8. Buildings and Structures

Number of Buildings on Site: _____
Height of Buildings & # of Stories: _____

Use of Buildings: _____
Height of Rooftop Mechanical Equipment: _____

9. Floor Use and Area (in Square Feet)

Proposed Commercial Structures:

Total basement floor area: _____
Number of square feet per upper floor: _____
Total floor area: _____
Floor area ratio (total floor area ÷ total land area): _____
Open space: _____
Percent of open space: _____

Office Space: _____
Retail Space: _____
Industrial Space: _____
Assembly Space: _____
Seating Capacity: _____
Maximum Occupancy Load: _____

Proposed Residential Structures:

Total number of units: _____
Number of one bedroom units: _____
Number of two bedroom units: _____
Number of three bedroom units: _____
Open space: _____
Percent of open space: _____

Rental units or condominiums? _____
Size of one bedroom units: _____
Size of two bedroom units: _____
Size of three bedroom units: _____
Seating Capacity: _____
Maximum Occupancy Load: _____

Proposed Additions:

Total basement floor area, if any, of addition: _____
Number of floors to be added: _____
Square footage added per floor: _____
Total building floor area (including addition): _____
Floor area ratio (total floor area ÷ total land area): _____
Open Space: _____
Percent of open space: _____

Use of addition: _____
Height of addition: _____
Office space in addition: _____
Retail space in addition: _____
Industrial space in addition: _____
Assembly space in addition: _____
Maximum building occupancy load (including addition): _____

10. Required and Proposed Setbacks

Required front setback: _____
Required rear setback: _____
Required total side setback: _____
Side setback: _____

Proposed front setback: _____
Proposed rear setback: _____
Proposed total side setback: _____
Second side setback: _____

11. Required and Proposed Parking

Required number of parking spaces: _____
Typical angle of parking spaces: _____
Typical width of maneuvering lanes: _____
Location of parking on site: _____
Location of parking off site: _____
Number of light standards in parking area: _____
Screenwall material: _____

Proposed number of parking spaces: _____
Typical size of parking spaces: _____
Number of spaces <180 sq. ft.: _____
Number of handicap spaces: _____
Shared parking agreement? _____
Height of light standards in parking area: _____
Height of screenwall: _____

12. Landscaping

Location of landscape areas: _____

Proposed landscape material: _____

13. Streetscape

Sidewalk width: _____
Number of benches: _____
Number of planters: _____
Number of existing street trees: _____
Number of proposed street trees: _____
Streetscape Plan submitted? _____

Description of benches or planters: _____

Species of existing trees: _____

Species of proposed trees: _____

14. Loading

Required number of loading spaces: _____
Typical angle of loading spaces: _____
Screenwall material: _____
Location of loading spaces on site: _____

Proposed number of loading spaces: _____
Typical size of loading spaces: _____
Height of screenwall: _____
Typical time loading spaces are used: _____

15. Exterior Waste Receptacles

Required number of waste receptacles: _____
Location of waste receptacles: _____
Screenwall material: _____

Proposed number of waste receptacles: _____
Size of waste receptacles: _____
Height of screenwall: _____

16. Mechanical Equipment

Utilities and Transformers:

Number of ground mounted transformers: _____
Size of transformers (L•W•H): _____
Number of utility easements: _____
Screenwall material: _____

Location of all ground mounted utilities: _____

Height of screenwall: _____

Ground Mounted Mechanical Equipment:

Number of ground mounted units: _____
Size of ground mounted units (L•W•H): _____
Screenwall material: _____

Location of all ground mounted units: _____

Height of screenwall: _____

Rooftop Mechanical Equipment:

Number of rooftop units: _____
Type of rooftop units: _____

Screenwall material: _____
Location of screenwall: _____

Location of all rooftop units: _____
Size of rooftop units (L•W•H): _____
Percentage of rooftop covered by mechanical units: _____
Height of screenwall: _____
Distance from rooftop units to all screenwalls: _____

17. Accessory Buildings

Number of accessory buildings: _____
Location of accessory buildings: _____

Size of accessory buildings: _____
Height of accessory buildings: _____

18. Building Lighting

Number of light standards on building: _____
Size of light fixtures (L•W•H): _____

Type of light standards on building: _____

Height from grade: _____

Maximum wattage per fixture: _____
Light level at each property line: _____

Proposed wattage per fixture: _____

19. Site Lighting

Number of light fixtures: _____
Size of light fixtures (L•W•H): _____
Maximum wattage per fixture: _____
Light level at each property line: _____

Type of light fixtures: _____
Height from grade: _____
Proposed wattage per fixture: _____
Holiday tree lighting receptacles: _____

20. Adjacent Properties

Number of properties within 200 ft.: _____

Property #1

Number of buildings on site: _____
Zoning district: _____
Use type: _____
Square footage of principal building: _____
Square footage of accessory buildings: _____
Number of parking spaces: _____

Property Description: _____

North, south, east or west of property? _____

Property #2

Number of buildings on site: _____
Zoning district: _____
Use type: _____
Square footage of principal building: _____
Square footage of accessory buildings: _____
Number of parking spaces: _____

Property Description: _____

North, south, east or west of property? _____

Property #3

Number of buildings on site: _____
Zoning district: _____
Use type: _____
Square footage of principal building: _____
Square footage of accessory buildings: _____
Number of parking spaces: _____

Property Description: _____

North, south, east or west of property? _____

Property #4

Number of buildings on site: _____
Zoning district: _____
Use type: _____
Square footage of principal building: _____
Square footage of accessory buildings: _____
Number of parking spaces: _____

Property Description: _____

North, south, east or west of property? _____

Property #5

Number of buildings on site: _____
Zoning district: _____
Use type: _____
Square footage of principal building: _____
Square footage of accessory buildings: _____
Number of parking spaces: _____

Property Description: _____

North, south, east or west of property? _____

Property #6


Number of buildings on site: _____
Zoning district: _____
Use type: _____
Square footage of principal building: _____
Square footage of accessory buildings: _____
Number of parking spaces: _____

Property Description: _____

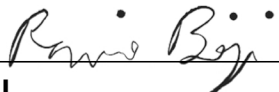
North, south, east or west of property? _____

The undersigned states the above information is true and correct, and understands that it is the responsibility of the applicant to advise the Planning Division and / or Building Division of any additional changes made to an approved site plan. The undersigned further states that they have reviewed the procedures and guidelines for Site Plan Review in Birmingham, and have complied with same. The undersigned will be in attendance at the Planning Board meeting when this application will be discussed.

By providing your e-mail to the City, you agree to receive news notifications from the City. If you do not wish to receive these messages, you may unsubscribe at any time.

Signature of Owner:  Date: 12/30/2021

Print Name: TROTT PROPERTIES 294, LLC

Signature of Applicant:  Date: 12/30/2021

Print Name: RON BOJI

Signature of Architect:  Date: 12/30/2021

Print Name: VICTOR SAROKI

Office Use Only

Application #: _____ Date Received: _____ Fee: _____

Date of Approval: _____ Date of Denial: _____ Accepted by: _____



COMBINED SITE PLAN REVIEW & COMMUNITY IMPACT STUDY APPLICATION CHECKLIST- PLANNING DIVISION

Applicant: _____ Case #: _____ Date: _____

Address: _____ Project: _____

All site plans and elevation drawings prepared for approval shall be prepared in accordance with the following specifications and other applicable requirements of the City of Birmingham. If more than one page is used, each page shall be numbered sequentially. All plans must be legible and of sufficient quality to provide for quality reproduction or recording. Plans must be no larger than 24" x 36", and must be folded and stapled together. The address of the site must be clearly noted on all plans and supporting documentation.

Site Plan

A full Site Plan detailing the proposed changes for which approval is requested shall be drawn at a scale no smaller than 1" = 100' (unless the drawing will not fit on one 24" X 36" sheet) and shall include:

- ___ 1. Name and address of applicant and proof of ownership;
- ___ 2. Name of Development (if applicable);
- ___ 3. Address of site and legal description of the real estate;
- ___ 4. Name and address of the land surveyor;
- ___ 5. Legend and notes, including a graphic scale, north point, and date;
- ___ 6. A separate location map;
- ___ 7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land;
- ___ 8. Aerial photographs of the subject site and surrounding properties;
- ___ 9. A detailed and scaled Site Plan depicting accurately and in detail the proposed construction, alteration or repair;
- ___ 10. A detailed Existing Conditions Plan including the subject site in its entirety, including all property lines, buildings, structures, curb cuts, sidewalks, drives, ramps and all parking on site and on the street(s) adjacent to the site, and must show the same detail for all adjacent properties within 200 ft. of the subject site's property lines;
- ___ 11. Interior floor plans;
- ___ 12. A chart indicating the dates of any previous approvals by the Planning Board, Board of Zoning Appeals, Design Review Board, or the Historic District Commission ("HDC");
- ___ 13. Existing and proposed layout of streets, open space and other basic elements of the plan;
- ___ 14. Existing and proposed utilities and easements and their purpose;

- ___ 15. Location of natural streams, regulated drains, 100-year flood plains, floodway, water courses, marshes, wooded areas, isolated preserve-able trees, wetlands, historic features, existing structures, dry wells, utility lines, fire hydrants and any other significant feature(s) that may influence the design of the development;
- ___ 16. General description, location, and types of structures on site;
- ___ 17. Location of sidewalks, curb cuts, and parking lots on subject site and all sites within 200 ft. of the property line;
- ___ 18. Details of existing or proposed lighting, signage and other pertinent development features;
- ___ 19. Elevation drawings showing proposed design;
- ___ 20. Screening to be utilized in concealing any exposed mechanical or electrical equipment and all trash receptacle areas;
- ___ 21. Location of all exterior lighting fixtures;
- ___ 22. A Photometric Plan depicting proposed illuminance levels at all property lines;
- ___ 23. A Landscape Plan showing all existing and proposed planting and screening materials, including the number, size, and type of plantings proposed and the method of irrigation; and
- ___ 24. Any other information requested in writing by the Planning Division, the Planning Board, or the Building Official deemed important to the development.

Elevation Drawings

Complete elevation drawings detailing the proposed changes for which approval is requested shall be drawn at a scale no smaller than 1" = 100' (unless the drawing will not fit on one 24" X 36" sheet) and shall include:

- ___ 25. Color elevation drawings showing the proposed design for each façade of the building;
- ___ 26. List of all materials to be used for the building, marked on the elevation drawings;
- ___ 27. Elevation drawings of all screenwalls to be utilized in concealing any exposed mechanical or electrical equipment, trash receptacle areas and parking areas;
- ___ 28. Details of existing or proposed lighting, signage and other pertinent development features;
- ___ 29. A list of any requested design changes;
- ___ 30. Itemized list and specification sheets of all materials, light fixtures and mechanical equipment to be used, including exact size specifications, color, style, and the name of the manufacturer;
- ___ 31. Location of all exterior lighting fixtures, exact size specifications, color, style and the name of the manufacturer of all fixtures, and a photometric analysis of all exterior lighting fixtures showing light levels to all property lines; and
- ___ 32. Any other information requested in writing by the Planning Division, the Planning Board, or the Building Official deemed important to the development.



COMMUNITY IMPACT STUDY CHECKLIST

PLANNING DIVISION

Applicant: _____ Case #: _____ Date: _____

Address: _____ Project: _____

All Community Impact Studies prepared for approval must contain the following information:

General Information

- _____ 1. Name and address of applicant and proof of ownership;
- _____ 2. Name of Development (if applicable);
- _____ 3. Address of site and legal description of the real estate;
- _____ 4. Name and address of the land surveyor;
- _____ 5. Legend and notes, including a graphic scale, north point, and date;
- _____ 6. A separate location map;
- _____ 7. A map showing the boundary lines of adjacent land and the existing zoning of the area proposed to be developed as well as the adjacent land;
- _____ 8. Details of all proposed site plan changes;

Planning & Zoning Issues

- _____ 9. Recommended land use of the subject property as designated on the Future Land Use Map of the City's Master Plan;
- _____ 10. Goals and objectives of the city's Master Plans that demonstrate the City's support of the proposed development;
- _____ 11. Whether or not the project site is located within an area of the City for which an Urban Design Plan has been adopted by the Planning Board in which special design criteria or other supplemental development requirements apply;
- _____ 12. The current zoning classification of the subject property;
- _____ 13. The zoning classification required for the proposed development;
- _____ 14. The existing land uses adjacent to the proposed project;
- _____ 15. Complete the attached "Zoning Requirements Analysis" chart;

Land Development Issues

- _____ 16. A Survey and Site Drainage Plan;
- _____ 17. Identify any sensitive soils on site that will require stabilization or alteration in order to support the proposed development;
- _____ 18. Whether or not the proposed development will occur on a steep slope, and if so, the measures that will be taken to overcome potential erosion, slope stability and runoff;

- _____ 19. The volume of excavated soils to be removed from the site and /or delivered to the site, and a map of the proposed haul routes;
- _____ 20. Identify the potential hazards and nuisances that may be created by the proposed development and the suggested methods of mitigating such hazards;

Private Utilities

- _____ 21. Indicate the source of all required private utilities to be provided;
- _____ 22. Provide verification that all required utility easements have been secured for necessary private utilities;

Noise Levels

- _____ 23. Provide a reading of existing ambient noise and estimated future noise levels on the site;
- _____ 24. Indicate whether the project will be exposed to or cause noise levels which exceed those levels prescribed in Chapter 50, Division 4, Section 50-71 through 50-77 of the Birmingham City Code, as amended;
- _____ 25. Indicate whether the site is appropriate for the proposed activities and facilities given the existing ambient noise and the estimated future noise levels of the site;

Air Quality

- _____ 26. Indicate whether the project is located in the vicinity of a monitoring station where air quality violations have been registered and, if so, provide information as to whether the project will increase air quality problems in the area;
- _____ 27. Indicate if the nature of the project or its potential users would be particularly sensitive to existing air pollution levels and, if so, indicate how the project has been designed to mitigate possible adverse effects;
- _____ 28. Indicate whether the proposal will establish a trend which, if continued, may lead to violation of air quality standards in the future;
- _____ 29. Indicate whether the proposed project will have parking facilities for more than 75 cars and indicate percentage of required parking that is proposed;

Environmental Design and Historic Values

- _____ 30. Indicate whether there will be demonstrable destruction or physical alteration of the natural or human-made environment on site or in the right-of-way (i.e. clearance of trees, substantial regrading etc.);
- _____ 31. Indicate whether there will be an intrusion of elements out of character or scale with the existing physical environment (i.e. significant changes in size, scale of building, floor levels, entrance patterns, height, materials, color or style from that of surrounding developments);
- _____ 32. Indicate all elements of the project that are eligible for LEED points if the building were to be LEED certified (i.e. extensive use of natural daylight, use of low VOC paint, use of renewable/recycled resources, energy efficient mechanical systems, use of wind and solar power, geothermal heating etc.);
- _____ 33. Indicate whether the proposed structure will block or degrade views, change the skyline or create a new focal point;
- _____ 34. Indicate whether there will be objectionable visual pollution introduced directly or indirectly due to loading docks, trash receptacles or parking, and indicate mitigation measures for same;
- _____ 35. Indicate whether there will be an interference with or impairment of ambient conditions necessary for the enjoyment of the physical environment (i.e. vibration, dust, odor, heat, glare etc.);
- _____ 36. Indicate whether the project area and environs contain any properties listed on the National Register of Historic Places or the City's inventory of historic structures;
- _____ 37. Provide any information on the project area that the State Historic Preservation Office (SHPO) may have;

- _____ 38. Indicate whether there will be other properties within the boundaries or in the vicinity of the project that appear to be historic and thus require consultation with the SHPO as to eligibility for the National Register;
- _____ 39. Indicate whether the Department of the Interior has been requested to make a determination of eligibility on properties the SHPO or HDC deems eligible and affected by the project;
- _____ 40. Provide proof that the HDC has been given an opportunity to comment on properties that are listed on or have been found eligible for the National Register and which would be affected by the project;

Refuse

- _____ 41. Indicate whether the existing or planned solid waste disposal system will adequately service the proposed development including space for separation of recyclable materials;
- _____ 42. Indicate whether the design capacity of the existing or planned solid waste disposal system will be exceeded as a result of the project;

Sanitary Sewer

- _____ 43. Indicate whether existing or planned waste water systems will be able to adequately service the proposed development;
- _____ 44. Indicate whether the design capacity of these facilities will be exceeded as a result of the project;
- _____ 45. Indicate the elements of the project that have been incorporated to reduce the amount of water entering the sewer system (such as low flush toilets, EnergyStar appliances, restricted flow faucets, greywater recycling etc.);

Storm Sewer

- _____ 46. Indicate whether existing or planned storm water disposal and treatment systems will adequately serve the proposed development;
- _____ 47. Indicate whether the design capacity of these facilities will be exceeded as a result of the project;
- _____ 48. Indicate the elements of the project that have been incorporated to reduce the amount of storm water entering the sewer system (such as the use of pervious concrete, rain gardens, greywater recycling, green pavers etc.);

Water Service

- _____ 49. Indicate whether either the municipal water utility or on-site water supply system is adequate to serve the proposed project;
- _____ 50. Indicate whether the water quality is safe from both a chemical and bacteriological standpoint;
- _____ 51. Indicate whether the intended location of the service will be compatible with the location and elevation of the main;

Public Safety

- _____ 52. Whether or not the project location provides adequate access to police, fire and emergency medical services;
- _____ 53. Whether or not the proposed project design provides easy access for emergency vehicles and individuals (ie. are there obstacles to access, such as one-way roads, narrow bridges etc.);
- _____ 54. Whether or not there are plans for a security system which can be expanded, and whether approval for same has been granted by the police department;
- _____ 55. Detailed description of all fire access to the building, site, fire hydrants and water connections;
- _____ 56. Whether or not there are plans for adherence to all city and N.F.P.A. fire codes;

- _____ 57. Proof that one elevator has been designed to accommodate a medical cart;
- _____ 58. Detailed specifications on all fire lanes/parking lot surfaces/alleys/streets to demonstrate the ability to accommodate the weight of emergency / fire vehicles;
- _____ 59. Detailed description of all fire suppression systems;

Transportation issues

- _____ 60. Provide completed FORM A – Transportation Study Questionnaire (Abbreviated);
- _____ 61. Provide completed FORM B – Transportation Study Questionnaire if required by the city’s transportation consultant;
- _____ 62. Indicate whether transportation facilities and services will be adequate to meet the needs of all users (i.e. access to public transportation, bicycle accommodations, pedestrian connections, disabled, elderly etc.);
- _____ 63. Indicate how the project will improve the mobility of all groups by providing transportation choices;
- _____ 64. Indicate how the users of the building will be encouraged to use public transit and non-motorized forms of transportation;
- _____ 65. Indicate the elements that have been incorporated into the site and surrounding right-of-way to encourage mode shift away from private vehicle trips;
- _____ 66. Indicate the elements of the project that have been provided to improve the comfort and safety of cyclists (such as secured or covered bicycle parking, lockers, bike lanes/paths, bicycle share program etc.);
- _____ 67. Indicate the elements of the project that have been provided to improve the comfort and safety of pedestrians (such as wheelchair ramps, crosswalk markings, pedestrian activated signal lights, bulb outs, benches, landscaping, lighting etc.);
- _____ 68. Indicate the elements of the project that have been provided to encourage the use of sustainable transportation modes (such as receptacles for electric vehicle charging, parking for scooters/Smart cars etc.);

Natural Features

- _____ 69. Indicate whether there are any visual indicators of pond and / or stream water quality problems on or near the site;
- _____ 70. Indicate whether the project will involve any increase in impervious surface area and, if so, indicate the runoff control measures that will be undertaken;
- _____ 71. Indicate whether the project will affect surface water flows on water levels of ponds or other water bodies;
- _____ 72. Indicate whether the project may affect or be affected by a wetland, flood plain, or floodway;
- _____ 73. Indicate whether the project location or construction will adversely impact unique natural features on or near the site;
- _____ 74. Indicate whether the project will either destroy or isolate a unique natural feature from public access;
- _____ 75. Indicate whether any unique natural feature will pose safety hazards for the proposed development;
- _____ 76. Indicate whether the project will damage or destroy existing wildlife habitats; and

Other Information

- _____ 77. Any other information as may reasonably be required by the City to assure an adequate analysis of all existing and proposed site features and conditions.

Professional Qualifications

The preparer(s) of the CIS must indicate their professional qualifications, which must include registration in the state of Michigan in their profession where licensing is a state requirement for the practice of the profession (i.e. engineer, surveyor, architect etc.). Where the state does not require licensing (ie. planner, urban designer, economist etc.), the

preparer must demonstrate acceptable credentials including, but not limited to, membership in professional societies, university degrees, documentation illustrating professional experience in preparing CIS related materials for similar projects.



ZONING REQUIREMENTS ANALYSIS

Development Standard	Required	Proposed	Variance Required
Zoning Classification			
Front Setback			
Rear Setback			
Side Setback			
FAR - Percentage			
FAR – Square Footage			
Open Space – Percentage			
Open Space – Square Footage			
Number of Residential Units			
Minimum Floor Area			
Maximum Height			
Parking			
Loading			
Screening			



Notice Signs - Rental Application Community Development

1. Applicant

Name: BOJI GROUP
Address: 255 S. OLD WOODWARD AVE, SUITE 310
BIRMINGHAM, MI 48009
Phone Number: 248-646-3151
Fax Number: N/A
Email address: RBOJI@BOJIGROUP.COM

Property Owner

Name: TROTT PROPERTIES 294, LLC
Address: 266 ELM STREET, SUITE 100
BIRMINGHAM, MI 48009
Phone Number: 248-341-5094
Fax Number: N/A
Email address: DTROTT@TROTTMANAGEMENT.COM

2. Project Information

Address/Location of Property: 294 E BROWN STREET
Name of Development: BROWN STREET MIXED-USE
Area in Acres: 0.758 ACRES

Name of Historic District site is in, if any: N/A
Current Use: OFFICE
Current Zoning: D-3

3. Date of Board Review

Board of Building Trades Appeals: N/A
City Commission: N/A
Historic District Commission: N/A
Planning Board: TBD

Board of Zoning Appeals: N/A
Design Review Board: TBD
Housing Board of Appeals: N/A

The undersigned states the above information is true and correct, and understands that it is the responsibility of the applicant to post the Notice Sign(s) at least 15 days prior to the date on which the project will be reviewed by the appropriate board or commission, and to ensure that the Notice Sign(s) remains posted during the entire 15 day mandatory posting period. The undersigned further agrees to pay a rental fee and security deposit for the Notice Sign(s), and to remove all such signs on the day immediately following the date of the hearing at which the project was reviewed. The security deposit will be refunded when the Notice Sign(s) are returned undamaged to the Community Development Department. Failure to return the Notice Sign(s) and/or damage to the Notice Sign(s) will result in forfeiture of the security deposit.

Signature of Applicant: Ravi Boji Date: 12/30/2021

Office Use Only

Application #: _____ Date Received: _____ Fee: _____
Date of Approval: _____ Date of Denial: _____ Reviewed by: _____



Clerk's Office
City of Birmingham, MI

FEB 22 2022

RECEIVED

February 22, 2022

To Whom It May Concern,

I am writing this letter in regards to the new mixed-use development that will be complimenting the Restoration Hardware project to the west. For the record, I am in complete support of this project and know that this will help continue the terrific development momentum that exists in Birmingham.

I first got to know Ron Boji through my job as CEO of Flagstar Bank where he has become one of our most trusted borrowers. We have also become great friends, so I have personal knowledge of his high character.

His resume as a developer itself would be enough to give support to a project like this, but as a person, I could not have more faith in his ability to bring this project to fruition. The vision for this project creates an eagerness and level of optimism for a building that will continue to transform Birmingham in the positive direction that most people would like to see.

I am also a resident of Birmingham (383 Greenwood St.) and, as a resident, my hope, along with that of many others, is to see this development come to life and for the City of Birmingham to welcome the project with open arms.

I'd be happy to engage directly with you if that would be helpful.

Regards,

A handwritten signature in black ink, appearing to read "Alessandro P. DiNello".

Alessandro P. DiNello

Robert and Nancy Schostak
785 Purdy Street
Birmingham, MI 48009

Clerk's Office
City of Birmingham, MI

FEB 22 2022

February 21, 2022

RECEIVED

City of Birmingham Planning Commission

Dear Commissioners:

As a resident of this community, I want to compliment you on the continuous infrastructure improvements being made to our downtown. The improvements are clearly having a positive impact not only in safety for the residents and visitors, but also in enhancing downtown as an asset to the region.

Further the addition of RH Home Store at the southern end of the shopping district will act as a major draw and anchor to the downtown enhancing the offerings of the entire downtown shopping District. It is an important and meaningful addition to our community and the region.

Further, we strongly support the flexibility you offer in the zoning allowing for multi-story buildings and parking as this will continue to make downtown viable and desirable for decades to come. The project currently under consideration adjacent to RH is extremely exciting.

We personally live around the block from the RH site and the adjacent development and we will obviously be impacted during construction, but to a very positive end result.

The opportunity to bring this high-quality retail and lifestyle residences to that portion of the community enhances real estate values and brings great balance to our community.

I encourage its approval as we need this type of investment and the quality of development by the very qualified developers that are involved in this project.

As a resident who is involved in real estate projects throughout the region and around the country and one that understands the importance of a viable downtown, we very much are looking forward to this project and its completion.

Thank you for allowing me to comment.

Best regards,



Bob Schostak



Clerk's Office
City of Birmingham, MI

FEB 22 2022

The Elia Group
Zaid D. Elia
124 S. Old Woodward
Birmingham, MI 48009

RECEIVED

To Whom It May Concern:

I'm sending this letter pertaining to the proposed mixed-use development on Brown St. Being a business owner a block away from this development, I cannot vocalize enough the amount of support I have for this development. This development, along with the RH development that this project will be right next to, will strengthen the City of Birmingham to an even higher level of business, living, and experience for all those who live in town or are visiting. Knowing the partners in this project very well; Ron Boji, Victor Saroki, JR Rakolta, and Adm Lutz this is a team that will deliver above all expectations. Each one is a master in their own industry and knowing they will be tackling this project together brings me an amount of joy for the city that can't be measured. This project will bring years and years of success, a positive impact downtown, and will be a crucial piece of Birmingham's ongoing efforts in producing the best experiences for workers, residents, and visitors in an ever-changing world.

Sincerely,

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke, positioned above the name "Zaid D. Elia".

Zaid D. Elia

MERRILLWOOD COLLECTION
251 E. MERRILL STREET, SUITE 212
BIRMINGHAM, MICHIGAN 48009

(248) 646-7500
FAX (248) 647-3038

February 21, 2022

To whom it may concern,

I am writing this letter with full support and excitement for the mixed-use development. The development will create an everlasting positive impact in the City of Birmingham. The development will not only create even more attraction to our city, but it will also compliment the adjacent development of Restoration Hardware.

Over the years, I have developed a great relationship with Ron Boji and Victor Saroki, and knowing that these two are spearheading this development only creates more confidence and surety of a successful project. Seeing their passion and devotion in continuing to shape and redevelop, while implementing the city's rich history, gains my utmost respect and full backing.

I hope the decision to approve this development passes so Ron and Victor, and their partners can get shovels in the ground for our great city.

Sincerely,



Jeffrey A. Ishbia
Manager

Clerk's Office
City of Birmingham, MI

FEB 22 2022

RECEIVED

FEB 22 2022

RECEIVED

**BRODER
& SACHSE**
REAL ESTATE

February 22, 2022

VIA EMAIL ONLY

Birmingham Building and Planning
City of Birmingham
151 Martin Street
Birmingham MI, 48009

RE: Birmingham Square

To Whom it May Concern:

We represent the owner of 260 East Brown St. and would like to write you in support of the development of the neighboring property led by the Boji Group. We firmly believe that this development will be an excellent addition to the landscape of Downtown Birmingham.

We are thrilled that there will be a combination of quality housing and retail space at the site. We believe it will be an excellent addition to the neighborhood, as well as an enhancement to the economic development of the City, including increased tax base, jobs creation, and population growth.

We would be pleased if you could read this letter of support into the record at tonight's meeting.

Sincerely,
Broder & Sachse Real Estate,
Agent for 260 E. Brown Street LLC



Richard B. Broder
CEO

3663 Woodward Avenue | Suite 550 | Detroit, MI 48201
313-765-1000 | brodersachse.com



AGENDA
SPECIAL MEETING OF THE BIRMINGHAM PLANNING BOARD
WEDNESDAY MARCH 31, 2022
151 MARTIN ST., CITY COMMISSION ROOM 205, BIRMINGHAM MI *
*******7:30 pm*******

Michigan and Oakland County are at a substantial rate of COVID-19 community transmission. Per Occupational Safety and Health Administration (OSHA) mask guidance for areas of high or substantial community transmission levels, and to continue to protect essential government operations and functions, the city requires masks in City Hall for all employees, and for board and commission members. Masks are recommended for members of the public who attend city meetings. The city continues to provide KN-95 respirators for all in-person meeting attendees.

- A. Roll Call
- B. Review and Approval of the Minutes
- C. Chairpersons' Comments
- D. Review of the Agenda
- E. Unfinished Business
- F. Rezoning Applications
- G. Community Impact Studies
 - 1. **770 S. Adams – Request for a new 5-6 story mixed use building**
- H. Special Land Use Permits
 - 1. **220 Merrill – Request for new outdoor dining platform in Merrill St. right-of-way**
- I. Site Plan & Design Reviews
 - 1. **770 S. Adams – Request for a new 5-6 story mixed use building**
 - 2. **220 Merrill – Request for new outdoor dining platform in Merrill St. right-of-way**
- J. Study Session
- K. Miscellaneous Business and Communications:
 - 1. Pre-Application Discussions
 - 2. Communications
 - 3. Administrative Approval Correspondence
 - 4. Draft Agenda – **April 13, 2022**
 - 5. Action List - 2022
 - 6. Other Business
- L. Planning Division Action Items
 - 1. Staff Report on Previous Requests
 - 2. Additional Items from Tonight's Meeting
- M. Adjournment

* Please note that board meetings will be conducted in person once again. Members of the public can attend in person at Birmingham City Hall OR may attend virtually at:

Link to Access Virtual Meeting: <https://zoom.us/j/111656967>
Telephone Meeting Access: 877-853-5247 US Toll-Free
Meeting ID Code: 111656967

NOTICE: Due to Building Security, public entrance during non-business hours is through the Police Department—Pierce St. Entrance only. Individuals with disabilities requiring assistance to enter the building should request aid via the intercom system at the parking lot entrance gate on Henrietta St.

Persons with disabilities that may require assistance for effective participation in this public meeting should contact the City Clerk's Office at the number (248) 530-1880, or (248) 644-5115 (for the hearing impaired) at least one day before the meeting to request help in mobility, visual, hearing, or other assistance.

Las personas con incapacidad que requieren algún tipo de ayuda para la participación en esta sesión pública deben ponerse en contacto con la oficina del escribano de la ciudad en el número (248) 530-1800 o al (248) 644-5115 (para las personas con incapacidad auditiva) por lo menos un día antes de la reunión para solicitar ayuda a la movilidad, visual, auditiva, o de otras asistencias. (Title VI of the Civil Rights Act of 1964).

Planning Board Action List - 2022

Topic	General Goals	City Commission Directive?	Quarter	Status	
				In Progress	Complete
2040 Master Plan	Adopt a new comprehensive master plan.	<input checked="" type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Outdoor Dining	Study the Outdoor Dining Ordinance re: enclosures, expansions, etc.	<input checked="" type="checkbox"/>	1 st (January-March)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Window Standards (Glazing)	Update window standards to help support building renovation and the Energy Code requirements.	<input type="checkbox"/>	1 st (January-March)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Barrier-Free Ramps	Reduce unintentional restrictions on handicap ramps in the front setbacks.	<input type="checkbox"/>	2 nd (April-June)	<input type="checkbox"/>	<input type="checkbox"/>
Side Yard A/C	Update the ordinance to address issues with side yard a/c units.	<input type="checkbox"/>	2 nd (April-June)	<input type="checkbox"/>	<input type="checkbox"/>
Front Setback Rules	Consider revisions to the setback ordinances in R1-R3 to address 200 ft. calculations rule.	<input type="checkbox"/>	3 rd (July-September)	<input type="checkbox"/>	<input type="checkbox"/>
Lighting Standards	Remove conflicting regulations regarding photometric plans.	<input type="checkbox"/>	3 rd (July-September)	<input type="checkbox"/>	<input type="checkbox"/>
Impervious Surface Definition	Clarify definition to promote the infiltration of storm water.	<input type="checkbox"/>	4 th (October-December)	<input type="checkbox"/>	<input type="checkbox"/>
Health Club/Studio Use	Consider allowing health/fitness type activities in more areas of the City.	<input type="checkbox"/>	4 th (October-December)	<input type="checkbox"/>	<input type="checkbox"/>

Next Up...

Topic	General Goals	City Commission Directive?	Quarter	Status	
				In Progress	Complete
Dumpster Enclosures	Expand the materials permitted/not permitted in dumpster enclosures.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Balcony/Terrace Enclosures	Clarify and add regulations for the enclosure of outdoor living space.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Lot Combination Process	Review the process for lot combinations to add clarity to approval standards.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Mixed Use Requirements	Consider changing the requirements for the stacking of mixed uses.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Review Processes for Public Projects	Clarify review process for projects on public property.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
SLUP Application Process	Clarify the SLUP process in terms of the order of board/commission review.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Retail Definition	Revisit the retail definition to address any concerns about first floor uses.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Medical Marijuana & CBD	Update the Zoning Ordinance to help regulate Medical Marijuana and CBD through ordinance language.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Sustainability Initiatives	Prepare a sustainability agenda to increase Birmingham's resilience.	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
Lighting Standards	Review lighting standards for residential districts to reduce light pollution and nuisance.	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Landscaping Standards	Consider amendments to permit synthetic planting materials.	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Social Districts	Study the state regulations and the City to help draw district boundaries.	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
Food Trucks	Study the application of food trucks in the City in terms of locations, restrictions, etc.	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>