MULTI-MODAL TRANSPORTATION BOARD THURSDAY, DECEMBER 1, 2016 6:00 PM CITY COMMISSION ROOM 151 MARTIN STREET, BIRMINGHAM

- 1. Roll Call
- 2. Introductions
- 3. Review of the Agenda
- 4. Approval of Minutes, Meeting of November 21, 2016
- 5. Elm St. South of Maple Rd. Parking Analysis
- 6. Poppleton Ave. Reconstruction Knox Ave. to Maple Rd.
- 7. Old Woodward Ave. Reconstruction Willits St. to Brown St.
- 8. Meeting Open to the Public for items not on the Agenda
- 9. Miscellaneous Communications
- 10. Next Meeting January 5, 2017
- 11. Adjournment

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CITY OF BIRMINGHAM MULTI-MODAL TRANSPORTATION BOARD THURSDAY, NOVEMBER 21, 2016 City Commission Room 151 Martin Street, Birmingham, Michigan

Minutes of the regular meeting of the City of Birmingham Multi-Modal Transportation Board held Thursday, November 21, 2016.

Chairperson Vionna Adams convened the meeting at 6:02 p.m.

1. ROLL CALL

- **Present:** Chairperson Vionna Adams; Board Members Lara Edwards, Amy Folberg, Vice-Chairman Andy Lawson, Daniel Rontal, Johanna Slanga, Michael Surnow
- Absent: None
- Administration: Lauren Chapman, Asst. City Planner Jana Ecker, Planning Director Austin Fletcher, Asst. City Engineer Scott Grewe, Operations Commander Paul O'Meara, City Engineer Carole Salutes, Recording Secretary
- Also Present: Mike Labadie from Fleis & Vandenbrink ("F&V"), Transportation Engineering Consultants John Heiney, Birmingham Shopping District

2. INTRODUCTIONS

New members Daniel Rontal and Johanna Slanga introduced themselves and summarized their backgrounds.

3. **REVIEW AGENDA** (no change)

4. APPROVAL OF MINUTES, MEETING OF NOVEMBER 3, 2016

Motion by Mr. Surnow

Seconded by Mr. Rontal to approve the Minutes of November 3, 2016 as presented.

Multi-Modal Transportation Board Proceedings November 21, 2016 Page 2

Motion carried, 6-0.

VOICE VOTE Yeas: Surnow, Rontal, Adams, Edwards, Folberg, Lawson Nays: None Abstain: Slanga Absent: None

5. OLD WOODWARD AVE. RECONSTRUCTION - WILLITS ST. TO BROWN ST.

Mr. O'Meara noted that as discussed at the last meeting, the City has hired a planning consultant, MKSK, to work with the City in devising the conceptual plan for the Old Woodward Ave. project. The effort has been fast tracked in order to allow for final design of the project to begin as soon as possible, with an anticipated spring 2017 construction start. The timeline includes a review by the Multi-Modal Transportation Board, followed immediately by a review by the City Commission.

The MMTB is asked to review and discuss the street design, including widths of street, sidewalks, and reverse angle versus head-in angle parking areas. The Board is also asked to consider the use of City standard materials, as compared to enhanced materials, particularly with respect to how the materials may alter the pedestrian experience.

Mr. O'Meara reviewed the infrastructure problems in that particular section, which is why the project has been undertaken. Ms. Ecker explained there are two different Master Plans that govern this area; the Downtown Birmingham 2016 Plan and the Multi-Modal Transportation Plan. She went on to outline many of their recommendations for improvements.

Mr. Brad Strader from MKSK was present along with Mr. Joe Marson, Traffic Engineer from Parsons Transportation, and Mr. Brian Kinzelman, Landscape Architect with MKSK. Mr. Strader took the board through the same PowerPoint that will be presented to the City Commission. Their goals are to make Maple Rd. and Old Woodward Ave. more walkable and consistent with the Multi-Modal Plan, but also to consider trucks, automobiles, bikes, and all of the different users. The project scope is in three phases. Tonight's concentration is on the segment of Old Woodward Ave. between Willits St. and Brown St.

In looking at road design, they considered safety for all users. Usable passable sidewalks along with improved lighting on Old Woodward Ave. will make it a vibrant, walkable space. A proposed road width of 66 ft. curb to curb strikes a

Multi-Modal Transportation Board Proceedings November 21, 2016 Page 3

balance between what is best for cars and parking maneuvering space and what is best for pedestrians and outdoor dining. With road travel lanes at 13 ft. and a left turn lane of 9 ft., the pedestrian right-of-way would be a minimum of 10 ft. wide. Back-in angle parking is safer for bikers which is consistent with the Multi-Modal Plan that calls for sharrows on Old Woodward Ave.

Considering Maple Rd., a little bit more room can be added for sidewalks but it makes the travel lane and the conflicts between parking vehicles and the through traffic tighter. The parallel parking allows a tighter travel lane for pulling out. Presently the sidewalks are 11 ft. in width but the passable area is more like 5 1/2 ft. in some spots.

Mr. Kinzelman noted curb extensions are introduced at the intersections to minimize the passage distance across the street. However, the large trucks and vehicles need to be accommodated as they make a turn. Therefore the curbs are dropped flush to the street so large vehicles will not tear them up. The proposed cross-walk length of Old Woodward Ave. is two 13 ft. travel lanes and a 9 ft. center turn lane, or 35 ft. Currently it is 70 ft.

Mr. Strader advised that about half of the crashes recorded for this segment of Old Woodward Ave. are related to a parking maneuver. Back-in angle parking is much better for bikes and also allows safer loading of goods into the trunk which is adjacent to the sidewalk. It loses about one space per block over what presently exists.

Ms. Ecker said that the business community has submitted a letter saying they are not in favor of enhanced materials because it would cost more and they don't like back-in parking because people may be reluctant to park in front of the stores.

Ms. Slanga commented she does not love the idea of a non-uniformity of parking along Old Woodward Ave. because it seems confusing. When asked, Mr. O'Meara explained if the City wanted to change N. Old Woodward Ave. now to back-in angle parking there would be pavement markings to grind out and parking meters to move.

Mr. Strader advised that MDOT has recently taken the position that if angled parking is to be installed on a State road, it has to be reverse angle. The dimensions that are shown are recommended as a common standard for back-in parking.

Mr. Kinzelman reviewed the materials. He noted that Old Woodward Ave. is a very special place and a better quality of material such as granite curbs and brick pavers would be appropriate. Higher efficiency LED light sources are proposed for the signal mast arms so the pedestrian environment is illuminated at the

intersections. A light fixture is suggested for Old Woodward Ave. that is different from the Birmingham Green lantern fixture. It directs the light down onto the sidewalk rather than throwing it out into the atmosphere.

Concern was expressed by Ms. Slanga that the middle turn lane along Old Woodward Ave. will become a passing lane. Ms. Edwards thought that traffic won't stop when someone is backing in if there is a middle turn lane. Mr. O'Meara noted the center lane could also be used as a truck unloading area. Mr. Kinzelman explained it would also be defacto storage space for police vehicles if needed. A different material could be used so that driving on the middle lane feels different, almost like a rumble strip.

Ms. Slanga did not know if this is a big enough change from what they are trying to get out of the downtown or whether it creates enough cafe space. Many proprietors want to put two rows of cafe outside of their business. She did not think this proposal that will last at least seventy years into the future is progressive enough for what they want to do in the downtown. Mr. Strader advised that by getting rid of angled parking and adding parallel, it would allow much wider sidewalks.

Further discussion concerned getting rid of the middle turn lane. However, when a car sweeps around as it is getting out of a parking space it will partially go into the center lane. So that lane cannot be completely eliminated or it will put cars into oncoming traffic when they leave a parking space.

Due to the need to finish the meeting, members of the Board felt that this matter needed further study and discussion. The problem of timing in order to have construction in 2017 puts a limit on these considerations. Ms. Ecker said that for this meeting they are looking to see if the board would agree on the 66 ft. cross section and front-in or reverse angle parking.

Mr. Kinzelman explained there would be two types of parking on Old Woodward Ave. until such time that the City wanted to go to N. Old Woodward Ave. and reverse that angle of parking. Then the whole street would be back-in angle parking.

Motion by Ms. Folberg

Seconded by Mr. Rontal that the Multi-Modal Transportation Board recommends that the City Commission authorize the 66 ft. wide street design as presented by MKSK for Old Woodward Ave., from Willits St. to Brown St., with the inclusion of back-in angled parking.

There was no discussion from the public at 7:28 p.m.

Motion carried, 4-3.

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ROLLCALL VOTE Yeas: Folberg, Rontal, Adams, Surnow Nays: Edwards, Lawson, Slanga Absent: None

Dissenting board members discussed their motion. Ms. Slanga reiterated that this is Birmingham's signature street and it is not being given enough due process. She feels the board needs to hear more from the public. Ms. Edwards was not sure this proposal is a big enough gain for the City from a multi-modal perspective. Mr. Lawson did not know if it maximizes the pedestrian space. It is a long-term commitment.

- 6. MEETING OPEN TO THE PUBLIC FOR ITEMS NOT ON THE AGENDA (no comments were heard)
- 7. MISCELLANEOUS COMMUNICATIONS (items in the packet)
- 8. NEXT MEETING DECEMBER 1, 2016 AT 6 p.m.

9. ADJOURNMENT

No further business being evident, the board members adjourned the meeting at 7:29 p.m.

Jana Ecker, Planning Director

Paul O'Meara, City Engineer

City of P	Birmingham	MEMORANDUM
DATE:	November 23, 2016	Engineering Dept.
TO:	Multi-Modal Transportation Board	
FROM:	Paul T. O'Meara, City Engineer	
SUBJECT:	Parking Space on Elm St., South of I	Maple Rd.

At the October 27, 2016 City Commission meeting, a resident of the All Seasons building located at the southeast corner of Maple Rd. and Elm St. approached that body for an item not on the agenda. Concern was expressed relative to the first parking space on southbound Elm St., south of Maple Rd. The resident expressed concern that the space makes maneuvering in the area difficult, as the road is narrow. The matter was referred to staff for study. A brief reference to this exchange is noted in the attached minutes from that meeting.

The matter was referred to F&V, to be reviewed by the Multi-Modal Transportation Board (MMTB). The attached analysis was conducted by F&V. They summarized that the parking space as located is a sufficient distance from Elm St. However, it was noted that the short section of double yellow line installed to help keep northbound vehicles waiting for the traffic signal to be lined up appropriately, is extended too close to the subject space. F&V is suggesting that if 8.5 ft. of the double yellow line was removed, thus providing the minimum length required, the southbound lane would not appear so narrow.

Knowing that street parking is in high demand in the area, staff feels that this is an appropriate first step. The adjacent resident will be invited to the meeting. It is hoped that they can help add information for the board's consideration, before a final decision is made.

A suggested recommendation is provided below, based on the information presently available. Since the recommendation is a minor action, staff can proceed with this change based on the Board's direction. Further, this agenda package and the subsequent minutes of this meeting (once approved) can be forwarded to the Commission for their information.

SUGGESTED RECOMMENDATION:

1

To recommend to staff that 8.5 ft. of the double yellow line on Elm St. south of Maple Rd. be removed at its southerly end.



November 21, 2016

VIA EMAIL

Mr. Paul O'Meara City Engineer City of Birmingham 151 Martin Street Birmingham, MI 48012

RE: Elm Street at Maple Road On-Street Parking Review

Dear Mr. O'Meara,

The purpose of this letter is to provide a review of the existing on-street parking and intersection striping on Elm Street at the Maple Road approach. The following guidance regarding on street parking design is provided in the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) and shown on the attached MDOT standard plans PAVE 955-B:

- The no parking zone on Elm Street south of Maple should be a minimum of 30 feet from the crosswalk. The existing 50 foot no parking zone exceeds the minimum requirement.
- The existing parking space is 8 feet x 20 feet, which meets the minimum requirements.

The intersection approach striping on Elm Street provides a 10-foot northbound lane, delineated with a double yellow line, which begins approximately 10 feet north of the on-street parking. For southbound drivers on Elm Street this striping configuration is perceived as a 6-foot lane, and thus the on-street parking space also appears to be in conflict. It is recommended that approximately 8.5 feet of the double yellow line be removed. This will maintain the necessary delineation at the northbound approach and provide additional lane width for southbound traffic. The existing lane widths and the recommended improvement are shown on the attached Figure 1.

If you have any questions, please feel free to contact us.

Sincerely,

FLEIS & VANDENBRINK

Michael J. Labadie, PE Group Manager

Attached: PAVE-955-C Figure 1

> 27725 Stansbury Boulevard, Suite 150 Farmington Hills, MI 48334 P: 248.536.0080 F: 248.536.0079 www.fveng.com





NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.



NORTH SCALE: 1"=20'

FIGURE 1



- 2.5% from the effective date to April 30, 2017;
- 2.25% from May 1, 2017 April 30, 2018; and,
- 2% from May 1, 2018 to the termination of the Agreement

BE IT FURTHER RESOLVED, such approval by the City is given only because it is required by the Act, and is not an indication of the City's Agreement with or assent to any provisions of the Act or Agreement.

BE IT FURTHER RESOLVED, that by approving the Agreement, the City shall not be found to have waived its rights to challenge any provisions of the Act and/or any related provisions of the Agreement on the basis that such provisions are invalid and unenforceable as violations of law, including on the grounds of unconstitutional impairment of contractual rights, and further reserves any and all rights stemming from any successful challenge to such provisions undertaken by any other local franchising entity.

VOTE: Yeas, 6 Nays, None Absent, 1 (DeWeese)

VII. REMOVED FROM CONSENT AGENDA 10-326-16 CITY COMMISSION MEETING MINUTES OF OCTOBER 10, 2016

Commissioner Bordman requested the Clerk review the tape to clarify language in Resolution #10-310-16 regarding the addition of alternates on the Multi-Modal Transportation Board and to add additional information regarding the funding of the bus shelter in Resolution #10-316-16.

The Commission agreed to return this item at the next meeting.

VIII. COMMUNICATIONS

IX. OPEN TO THE PUBLIC FOR MATTERS NOT ON THE AGENDA

10-327-16 OPEN TO THE PUBLIC FOR MATTERS NOT ON THE AGENDA

Delphine Scott, resident, expressed concern with the location of the parking space on Elm, near Maple. She suggested it be eliminated as it is difficult to navigate around with oncoming traffic.

City Manager Valentine stated that staff will review the parking space.

X. REPORTS

10-328-16 COMMISSIONER REPORTS

The Commission intends to appoint members to the Advisory Parking Committee on November 14, 2016.

10-329-16 COMMISSIONER COMMENTS

Mayor Pro Tem Nickita clarified a comment from October 10th regarding the Old Woodward Master Plan. He noted that at time of the meeting, his firm had previously entered into an RFP with MKSK, however did not receive the official notice that they did not get the project until later that week. City Attorney Currier commented that it would not have made any difference in the vote, however for purposes of transparency, Mayor Pro Tem Nickita clarified the timing.

Commissioner Harris commented on the RTA presentation at the Townsend Hotel which he attended this month.

City of	Birmingham	MEMORANDUM
DATE:	November 23, 2016	Engineering Dept.
то:	Multi-Modal Transportation Board	
FROM:	Paul T. O'Meara, City Engineer	
SUBJECT:	Poppleton Ave. Reconstruction – Knox Ave. to E. Maple Rd.	

1

The above block is proposed for complete reconstruction in 2017. Due to the relatively high traffic movements on this block, F&V was asked to perform a traffic analysis to make sure that the road is designed with the appropriate lane assignments, lengths, etc. F&V will be in attendance prepared to demonstrate their findings with the Synchro traffic flow model.

The project includes the reconstruction of the Knox Ave. intersection, but stops short of any work within the Maple Rd. traffic lanes. (The Maple Rd. intersection pavement was repaired under a federal grant in the fall of 2014.) This block serves as the preferred entrance for both customers and trucks to the parking lot serving the adjacent Kroger grocery store, as well as several smaller businesses located on the same property. Traffic counts were taken recently for both the AM and PM peak periods. Findings and recommendations from F&V are attached for your review.

Due to the skewed alignment of this street compared to Elm St. to the south, a right turn lane is being suggested (similar to the existing condition), as well as a shared/through lane in the middle. Storage of right turning vehicles is suggested back to the Kroger driveway north of Maple Rd., followed by a taper back to a more traditional residential street width (two lanes).

As shown on the attachments, this section of Poppleton Ave. was identified to be part of a neighborhood connector route in Phase 3. Poppleton Ave. and Elm St. provides an important connection for bicyclists from Oakland Ave. to the north, and Bowers St. to the south. Unfortunately, a narrow 50 ft. right-of-way was provided when this road was platted in 1894, and the east side is encumbered with large utility poles placed several feet in from the sidewalk. The original pavement was built in the 1930's, and was widened near Maple Rd. more recently to allow for a separate right turn lane. F&V will be able to demonstrate the traffic difficulties that would result if the right turn lane was not present. The existing lanes are narrow, and are especially tight when large trucks servicing the Kroger loading dock are present.

If the right-of-way were larger, bike lanes would be a helpful addition to this road, giving bicyclists a separate area to wait for the traffic signal. However, due to the limitations above, building three standard 11 ft. lanes will already use almost all of the available space. Widening the street to a basic three lane width will improve the current situation for bikes, so that they can feel more comfortable waiting alongside motor vehicles, if desired. For the sake of the neighborhood and the adjacent homeowners, we also feel it is important to narrow the street back to a normal residential cross-section as it heads north to Knox Ave. Doing so will help

signal to motorists that this is the entrance to a subdivision. The resulting green space will help support existing and future trees in this section as well.

Once the City is ready to mark and designate this block as part of a neighborhood connector route, the City can install bike route signs, as well as sharrows on this block.

SUGGESTED RECOMMENDATION:

To recommend to the City Commission that Poppleton Ave. between Knox Ave. and Maple Rd. be reconstructed as shown on the attached preliminary plan. Once the City is ready to establish a neighborhood connector route on this street, as described in Phase 3 of the Mutli-Modal Master Plan, appropriate signs and sharrows can be installed as part of a larger, more complete network.



VIA FMAII

Мемо

Mr. Paul O'Meara City Engineer City of Birmingham	
Michael J. Labadie, P.E. Julie M. Kroll, P.E., PTOE Lindsay M. Sagorski, P.E. Fleis & VandenBrink	
November 23, 2016	
Poppleton Street from Knox Street to Maple Road City of Birmingham, Michigan Recommended Roadway Improvements	
	Mr. Paul O'Meara City Engineer City of Birmingham Michael J. Labadie, P.E. Julie M. Kroll, P.E., PTOE Lindsay M. Sagorski, P.E. Fleis & VandenBrink November 23, 2016 Poppleton Street from Knox Street to Maple Road City of Birmingham, Michigan Recommended Roadway Improvements

Introduction

This memorandum presents the methodologies, analyses, and results of the traffic analysis at the intersection of Poppleton Street and Maple Road in the City of Birmingham, Michigan.

The City of Birmingham has requested an analysis to determine recommended storage length at the Poppleton Street approach at the Maple Road intersection. This memo summarizes the results and recommendations of the analysis.

Data Collection

The existing weekday turning movement traffic volume data were collected by F&V subconsultant Traffic Data Collection, Inc. (TDC) on Wednesday, November 9, 2016 during the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak periods at the study intersection. The AM and PM peak hour traffic volumes were utilized for this study and the volumes were balanced upward through the study network. F&V also collected an inventory of existing lane use and traffic controls. The applicable data referenced in this memorandum are attached.

Traffic Analysis

Existing storage length for the southbound right turn lane is 150 feet. Existing peak hour network operations and vehicle queues were reviewed at the study intersection using Synchro (Version 9) traffic analysis software and SimTraffic. This analysis was based on the existing lane use and traffic control, the existing peak hour traffic volumes, and the methodologies presented in the *Highway Capacity Manual, 2010* (HCM). The results of this analysis are summarized in Table 1 and SimTraffic results are attached.

Table 1: Southbound Poppleton Street at Maple Road Vehicle Queue Lengths (Feet)

	AM	<u>Peak</u>	<u>PM F</u>	Peak	
Turning Movement	Avg	95 th	Avg	95 th	Recommended
merement	Queue	Queue	Queue	Queue	
Right Turn Lane	68	126	54	114	150 feet

The results of the analysis indicate a storage length of 150 feet with a 100-foot taper is recommended for the southbound right turn lane to accommodate the 95th percentile queue length. The recommended geometry is shown in the attached figure. The traffic simulations indicate that during the AM peak period the southbound left-through lane queues on Poppleton Street block the Kroger driveway located for approximately 8 minutes of the AM peak period and 2 minutes of the PM peak period.

Conclusions

The conclusions of this analysis are as follows:

- A storage length of 150 feet with a 100-foot taper is recommended for the southbound right turn lane.
- During the AM peak period the southbound left-through queues on Poppleton Street block the Kroger driveway for approximately 8 minutes of the AM peak period and 2 minutes during the PM peak period. This is not significant and is not expected to impact the operations of the Poppleton and Maple Road intersection.

Any questions related to this memorandum, study, analyses, and results should be addressed to Fleis & Vandenbrink.

Attached:	Traffic Volume Data
	Recommended Improvement
	Sim Traffic

LMS;jmk





Traffic Data Collection, LLC tdcounts.com Phone: (586) 786-5407 Traffic Study Performed For: Fleis & VandenBrink



Project: Birmingham Traffic Study Type: 4 Hr. Video Turning Movement Count Weather: Pt. Sunny Temp 50's Count By: Miovision Video VCU 1US File Name : TMC_1 Maple & Poppleton_11-6-16 Site Code : TMC_1 Start Date : 11/9/2016 Page No : 1

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Ped																					
		Рор	pleton S	Street			Έ.	Maple F	Road	-		Š.	Elm Str	eet			Ε.	Maple R	oad		
		Š	outhbou	ind			N	/estbou	ind			N	orthbou	nd			E	astbour	nd		
Start Time	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Rgt	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	11	2	3	2	18	0	109	3	0	112	1	2	2	0	5	0	81	6	1	88	223
07:15 AM	15	2	1	0	18	4	150	2	0	156	8	3	1	1	13	1	84	5	1	91	278
07:30 AM	14	3	10	0	27	7	170	6	1	184	8	1	4	1	14	2	143	10	1	156	381
07:45 AM	15	11	4	0	30	2	141	5	0	148	10	7	4	3	24	4	178	16	1	199	401
Total	55	18	18	2	93	13	570	16	1	600	27	13	11	5	56	7	486	37	4	534	1283
08:00 AM	26	8	5	2	41	4	170	10	0	184	10	4	4	0	18	6	137	13	1	157	400
08:15 AM	18	6	4	4	32	1	145	5	1	152	11	3	2	0	16	1	155	10	2	168	368
08:30 AM	19	10	4	3	36	7	146	4	0	157	12	7	3	2	24	0	141	14	0	155	372
08:45 AM	16	2	8	12	38	6	177	4	0	187	14	5	3	2	24	4	151	18	1	174	423
Total	79	26	21	21	147	18	638	23	1	680	47	19	12	4	82	11	584	55	4	654	1563
BREAK																					
04-00 DM	20	0	4	4	45	Б	162	1	1	170	15	11	Б	٥	21	o	125	15	2	140	106
04.00 PM	29	12	4 10	4	40	5	103	1	0	170	21	0	0	2	31 /1	0 5	135	10	2	160	400
04.13 PM	23	12	10	4	60	5	156	4	0	160	15	11	7 0	2	35	5	140	2J 18	0	109	441
04.30 PM	23	5	13	1	12	13	190	1	1	202	25	17	2	1	51	3	140	10	1	165	430
Total	108	38	42	10	198	28	674	12	2	716	76	48	31	3	158	21	568	69	7	665	1737
Total	100	00	12	10	170	20	0/1	12	2	, 10	70	10	01	0	100	21	000	07	,	000	1101
05:00 PM	28	3	13	2	46	8	191	4	1	204	20	6	7	0	33	6	146	8	2	162	445
05:15 PM	20	14	11	4	49	7	161	2	3	173	18	13	10	3	44	1	198	16	1	216	482
05:30 PM	28	18	17	4	67	2	183	2	2	189	20	8	7	0	35	2	173	19	0	194	485
05:45 PM	14	10	20	3	47	11	168	4	1	184	10	8	7	1	26	8	154	21	2	185	442
Total	90	45	61	13	209	28	703	12	7	750	68	35	31	4	138	17	671	64	5	757	1854
Grand Total	332	127	142	46	647	87	2585	63	11	2746	218	115	85	16	434	56	2309	225	20	2610	6437
Apprch %	51.3	19.6	21.9	7.1		3.2	94.1	2.3	0.4		50.2	26.5	19.6	3.7		2.1	88.5	8.6	0.8		
Total %	5.2	2	2.2	0.7	10.1	1.4	40.2	1	0.2	42.7	3.4	1.8	1.3	0.2	6.7	0.9	35.9	3.5	0.3	40.5	
Pass Cars	329	125	138	0	592	86	2526	57	0	2669	217	115	85	0	417	56	2239	220	0	2515	6193
% Pass Cars	99.1	98.4	97.2	0	91.5	98.9	97.7	90.5	0	97.2	99.5	100	100	0	96.1	100	97	97.8	0	96.4	96.2
Single Units	1	2	3	0	6	1	55	5	0	61	1	0	0	0	1	0	68	3	0	71	139
% Single Units	0.3	1.6	2.1	0	0.9	1.1	2.1	7.9	0	2.2	0.5	0	0	0	0.2	0	2.9	1.3	0	2.7	2.2
Heavy Trucks	2	0	1	0	3	0	4	1	0	5	0	U	U	0	0	0	2	2	0	4	12
% Heavy Trucks	0.6	0	0.7	<u> </u>	0.5	0	0.2	1.6	0	0.2	0	<u> </u>	0	0	0	0	0.1	0.9	0	0.2	0.2
Ped	0	U	U	46	46	U	0	0	100	11	U	U	U	10	16	U	U	U	20	20	93
% Ped	0	U	U	100	1.1	U	U	0	100	0.4	0	U	U	100	3.7	U	U	U	100	U.8	1.4

Comments: 4 hour intersection video traffic study conducted during typical weekday (Wednesday) from 7:00-9:00 AM, morning & 4:00-6:00 PM afternoon peak hours, while school was in session. Signalized intersection with ped. signals.all quadrants, no push buttons. Video SCU camera was located within SW intersection quadrant.

Traffic Data Collection, LLC tdcounts.com Phone: (586) 786-5407

Phone: (586) 786-5407 Traffic Study Performed For: Fleis & VandenBrink

> File Name : TMC_1 Maple & Poppleton_11-6-16 Site Code : TMC_1 Start Date : 11/9/2016 Page No : 2

Project: Birmingham Traffic Study Type: 4 Hr. Video Turning Movement Count Weather: Pt. Sunny Temp 50's Count By: Miovision Video VCU 1US





Traffic Data Collection, LLC tdcounts.com Phone: (586) 786-5407 Traffic Study Performed For: Fleis & VandenBrink



Project: Birmingham Traffic Study Type: 4 Hr. Video Turning Movement Count Weather: Pt. Sunny Temp 50's Count By: Miovision Video VCU 1US File Name : TMC_1 Maple & Poppleton_11-6-16 Site Code : TMC_1 Start Date : 11/9/2016 Page No : 3

		Poppleto	on Street			E. Mapl	e Road			S. Elm	Street			E. Map	le Road		
		South	bound			West	ound			North	bound			East	bound		
Start Time	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Int. Total
Peak Hour Analysis	From 07:00) AM to 12:	30 PM - P	eak 1 of 1													
Peak Hour for Entire	Intersectio	n Begins a	t 07:30 AN	Λ													
07:30 AM	14	3	10	27	7	170	6	183	8	1	4	13	2	143	10	155	378
07:45 AM	15	11	4	30	2	141	5	148	10	7	4	21	4	178	16	198	397
08:00 AM	26	8	5	39	4	170	10	184	10	4	4	18	6	137	13	156	397
08:15 AM	18	6	4	28	1	145	5	151	11	3	2	16	1	155	10	166	361
Total Volume	73	28	23	124	14	626	26	666	39	15	14	68	13	613	49	675	1533
% App. Total	58.9	22.6	18.5		2.1	94	3.9		57.4	22.1	20.6		1.9	90.8	7.3		
PHF	.702	.636	.575	.795	.500	.921	.650	.905	.886	.536	.875	.810	.542	.861	.766	.852	.965
Pass Cars	72	27	21	120	14	612	22	648	39	15	14	68	13	602	45	660	1496
% Pass Cars	98.6	96.4	91.3	96.8	100	97.8	84.6	97.3	100	100	100	100	100	98.2	91.8	97.8	97.6
Single Units	0	1	2	3	0	12	4	16	0	0	0	0	0	10	2	12	31
% Single Units	0	3.6	8.7	2.4	0	1.9	15.4	2.4	0	0	0	0	0	1.6	4.1	1.8	2.0
Heavy Trucks	1	0	0	1	0	2	0	2	0	0	0	0	0	1	2	3	6
% Heavy Trucks	1.4	0	0	0.8	0	0.3	0	0.3	0	0	0	0	0	0.2	4.1	0.4	0.4
Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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		Poppleto	n Street			E. Map	le Road			S. Elm	Street			E. Mapl	e Road		
		South	ound			West	bound			North	bound			Eastb	ound		
Start Time	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Rgt	Thru	Left	App. Total	Int. Total
Peak Hour Analysis	From 12:45	PM to 05:4	45 PM - F	Peak 1 of 1													
Peak Hour for Entire	Intersection	n Begins at	04:45 PI	N.													
04:45 PM	23	5	13	41	13	184	4	201	25	17	8	50	3	145	13	161	453
05:00 PM	28	3	13	44	8	191	4	203	20	6	7	33	6	146	8	160	440
05:15 PM	20	14	11	45	7	161	2	170	18	13	10	41	1	198	16	215	471
05:30 PM	28	18	17	63	2	183	2	187	20	8	7	35	2	173	19	194	479
Total Volume	99	40	54	193	30	719	12	761	83	44	32	159	12	662	56	730	1843
% App. Total	51.3	20.7	28		3.9	94.5	1.6		52.2	27.7	20.1		1.6	90.7	7.7		
PHF	.884	.556	.794	.766	.577	.941	.750	.937	.830	.647	.800	.795	.500	.836	.737	.849	.962
Pass Cars	99	40	54	193	29	709	12	750	83	44	32	159	12	640	56	708	1810
% Pass Cars	100	100	100	100	96.7	98.6	100	98.6	100	100	100	100	100	96.7	100	97.0	98.2
Single Units	0	0	0	0	1	10	0	11	0	0	0	0	0	22	0	22	33
% Single Units	0	0	0	0	3.3	1.4	0	1.4	0	0	0	0	0	3.3	0	3.0	1.8
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Ped	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Intersection: 13: Elm Street/Poppleton Street & Maple Road

Movement EB EB WB WB SB SB SB Directions Served LT TR LT TR LT R Maximum Queue (ft) 161 153 485 473 166 163 131
Directions Served LT TR LT TR LTR LT R Maximum Queue (ft) 161 153 485 473 166 163 131
Maximum Queue (ft) 161 153 485 473 166 163 131
Average Queue (ft) 67 73 437 436 74 64 68
95th Queue (ft) 131 131 550 542 250 172 126
Link Distance (ft) 492 492 384 384 435 162
Upstream Blk Time (%) 81 83 4 13 0
Queuing Penalty (veh) 372 381 0 16 0
Storage Bay Dist (ft) 150
Storage Blk Time (%) 13 1
Queuing Penalty (veh) 9 0

Intersection: 13: Elm Street/Poppleton Street & Maple Road

Movement EB EB WB WB SB SB SB Directions Served LT TR LT TR LT R Maximum Queue (ft) 192 161 395 393 279 188 139
Directions Served LT TR LT TR LT R Maximum Queue (ft) 192 161 395 393 279 188 139
Maximum Queue (ft) 192 161 395 393 279 188 139
Average Queue (ft) 80 78 221 231 114 65 54
95th Queue (ft) 149 136 479 488 307 142 114
Link Distance (ft) 492 492 384 384 435 162
Upstream Blk Time (%) 20 22 7 2 0
Queuing Penalty (veh) 92 99 0 5 0
Storage Bay Dist (ft) 150
Storage Blk Time (%) 2 1
Queuing Penalty (veh) 3 1

Google Maps 142 Poppleton St



Image capture: Sep 2014 © 2016 Google

Birmingham, Michigan Street View - Sep 2014



Google Maps 142 Poppleton St



Image capture: Sep 2014 © 2016 Google

Birmingham, Michigan

Street View - Sep 2014



CITY OF BIRMINGHAM MULTIMODAL TRANSPORTATION PLAN $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ **NETWORK IMPLEMENTATION PLAN**

4.4 PHASE 3

PHASE 3: OVERVIEW

This phase focuses on completing the multi-modal network and includes the remaining network improvements. Due to the length of time it is going to take to complete the first two phases, the remaining improvements have been grouped into Phase 3. When the first two phases are near completion, a more thorough evaluation should be done to determine what new opportunities are available and what the costs may be.

The following pages outline the remaining infrastructure improvements to complete the multimodal network.



PHASE 3: RECOMMENDED NEIGHBORHOOD CONNECTOR ROUTES

This phase focuses on completing the neighborhood connector routes. While the neighborhood connector routes are relatively easy and economical to implement some are dependent on the construction of proposed pathways and road crossing improvements. It will be important to prioritize the implementation of the neighborhood connector routes in this phase based on the progress of pathways implementation and road crossing improvements.





• 2 BIKE ROOMS (NOT SHOWN ON MAP)

City of	Birmingham	MEMORANDUM
DATE:	November 23, 2016	Planning Dept.
TO:	Multi-Modal Transportation Board	
FROM:	Lauren Chapman, Assistant Planner	·
SUBJECT:	Old Woodward Ave. and Maple Rd.	- Materials

At the last meeting on November 21st, the Multi-Modal Transportation Board recommended that the City Commission authorize the 66 ft. wide street design as presented by MKSK for Old Woodward Ave., from Willits St. to Brown St., with the inclusion of back-in angled parking. The City Commission met immediately after the Multi-Modal Transportation Board and also discussed the Old Woodward Ave. project. The City Commission voted to accept the plan with head in angle parking with the flexibility to change it in the future. The Commission also voted to approve the proposed width of 66 feet from curb to curb.

Materials

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MKSK has proposed an alternate set of materials for the City Commission to consider. They have been advised that the City has developed and invested in a standard design and materials concept consisting of sawcut brush finished concrete, combined with exposed aggregate accents installed between trees, placed typically on 40 ft. spacing. The recommendation is to extend this concept on Maple Rd., but that the Phase I project would be an opportunity to highlight the Old Woodward corridor with enhanced materials that could make it especially prominent. The following section describes the two proposals, which is then followed with cost estimates for both.

City Standard Materials

The Standard Streetscape option that has been prepared is generally consistent with our current downtown streetscape standards which include broom finish concrete and exposed aggregate sidewalks, standard concrete travel and parking lanes, and painted crosswalks. Suggested modifications for the standard option include:

- On Old Woodward Ave., planter wells would be spaced at 23 ft. on center, with every other well containing a tree. Each well would be raised by 6 inches, surrounded by an exposed aggregate landscape curb. Wells with trees would be excavated deeper (2 to 3 feet) and replaced with improved organic materials to help improve the future health of the tree.
- 2. On Maple Rd., the wells would be similarly modified, except that trees would be spaced every 23 ft., and generally be installed in elongated tree grates, given the narrow sidewalk present on Maple Rd.

Enhanced Materials Options

The Enhanced Streetscape option is being recommended to add distinctive color and textures to the material palette to draw attention to Old Woodward as Birmingham's "Main Street", and make it a special place that attracts residents and visitors alike. The following are the recommended materials that are related to the multi-modal elements:

- i. Red/brown brick pavers in the main Maple Rd. intersection, to delineate the left turn lane, and delineate the crosswalks in the other intersections. White pavers would be arranged in the crosswalk area to mimic the typically painted pavement markings. Since the other intersections would be primarily concrete, the crosswalks would be constructed of a band of brick pavers, and no pavement markings. Brick pavers are also recommended in the sidewalk at each intersection. To help reduce costs, the brick pavers shown in the parking areas have been deleted in favor of a brick band delineation between the parking area and the drive lanes;
- ii. Buff-washed concrete for all remaining sidewalks on Old Woodward Ave. (shown with a medium gray tone). This surface is constructed in a method similar to exposed aggregate, but it does not expose the stone as much;
- iii. Granite curb inlays would be installed at the Maple Rd. intersection, flush with the pavement, to help delineate the line between the street and the sidewalk; and
- iv. On Maple Rd., adjacent the left turn lanes, an exposed aggregate curb would extend from just behind the street curb and then around each tree well. Plantings would fill the area between the trees and the street. The sidewalks would revert back to the standard sawcut brushed concrete finish.

The Board is asked to consider the use of City standard materials, as compared to the enhanced materials shown herein, particularly with respect to how the materials may alter the pedestrian experience. It is noted that the Major Street Fund will be the funding source for the majority of the cost increases, with the exception of the sidewalk areas. All sidewalk costs will be added up (including all pavements, trees, landscaping, etc.) and 75% of that construction cost will be charged to the adjacent property owners as a special assessment.

A suggested recommendation is provided below:

SUGGESTED RECOMMENDATION:

The Multi-Modal Transportation Board recommends that the City Commission direct the use of standard downtown materials for the Old Woodward Ave. Reconstruction Project, from Willits St. to Brown St.

or –

The Multi-Modal Transportation Board recommends that the City Commission direct the use of the enhanced materials as recommended from MKSK for the Old Woodward Ave. Reconstruction Project, from Willits St. to Brown St.

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MEMORANDUM

Planning Division Engineering Division Police Department

DATE: November 16, 2016

TO: Joseph A. Valentine, City Manager

FROM: Jana L. Ecker, Planning Director Paul O'Meara, City Engineer Mark Clemence, Police Chief

SUBJECT: Old Woodward and Maple Reconstruction Plans for 2017

During the spring and summer of 2017, the City plans to reconstruct portions of both Old Woodward and Maple in Downtown Birmingham. A complete reconstruction includes the installation of new water and sewer lines, new curbs, gutters, sidewalks, and new streets. This is being proposed for Old Woodward and Maple for numerous reasons. The water and sewer systems are old and in need of replacement. Some of the water and sewer lines in this area are among the first ever installed by the Village of Birmingham. One section of water main is labeled as constructed in 1889, the oldest known main in our system. It is now well past its expected service life.

Also, after the first water and sewer systems were installed, several other pipelines were installed, particularly on the sewer system. In some areas, there are as many as five parallel sewer lines. Our new design proposes to install newer, larger water mains and sewers so that the majority of the existing systems can be either taken out of service, or internally lined.

In addition to the age and condition of the underground utilities, the at grade infrastructure is also in need of replacement. The existing pavement in the street dates as far back as 1930. It is old and tired, and needs to be routinely resurfaced to keep it in reasonable repair. Accessibility is also poor in several areas, not meeting current ADA standards. Serious grade differences between the front doors of businesses are best resolved by removing and replacing the road at a higher grade.

Finally, the Downtown Birmingham 2016 Master Plan provided guidelines and recommendations on how to rebuild the entire central business district. Several projects featuring consistent pavement design and materials have been undertaken in the area since 2004 working in this direction. Following through with the remaining planned projects on the Old Woodward Ave. and Maple Rd. corridors will bring the City significantly closer to meeting the goals of this master plan that was approved in concept in 1996.

Thus, the reconstruction of both of the City's main downtown streets is upon us. The long term plan for finishing the replacement of streets in the central business district is as follows:

- Phase I Old Woodward Ave. Willits St./Oakland Blvd. to Brown St. and Maple Pierce to east of Old Woodward (2017)
- Phase II Maple Rd. Bates St. to Woodward Ave. (2019)
- Phase III Old Woodward Ave. Brown St. to Landon Ave. (2021)

In 2012 the City Commission appointed a seven member Old Woodward Ave. Conceptual Design Ad Hoc Committee to discuss in detail the cross-section that should be used for Old Woodward Ave., once it is reconstructed. The goal of that committee was to advise the Engineering Dept. as it was applying for federal funds to help in the cost of this project.

During the meetings for this ad hoc committee, the traffic safety benefits of introducing a left turn lane to the street were discussed. The question that was then wrestled with was whether the left turn lane should extend through the entire project, or should medians be constructed, similar to what was done north of the Willits St./Oakland Blvd. intersection. Concerns were expressed about the frequent congestion that occurs in this area, and how medians would add to this problem. In the end, the Committee concluded that the Old Woodward Ave. cross-section should include a continuous left turn lane.

With that information, the Engineering Dept. applied several times for funding on this segment. Largely due to its relatively low through traffic counts (compared to other major streets in the County), funding was never awarded to this segment. (The Engineering Dept. also began applying for funding on the downtown segment of Maple Rd., where we were successful. Funding on the segment from Bates St. to Woodward Ave. is now set for 2019 construction, as the phase II downtown street project.)

In 2014, the original Multi-Modal Transportation Steering Committee worked with the Greenway Collaborative to prepare the Multi-Modal Transportation Master Plan. The Committee discussed both of these corridors from a multi-modal perspective. An analysis was made relative to the ability to provide room for bike lanes and bike amenities. In the end, it was determined that there was not sufficient room in either corridor to introduce bike lanes, unless parking was sacrificed. Given the high demand for parking in the central business district, the Master Plan was finalized recommending sharrows (symbols advising motorists to share the road with bicyclists) for both streets.

In 2015, City staff worked with F&V, the City's multi-modal transportation consultant, to develop simple engineering drawings for all three phases of the project. Scaled drawings were prepared by F&V, and were reviewed internally by all departments. Due to the complexity and importance of the project given its central location, the City Commission directed staff to hire an outside urban design consultant to review in detail the plans that were prepared and to incorporate design details to ensure that our downtown remains an attractive destination.

Thus, on September 15, 2016 a Request for Proposals ("RFP") was issued by the City seeking a design/planning consultant to review the City's preliminary plans for the reconstruction of segments of Old Woodward and Maple in downtown that are scheduled for construction in 2017. The completion of final plans and detailed renderings for key segments of the project area will be the final deliverables.

Two proposals were submitted in response to the RFP, one from McKenna Associates and one from MKSK. A selection panel was convened made up of City staff and board members to review the responses submitted to complete final plans and renderings for Old Woodward and Maple downtown. The selection panel was comprised of the following representatives:

- Planning Board Chairperson
- Multi-Modal Transportation Board Chairperson
- Architectural Review Committee Member
- Planning Board Member (Design or Architect Member)
- City Manager
- City Engineer
- Planning Director

On October 4, 2016, the selection panel met to review and discuss the proposals submitted. Each member completed an evaluation sheet for each proposal, and the scores were compiled. The top firm based on the raw scores was MKSK/Parsons. The panel then discussed the project needs and the pros and cons of each team of respondents. The panel unanimously agreed to recommend MKSK/Parsons to the City Commission to complete the final plans and renderings for Old Woodward and Maple downtown. However, the panel requested that staff contact MKSK/Parsons and ask if there were any price reductions that could be obtained by removing the use of a new steering committee (as recommended in the proposal), and substituting an established City board in as the principal reviewing board.

In response, MKSK proposed a reduction of \$3100.00 of the originally proposed price, for a not to exceed total of \$69,437.00 to complete the final plans and renderings for Old Woodward and Maple downtown.

On October 10, 2016, the City Commission reviewed MKSK's proposal, and voted unanimously to approve a budget amendment to fund the work described above and to direct staff to execute a contract with MKSK/Parsons, in an amount not to exceed \$69,437.00, to complete the scope of work contained in the RFP to complete final plans and renderings for segments of Old Woodward and Maple downtown.

On October 11, 2016, the MKSK team commenced their field work on the Old Woodward and Maple design project. This basic traffic analysis that was previously completed was provided to MKSK. Since that time, the team has been working quickly to review the plans previously proposed for the project area, and has been formulating design recommendations. Given the extremely tight timeline for this project to ensure construction in the spring of 2017, staff has been meeting with the consulting team on a regular basis to move the project along. The schedule of meetings for the project is summarized in the chart below.

<u>Task</u>	Date
Kick Off Meeting City staff 	October 11, 2016
Task 1 and 2 Meeting City staff 	October 26, 2016
Multi-Modal Transportation Board Update	November 3, 2016
Internal Staff Review Meeting with MKSK	November 4, 2016
Public Open House	November 7, 2016 4:00 – 7:00pm Baldwin Public Library
Task 3 & 4 Meeting City staff 	November 14, 2016
Meeting with Downtown Merchants	November 15, 2016
Draft Plan Complete	November 18, 2016
Multi-Modal Board Meeting	November 21, 2016
City Commission Meeting	November 21, 2016
Completion of Final Plan	December 5, 2016

On November 7, 2016, MKSK conducted a public open house to present two conceptual options for N. Old Woodward and Maple, a standard streetscape option and an enhanced streetscape option. Both options proposed a 66' wide road section, with 9' wide reverse angled parking spaces, a 13' wide travel lane for vehicles in each direction, and a 9' wide center turn lane. The existing road section on Old Woodward is 70' in width, and thus the proposed design allows the sidewalks on either side of the street to be expanded by 2'. This extra width allows for the expansion of the tree wells to accommodate larger and healthy canopy trees, while keeping an extra 2' of sidewalk adjacent to the curb for parking meter access. Public input was gathered on the proposed designs. A majority of participants were in favor of the enhanced streetscape option.

On November 15, 2016, staff conducted a presentation to a group of downtown merchants to provide information on the proposed phasing of the projects and to discuss the impacts and timing of construction.

On November 21, 2016, MKSK will present their plan for a new road design based on the following:

Road Design

The proposed road width for both options remains at 66', with 15.5' deep reverse angle parking, two 13' travel lanes and a 9' center turn lane. However, the width of the reverse angle parking spaces has been increased from 9' to 9.5' to allow more space for reverse maneuvering. The expanded sidewalk space and expanded tree wells remain. The revised plans are attached as Attachment A for your review.

As noted, the recommendation is to propose narrowing Old Woodward Ave. from 70 ft. to 66 ft., using reverse angle parking instead of head-in angle parking. The changed width and parking concept was discussed extensively between City staff, MKSK, Parsons, and F&V. In the end, all parties agree with this concept, and note the following:

- Back-in parking is a safer maneuver, as vehicles have a better line of vision to enter the travel lane if their vehicle is facing forward instead of backward. (The MI Dept. of Transportation (MDOT) has recently adopted a new standard that they will allow angled parking on state highways, but only if the back-in concept is used – see attached details).
- The additional two feet of space on each street allows for an enhanced tree well and planter box design, as now featured in the MKSK drawings. By building a narrow walking area behind the curb, pedestrians have space to exit vehicles, pay at parking meters, and get to the sidewalk, while at the same time allowing for the construction of elongated (12 ft. x 5 ft) tree wells and planter boxes to encourage the growth of larger canopy trees.

The benefits of reverse angle parking compared to conventional head-in angle parking are analyzed in Attachment B. Many cities have been switching to reverse angle parking in downtown areas to improve safety and improve the comfort and accessibility for shoppers to load and unload packages, strollers and mobility assistance devices. Some examples of cities that have switched to reverse angle parking are shown in Attachment C attached to this report. Traffic accident data has been provided for recent years for your review in Attachment D. The Police Department has compiled accident reports for the three years from 2012-2015 for accidents on Old Woodward to determine the number of accidents that has occurred based on the current front in angled parking. The data show that thirty of the sixty-four accidents that occurred during this time frame were related to the angled on street parking condition.

The recommended option includes reverse angle parking, based on increased safety. If however, there is a desire to revert back to forward angle parking after the road has been constructed, this could be done by keeping the 66' road width, but changing the angle of the striping for the on street parking spaces. Doing so would require the following:

- Pavement markings for each parking space would have to be ground off the new concrete pavement, reducing the quality of the finish of the new concrete; and
- Each parking meter post would have to be removed and relocated to the appropriate location to fit the head-in parking locations. The old location would then be filled with a circular cement patch.

Other Considerations

MKSK has proposed an alternate set of materials for the City Commission to consider. They have been advised that the City has developed and invested in a standard design and materials concept consisting of sawcut brush finished concrete, combined with exposed aggregate accents installed between trees, placed typically on 40 ft. spacing. The recommendation is to extend this concept on Maple Rd., but that the Phase I project would be an opportunity to highlight the Old Woodward corridor with enhanced materials that could make it especially prominent. The following section describes the two proposals, which is then followed with cost estimates for both.

City Standard Materials

The Standard Streetscape option that has been prepared is generally consistent with our current downtown streetscape standard which include broom finish concrete and exposed aggregate sidewalks, standard concrete travel and parking lanes, and painted crosswalks. Some changes have been introduced, as follows:

- i. Raised planter boxes measuring 12 ft. x 5 ft. framed with exposed aggregate curbs would be installed at 23 ft. on center. Every other well would contain just plantings, but not a tree. Tree wells would be excavated to either 2 or 3 ft. deep, and backfilled with an organic soil blend designed to allow the trees to thrive better than they have in the past. The wells without trees would be excavated to about 12 inches, to reduce cost and construction time.
- ii. Elongated tree wells are proposed for Maple Rd. as well. In the areas where the left turn lanes are being constructed, the tree wells would be open and curbed, similar to Old Woodward Ave. When Phase II is constructed in areas with parallel parking, the tree wells will be covered with larger 12 ft. x 5 ft. steel grates. The grates will be needed to allow for pedestrians to walk around parking spaces, while the larger size will allow the trees to grow better.

Enhanced Materials Options

The Enhanced Streetscape option is being recommended to add distinctive color and textures to the material palette to draw attention to Old Woodward as Birmingham's "Main Street", and make it a special place that attracts residents and visitors alike. The following are the recommended materials:

- i. Red/brown brick pavers in the main Maple Rd. intersection, to delineate the left turn lane, and delineate the crosswalks in the other intersections. Brick pavers are also recommended in the sidewalk at each intersection. To help reduce costs, the brick pavers shown in the parking areas have been deleted in favor of a brick band delineation between the parking area and the drive lanes;
- ii. Gray brick paver band between the tree wells, constructed similar to the red/brown pavers described above;
- iii. Buff-washed concrete for all remaining sidewalks on Old Woodward Ave. (shown with a medium gray tone). This surface is constructed in a method similar to exposed aggregate, but it does not expose the stone as much;
- iv. Granite curb tree wells instead of exposed aggregate;

- v. Granite curb inlays would be installed at the Maple Rd. intersection, flush with the pavement, to help delineate the line between the street and the sidewalk; and
- vi. On Maple Rd., adjacent the left turn lanes, an exposed aggregate curb would extend from just behind the street curb and then around each tree well. Plantings would fill the area between the trees and the street. The sidewalks would revert back to the standard sawcut brushed concrete finish.

Traffic Signal Replacements

Within Phase I, there are three signalized intersections on Old Woodward Ave. that have not been modernized (Hamilton Ave., Maple Rd., and Brown St.). Staff has included the standard mast arm design that has been installed in several intersections as the preferred method to replace these intersections, so that the design will match those that have already been installed in the vicinity. Additional signal replacements are planned in Phase II (Maple Rd. at Bates St. and Henrietta St.). No signal work is proposed in Phase III. MKSK has endorsed this direction, and included the mast arm design in their recommendations.

Street Light Replacements

The MKSK City Standard option includes the standard DTE Energy installed street lights that have been installed on several other downtown projects over the past 17 years. The luminaire will be similar to the current lights, and the post is enhanced. Electrical outlets would be installed in the posts in order to provide electricity to holiday lighting in the adjacent trees. Overhead lights would also be provided at each intersection to ensure proper light levels on the crosswalks, by attaching cobra head fixtures to the mast arm signal poles.

On the Enhanced Materials option for Old Woodward, the recommendation is to select an updated pedestrian street light and post, as shown on the attached drawings. It is assumed that these would be installed by DTE Energy, and include electrical outlets as well. The recommendation is to select new street lights at the intersections to match the more contemporary style used for the fixtures in the median on N. Old Woodward, and to have these installed on the mast arms. Costs for the revised street light design have not been explored, but are anticipated to be similar to that for the standard design.

During staff discussions, it has been noted that an independent electrical system could also be installed. The system would provide ground mounted electrical outlets at each tree well to light the trees accordingly. The separate system is estimated to cost roughly \$200,000, although the cost of the DTE street lights could be reduced about \$50,000 if the electrical outlets were eliminated from them. Installing a separate electrical system would allow the lights to be powered all day long, where the current system only turns on at night. The cost estimates below do not include this system.

Cost Implications

The following table provides proposed costs to the Major Street Fund for the two designs, as compared to what was budgeted. Additionally, we have included funds that have been reserved for other petition initiated road projects in the current fiscal year that failed to advance. As a result, the additional funding needed to match the cost estimates is indicated in the column to the right.

Cost Elements	Cost Estimate	Phase I Budget Estimate	Variance	Reserved Funds Available	Additional Funding Needed
Phase I Standard Design	\$3,144,100	\$1,550,000	\$1,594,100	\$1,300,000	\$294,100
Phase I Enhanced	\$4,014,300	\$1,550,000	\$2,464,300	\$1,300,000	\$1,164,300

Factors driving up the cost of the standard materials option (compared to budget) include replacement of the trees, enlarged, more numerous raised tree wells including enhanced soil replacement for each tree, and irrigation and perennials in each tree well. Extra cost items for the enhanced materials option include granite curbed tree wells, brick paver street and sidewalk sections, and large areas of buff-washed concrete sidewalks.

On previous downtown projects, the City has charged a streetscape special assessment to the adjacent property owners for the new, enhanced sidewalks. Costs have been based on 75% of all costs attributable to the area between the property line and the curb on the street, such as sidewalks, tree wells, etc. Street light replacement has been paid for by the City, since these are replacing a street lighting system that was assessed previously. Special assessments figures below are different for Old Woodward Ave. vs. Maple Rd. because the level of enhancements envisioned for Maple Rd. is not as great as it is for Old Woodward Ave., on both the standard and enhanced options.

Once input from the Commission is gathered relative to the materials to be used, staff will return at a later date to set a public hearing for this special assessment district, as well as the assessment for the replacement of sewer laterals.

At this time, following a presentation by MKSK, the City Commission will be asked to accept the plan with the new road dimensions, select a preferred parking solution and direct staff to continue to refine the plan based on City Commission input.

Suggested Action:

To accept the recommended road design by MKSK and continue to refine the plan with reverse angle parking;

OR

To accept the recommended road design by MKSK and continue to refine the play with head in angle parking.

















CITY OF BIRMINGHAM | OLD WOODWARD AVE & MAPLE DRIVE CORRIDOR PLAN



KEY PLAN



66' ROADWAY SECTION | STANDARD MATERIALS

MKSK

OLD WOODWARD AVE & MAPLE ROAD | BEFORE

- 1 CROSSWALK
- 2 GRANITE BOLLARD
- 3 SIGNALS W/ LIGHT
- 4 ADA RAMP
- 5 UP-RIGHT STREET TREE
- 6 CANOPY STREET TREE
- 7 FLUSH TREE PLANTER

8 BENCH SEATING

LEGEND

CITY OF BIRMINGHAM | OLD WOODWARD AVE & MAPLE DRIVE CORRIDOR PLAN

KEY PLAN

66' ROADWAY SECTION | ENHANCED MATERIALS

CITY OF BIRMINGHAM

OLD WOODWARD AVENUE AND MAPLE DRIVE CORRIDOR PLAN

5

INTERACTIVE PYLON

OVERHEAD MONUMENT ALT

OLD WOODWARD AVE & MAPLE ROAD | BEFORE

- 1 CROSSWALK
- 2 GRANITE BOLLARD
- 3 SIGNALS W/ LIGHT
- 4 ADA RAMP
- 5 UP-RIGHT STREET TREE
- 6 CANOPY STREET TREE
- 7 CURBED TREE PLANTER

- 8 BENCH SEATING
- 9 INTERACTIVE PYLON

Attachment E:

PRELMINARY ENGINEER'S OPINION OF PROBABLE COST OLD WOODWARD & MAPLE STREET 2017 WORK - PRE-ENGINEERING w/STANDARD UPGRADES OPTION A ISSUED 11/17/16

NO.		PAY UNIT	OLD WOODWARD	MAPLE	TOTAL QUANTITY	UNIT PRICE	TOTAL AMOUNT
1	24" Combined Sewer C76 CL-IV Trench A	LE	421	0	421	\$ 200.00	\$ 84 200 00
2	18" Combined Sewer, C76, CL-IV, Trench A	LF	464	0	464	180.00	83,520.00
3	15" Combined Sewer, C76, CL-IV, Trench A	LF	0	170	170	120.00	20,400.00
4	12" Combined Sewer, C76, CL-IV, Trench A 10" Combined Sewer, PVC SDR 26, Trench A	LF	372	12	384	90.00	7,500.00
6	8" Combined Sewer, PVC SDR 26, Trench A	LF	10	0	10	85.00	850.00
7	12" Storm Sewer, C76, CL-IV, Trench A	LF	650	400	1,050	65.00	68,250.00
8	Re-Line Ex. 12"-15" Combined Sewer Sewer Service Tap. 6" to 12"	EA	825 20	0	825	1.250.00	26,250,00
10	Sewer Service Connection, 6" to 12"	EA	30	3	33	750.00	24,750.00
11	Sewer Service, 6" to 12"	LF	800	100	900	65.00	58,500.00
12	New 6'-0" Diameter Combined Manhole New 5'-0" Diameter Combined Manhole	EA	1	0	3	5,500.00	5,500.00
14	New 4'-0" Diameter Combined Manhole	EA	8	4	12	3,500.00	42,000.00
15	New 4'-0" Diameter Storm Manhole	EA	4	2	6	2,500.00	15,000.00
16	New 4'-0" Diameter Catch Basin	EA EA	8	4	12	2,500.00	30,000.00
18	6" Perforated Pipe Underdrain (No sock)	LF	640	320	960	20.00	19,200.00
19	Reconstruct Manhole (if & where needed)	VF	40	20	60	300.00	18,000.00
20	Remove Ex. Manhole	EA	10	3	13	600.00	7,800.00
21	Abandon Ex. Manhole	EA	8	1	9	350.00	3,150.00
23	Abandon Ex. Sewer (Including All Bulkheads)	LF	1700	155	1,855	15.00	27,825.00
	SUBTOTAL SEWER PAY ITEMS						\$ 686,155.00
	WATER MAIN PAY ITEMS						
24	12" D.I. CL54 Water Main w/Polywrap, Trench A	LF	1,430	640	2,070	\$ 105.00	\$ 217,350.00
25	8" D.I. CL54 Water Main w/Polywrap, Trench A	LF	455	0	455	95.00	43,225.00
26	o D.I. OL54 water Main w/Polywrap, Trench A 4" D.I. CL54 Water Main w/Polywrap. Trench A		325 35	0 42	325	85.00	27,625.00
27	12" Gate Valve & Box	EA	6	5	11	3,000.00	33,000.00
28	8" Gate Valve & Box	EA	2	1	3	2,000.00	6,000.00
29	Fire Hydrant Assembly, Complete	EA	5	0	5	4,500.00	22,500.00
30	New Water Service, 1-1/2" to 2" Type K Copper, Trench A	LF	200	0	200	4,000.00	4,000.00
32	New Water Service, 3/4" to 1" Type K Copper, Trench A	LF	100	260	360	45.00	16,200.00
33	6" Water Main Connection to Ex. 6" Water Main	EA	1	0	1	2,500.00	2,500.00
34	8" Water Main Connection to Ex. 8" Water Main 12" Water Main Connection to Ex. 12" Water Main	EA EA	2	2	4	3,000.00	12,000.00
36	Install Curb Stop and Box (Material Provided By City)	EA	8	4	12	300.00	3,600.00
36	Water Service Connection (8")	EA	2	0	2	2,500.00	5,000.00
37	Water Service Connection (6")	EA	3	0	3	2,000.00	6,000.00
30	Water Service Connection (4) Water Service Connection (1-1/2" to 2")	EA	12	6	18	1,000.00	18,000.00
40	Water Service Connection (3/4" to 1")	EA	12	6	18	750.00	13,500.00
41	Hydro Stop, 8"	EA	2	2	4	3,500.00	14,000.00
42	Abandon Water Mains, Entire Project	LS	0	0	4	4,500.00	18,000.00
	SUBTOTAL WATER MAIN PAY ITEMS					,	\$ 523,890.00
44	Station Grading	STA	14	5	19	\$ 4,500.00	\$ 85,500.00
45	Subgrade Undercutting	CY	500	125	625	30.00	18,750.00
46	Removing Brick Pavers	SY	700	200	900	12.00	10,800.00
47	Removing Concrete Sidewalk & Ramp (sawcutting included) Removing Pavement Full Depth (Curb & Gutter included)	SY	10500	2600	13.100	12.00	157.200.00
49	Cold Milling 2" Asphalt Pavement	SY	240	60	300	7.50	2,250.00
50	Bituminous Mixture No. 3C	TON	30	16	46	200.00	9,200.00
51	Aggregate Base, MDOT 21AA Limestone, 8"	SY	10461	1810	12.271	10.00	122,710.00
53	Concrete Pavement, Non-reinforced, 8", incl. integral Detail F2 Curb & Gutter	SY	9953	1720	11,673	50.00	583,650.00
54	Remove and Replace Concrete Curb & Gutter, 18" Wide	LF	30	20	50	40.00	2,000.00
55 56	Concrete Sidewalk, 4", Scoring Treatment	SF	33390	4560	37,950	5.00	189,750.00
57	Concrete Sidewalk, 6", Scoring Treatment (Includes Ramp & Drive Approaches)	SF	4500	300	4,800	6.00	28,800.00
58	Handicap Ramp Truncated Domes (per ramp)	SF	1000	0	1,000	35.00	35,000.00
59	Granite Pavers (For Tree Wells) eliminated item	EA	0	0	0	40.00	-
61	Maintenance Aggregate for Entire Project	LS	-	-	1	20,000.00	20,000.00
	SUBTOTAL PAVING PAY ITEMS						\$ 1,451,722.00
	GENERAL PAY ITEMS						
62	Traffic Maintenance & Control	LS	-	•	1	<u>\$ 150,000.00</u>	<u>\$ 150,0</u> 00.00
63	Traffic Signal Modernization (Hamilton, Maple, Brown)	LS	-	-	1	400,000.00	400,000.00
64 65	vvater and Sewer Allowance Salvage Existing Signs	LS	-	-	1	75,000.00	75,000.00
66	Sign Post, U-Channel	LF	240	60	300	6.00	1,800.00
67	Plywood Pedestrian Fence	LF	2600	700	3,300	20.00	66,000.00
68	Removing Street Light Foundation	EA	46	14	60	200.00	12,000.00
69 70	Removing Parking weter Post Waterbourne Pavement Markings, 4 inch	EA I F	5000	6 900	5.900	100.00	6,600.00 5 900 00
71	Waterbourne Pavement Markings, Symbols	EA	20	6	26	225.00	5,850.00
72	Waterbourne Pavement Marking, 24" Stop Bar	LF	370	130	500	4.00	2,000.00
73 74	vvaterbourne Pavement Marking, 12" Cross Hatching	LF FA	2000	480 0	2,480 0	2.00	4,960.00
75	Proposed Tree, 3" Cal	EA	50	15	65	500.00	32,500.00
76	Mulch & Planting Soil for Tree Plantings	CY	334	42	376	35.00	13,160.00
77	Parking Meter Post	EA	60	6	66	400.00	26,400.00
78 79	Inlet Sediment Pit	EA	12 12	/ 7	19	100.00	1,900.00
80	Road Closure Assessments	DAYS	-	-	100	1,500.00	150,000.00
\vdash	SUBTOTAL GENERAL PAY ITEMS						\$ 956,970.00
	STANDARD OPTION "A" UPGRADES						
1	Concrete Curb, 6" (exposed aggregate) - Planters	LF	3425	995	4,420	35.00	154,700.00
2	Sand-Based Structural Soil, assume 1000 cubic feet per tree	CY	1852	556	2,408	105.00	252,840.00
3	Additional Planting Soil for Planters, 6" Thick Ground Cover Plantings for All Planters	CY SF	125 6700	34 1800	159 8.500	35.00	5,565.00 59.500.00
	SUBTOTAL STANDARD OPTION "A" UPGRADES PAY ITEMS				2,000		\$ 472,605.00
\vdash							.
1		1		1	TC TC	TALESTIMATE:	54.091.342.00

NIC	Hadco Street Lights (DTE CHARGE TO CITY)) EA	46	14	60	9,000.00	540,000.00

This sheet for STANDARD upgrades: MKSA Option A >No Tree Grates, All Raised Planters w/Exposed Aggregate Curb Structural Soil
 Every other tree eliminated from MKSK Option A
 Maple holds City Standard Streetscape, except for Standard Upgrades >Excludes benches and other ammenities

PRELMINARY ENGINEER'S OPINION OF PROBABLE COST OLD WOODWARD & MAPLE STREET 2017 WORK - PRE-ENGINEERING w/ENHANCED UPGRADES OPTION B ISSUED 11/17/16

NO.		PAY UNIT	OLD WOODWARD	MAPLE	TOTAL QUANTITY	UNIT PRICE	TOTAL AMOUNT
1	24" Combined Sewer, C76, CL-IV, Trench A	LF	421	0	421	\$ 200.00	\$ 84,200.00
2	18" Combined Sewer, C76, CL-IV, Trench A	LF	464	0	464	180.00	83,520.00
3	15" Combined Sewer, C76, CL-IV, Trench A 12" Combined Sewer, C76, CL-IV, Trench A	LF	0	170 75	170 75	120.00	20,400.00
5	10" Combined Sewer, PVC SDR 26, Trench A	LF	372	12	384	90.00	34,560.00
6	8" Combined Sewer, PVC SDR 26, Trench A 12" Storm Sewer, C76, CL-IV, Trench A	LF LF	10 650	0 400	10 1.050	85.00 65.00	850.00 68.250.00
8	Re-Line Ex. 12"-15" Combined Sewer	LF	825	0	825	80.00	66,000.00
9	Sewer Service Tap, 6" to 12" Sewer Service Connection 6" to 12"	EA	20	1	21	1,250.00	26,250.00
11	Sewer Service, 6" to 12"	LF	800	100	900	65.00	58,500.00
12	New 6'-0" Diameter Combined Manhole	EA	1	0	1	5,500.00	5,500.00
13	New 4'-0" Diameter Combined Manhole	EA	8	4	12	3,500.00	42,000.00
15	New 4'-0" Diameter Storm Manhole	EA	4	2	6	2,500.00	15,000.00
10	New 2'-0" Diameter Inlet	EA	8	4	12	2,500.00	18,000.00
18	6" Perforated Pipe Underdrain (No sock)	LF	640	320	960	20.00	19,200.00
19 20	Reconstruct Manhole (if & where needed) Remove Ex. Manhole	VF EA	40	20	60 13	300.00	18,000.00 7.800.00
21	Remove Ex. Drainage Structure	EA	12	7	19	600.00	11,400.00
22 23	Abandon Ex. Manhole Abandon Ex. Sewer (Including All Bulkheads)	EA LF	8 1700	1 155	9 1.855	350.00 15.00	3,150.00 27.825.00
	SUBTOTAL SEWER PAY ITEMS				,		\$ 686,155.00
	WATED MAIN DAY ITEMS						
24	12" D.I. CL54 Water Main w/Polywrap, Trench A	LF	1,430	640	2,070	\$ 105.00	\$ 217,350.00
25	8" D.I. CL54 Water Main w/Polywrap, Trench A	LF	455	0	455	95.00	43,225.00
26 27	4" D.I. CL54 Water Main wPolywrap, Trench A 4" D.I. CL54 Water Main wPolywrap, Trench A	LF	325 35	42	325	85.00 70.00	<u>27,625.00</u> 5,390.00
27	12" Gate Valve & Box	EA	6	5	11	3,000.00	33,000.00
28 29	в сате valve & вох Fire Hydrant Assembly, Complete	EA EA	2 5	1 0	3 5	2,000.00	6,000.00 22.500.00
30	Remove & Replace Hydrant	EA	1	0	1	4,000.00	4,000.00
31	New Water Service, 1-1/2" to 2" Type K Copper, Trench A	LF	200	0	200	55.00	11,000.00
32	6" Water Main Connection to Ex. 6" Water Main	EA	1	200	<u> </u>	45.00 2,500.00	2,500.00
34	8" Water Main Connection to Ex. 8" Water Main	EA	2	2	4	3,000.00	12,000.00
35 36	12" Water Main Connection to Ex. 12" Water Main Install Curb Stop and Box (Material Provided By City)	EA EA	8	3 4	12	3,500.00	24,500.00
36	Water Service Connection (8")	EA	2	0	2	2,500.00	5,000.00
37	Water Service Connection (6") Water Service Connection (4")	EA FA	3	0	3	2,000.00	6,000.00
39	Water Service Connection (1-1/2" to 2")	EA	12	6	18	1,000.00	18,000.00
40	Water Service Connection (3/4" to 1")	EA	12	6	18	750.00	13,500.00
41	Hydro Stop, 8 Hydro Stop, 12"	EA	2	2	4	4,500.00	18,000.00
43	Abandon Water Mains, Entire Project	LS	0	0	1	10,000.00	10,000.00
	SUBTOTAL WATER MAIN PAY ITEMS						\$ 523,890.00
	PAVING PAY ITEMS						
44 45	Station Grading Subgrade Undercutting	STA CY	14 500	5 125	19 625	\$ 4,500.00	\$ 85,500.00 18,750.00
46	Removing Brick Pavers	SY	700	200	900	12.00	10,800.00
47	Removing Concrete Sidewalk & Ramp (sawcutting included) Removing Pavement Full Depth (Curb & Gutter included)	SY SV	3300	600	3,900	8.00	31,200.00
49	Cold Milling 2" Asphalt Pavement	SY	240	60	300	7.50	2,250.00
50	Bituminous Mixture No. 3C	TON	30	16	46	200.00	9,200.00
51	Aggregate Base, MDOT 21AA Limestone, 8"	SY	10461	1810	12,271	10.00	122,710.00
53	Concrete Pavement, Non-reinforced, 8", incl. integral Detail F2 Curb & Gutter	SY	7228	1720	8,948	50.00	447,400.00
54 55	Remove and Replace Concrete Curb & Gutter, 18" Wide Concrete Sidewalk, 4", Scoring Treatment	LF SF	30 0	20 4560	50 4.560	40.00	2,000.00
56	Concrete Sidewalk, 4", Exposed Aggregate	SF	0	2670	2,670	8.00	21,360.00
57	Concrete Sidewalk, 6", Scoring Treatment (Includes Ramp & Drive Approaches)	SF	0	300	300	6.00	1,800.00
59	Granite Pavers (For Tree Wells) eliminated item	EA	0	0	0	40.00	-
60	Adjust Structure Cover	EA	10	6	16	350.00	5,600.00
	SUBTOTAL PAVING PAY ITEMS			-	· ·	20,000.00	\$ 996,370.00
62	GENERAL PAY ILEMS Traffic Maintenance & Control	LS	-	-	1	\$ 150.000.00	\$ 150.000.00
63	Traffic Signal Modernization (Hamilton, Maple, Brown)	LS	-	-	1	400,000.00	400,000.00
64 65	Water and Sewer Allowance Salvage Existing Signs	LS	-	-	1	75,000.00	75,000.00
66	Sign Post, U-Channel	LF	240	60	300	6.00	1,800.00
67	Plywood Pedestrian Fence	LF	2600	700	3,300	20.00	66,000.00
69	Removing Sireer Light Foundation	EA	46 60	6	66	200.00	6,600.00
70	Waterbourne Pavement Markings, 4 inch	LF	5000	900	5,900	1.00	5,900.00
71 72	vvalerbourne Pavement Markings, Symbols Waterbourne Pavement Marking, 24" Stop Bar	EA LF	20 370	6 130	26 500	225.00 4.00	5,850.00
73	Waterbourne Pavement Marking, 12" Cross Hatching	LF	2000	480	2,480	2.00	4,960.00
74 75	T ree Protection, 3" Dia. To 20" Dia . eliminated item Proposed Tree. 3" Cal	EA FA	0	0	0	100.00 500.00	-
76	Mulch & Planting Soil for Tree Plantings	CY	334	42	376	35.00	13,160.00
77	Parking Meter Post	EA	60	6	66	400.00	26,400.00
78	Inlet Sediment Pit	EA	12	/ 7	19	100.00	1,900.00
80	Road Closure Assessments	DAYS	-	-	100	1,500.00	150,000.00
<u> </u>	SUBTUTAL GENERAL PAY ITEMS						\$ 956,970.00
	ENHANCED OPTION "B" UPGRADES						
1	Pvmt, Brick on HMA Bed on Conc Base, Xwalks, Turn Lanes & 2' Parking Strip Granite Curb, 6" Flush to Pavement (Maple Intersection only)	SY IF	2725	0	2,725	\$ 150.00	408,750.00
3	Concrete Curb, 6" (exposed aggregate) - Planters	LF	0	1535	1,535	35.00	53,725.00
4	Granite Curb, 5", Mounted on Sidewalk - Planters	LF	3525	0	3,525	55.00	193,875.00
5 6	Concrete Sidewalk, Buff Wash, Old Woodward Only	SF SF	34105	0	34,105	8.00	272,840.00
7	Granite Bollards	EA	40	0	40	1,500.00	60,000.00
8	Sand-Based Structural Soil, assumes 1000 cubic feet per tree Additional Planting Soil for Planters, 6" thick	CY CY	1852 125	556 80	2,408 205	105.00 35.00	252,840.00 7.175.00
10	Ground Cover Plantings for All Planters	SF	6700	4300	11,000	7.00	77,000.00
	SUBTOTAL ENHANCED OPTION "B" UPGRADES PAY ITEMS						\$1,597,705.00
<u> </u>		1			то	TAI ESTIMATE:	\$4,761,090,00

NIC Hadco Street Lights (DTE CHARGE TO CITY)	EA	46	14	60	9,000.00	540,000.00
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This sheet for ENHANCED upgrades: MKSA Option B

All Raised Planters w/Granite Curb on Old Woodward
All Raised Planters w/Granite Curb on Old Woodward
Road Granite Curb at Maple/Old Woodward adjacent to brick paver pavement
Brick Paver Sidewalks
Buff Wash Sidewalks elsewhere on Old Woodward
Structural Soil
Cure of the trace diministrat from M/SK Option B.

Severy other tree eliminated from MKSK Option B
 Maple holds City Standard Streetscape, except for Enhanced Upgrades
 Excludes benches and other ammenities

This Bike Lane Can Save Your Life

If a city makes riding safe and convenient, a magical thing happens.

Peter Coy petercoy

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BloombergBusinessweek

November 7, 2016 - 6:00 AM EST

Adding bike lanes makes a city healthier—even for people who never climb on a bicycle.

Bicycle lanes have been a contentious issue in many U.S. cities, pitting motorists who say there's no room for more bikes against two-wheel enthusiasts preaching the health benefits of leaving the car at home. But if you lay down enough bike lanes, something magical begins to happen: Non-riders begin to benefit from cleaner air when the network of bike lanes gets complete enough that people start riding bikes to work instead of driving.

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Peter Alexander Muennig.

Less-comprehensive networks don't reduce air pollution because people use the lanes only for pleasure riding, which doesn't displace driving to work, says Babak Mohit, a post-doctoral researcher at Columbia University's Mailman School of Public Health and lead author of a study published online by the journal *Injury Prevention*. Additionally, bike lanes make existing riders safer and attract new riders, who get cardiovascular benefits from exercise, according to Mohit and his co-authors, Jing Gu and

Cities are embracing the idea. According to an <u>article</u> last year by consulting firm McKinsey & Co., "London is building 12 'cycle superhighways'—extra-wide lanes dedicated to bicycles." McKinsey also cites New York, hilly San Francisco, Sao Paulo, Delhi, and even Moscow as cities that are expanding bike-lane networks.

There's math to show how cost-effective the strategy could be for public health. When New York mont about \$2 million in 2015 on bike lane expansion, the cost per additional "quality-adjusted life

\$1,300, according to the Mailman paper.

This Bike Lane Can Save Your Life - Bloomberg

A QALY, pronounced "qually," is a standard measure of cost-benefit analysis. It takes into account the number of people who benefit from an intervention, how many years of extra life they can expect to get, and how healthy they will be during the extra years.

As it turns out, when you apply this to bike lanes, it makes them more economical per added QALY than, say, kidney dialysis, which costs over \$100,000 per QALY—although not quite as cost-effective as standard vaccines, which cost in the low hundreds of dollars per QALY, Mohit said.

That's not an argument for yanking people off dialysis machines and using the money to build bike lanes, but it does support the idea that "investments in bike lanes are more cost-effective than the majority of preventive approaches used today," the paper states.

"While we use NYC as an example, our intent is to provide a much more generalisable model, such that localities can estimate the return on their investment in bike paths," the authors write.

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