ROAD SAFETY AUDIT

Newport Avenue at Beale Street

City of Quincy

February 28, 2019

Prepared For:
MassDOT

On Behalf Of:
City of Quincy

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Background

The Federal Highway Administration (FHWA) defines a Road Safety Audit (RSA) as the formal safety examination of an existing or future road or intersection by an independent, multidisciplinary team. The purpose of an RSA is to identify potential safety issues and possible opportunities for safety improvements considering all roadway users. This RSA evaluates the intersection of Newport Avenue and Beale Street in Quincy, Massachusetts. Newport Avenue and Beale Street are under the jurisdiction of the City of Quincy. A key objective of the RSA is to identify both short-term and long-term safety improvements that can be made at the subject intersection.

MassDOT has identified two Highway Safety Improvement Program (HSIP) crash clusters between 2013 and 2015 within the study area, indicating that the location falls within the top 5% of High Crash Locations within the Metropolitan Area Planning Council (MAPC) area. The first cluster is the intersection of Newport Avenue and Beale Street and the second is the section on Newport Avenue between Beale Street and Brook Street. The intersection of Newport Avenue and Beale Street was also identified to be in 2012-2014 and 2011-2013 HSIP clusters, 2005-2014 and 2004-2013 pedestrian clusters.

The project is directly adjacent to the MBTA Wollaston Station that serves red line rapid transit. The station was closed in 2018 for renovations and is planned to be reopened in summer of 2019.

Project Data

An RSA was completed for Newport Avenue and Beale Street on Thursday, December 6, 2018, and included the adjacent intersection of Beale Street and Old Colony Avenue. The agenda for the RSA meeting held at Quincy City Hall is provided in Appendix A of this report. As shown below in Table 1, the audit team consisted of a multidisciplinary team with representatives from state, regional and local agencies providing expertise in the engineering, planning, and maintenance fields. Contact information for the audit team members is provided in Appendix B of this report.

Within the email invitation sent on November 29, 2018 to each participant in the RSA, background material was provided. This information included collision diagram and crash data summary for the study locations. During the RSA meeting, these materials were reviewed as a group prior to the field visit to the locations. During the RSA field visit, various safety issues were observed and identified. Following the RSA field visit, the team returned to discuss additional concerns and potential solutions for the existing safety issues.

Table 1: Participating Audit Team Members

Audit Team Member	Agency/Affiliation
Allison Ruel	Quincy –Traffic
Linda Lally	MBTA
Ana Fill	MassDOT– Traffic Safety Section
Michelle Deng	MassDOT – Traffic Safety Section
Jim Walsh	Quincy Planning
Robert Ballesty	MassDOT– District 6
David Derrig	AECOM
Michael Wulforst	AECOM
Isaac Almy	AECOM

The crash summary table and collision diagrams were based on crashes reported by Quincy Police Department for a three-year period between January 2015 and December 2017. The crash data was supplemented and cross-checked with MassDOT Crash Portal data.

There were a total of 77 crashes reported in the study area between January 2015 and December 2017. Of these, 27 (35 percent) were angle crashes and 27 (35 percent) were rear-end crashes. The crash data included two crashes involving pedestrians. A total of 14 (18 percent) of the crashes occurred between 2:00 PM and 4:00 PM, which was the highest 2-hour period for crashes. There were 17 nighttime crashes (occurring between 8:00 PM and 6:00 AM) and accounted for 22 percent of all crashes. A total of 32 crashes (42 percent) occurred during the winter months (December, January, February, and March). Similarly, 30 crashes (39 percent) occurred during summer months (June, July, August, and September). The day with the highest percent of crashes was Thursday (22 percent). A total of 28 crashes (36 percent) occurred under dark conditions and 17 crashes (22 percent) occurred under when roadway surface conditions were wet, snow, or ice.

Project Location and Description

The Audit location focuses on the intersection of Beale Street and Newport Avenue in Quincy, MA. The area includes the adjacent intersection of Old Colony Avenue and Beale Street as well as the segment of Newport Avenue up to but not including the intersection of Brook Street. In 2018, the average weekday traffic on Newport Avenue was approximately 22,400 vehicles per day (vpd). In 2017, the average weekday traffic on Beale Street was approximately 10,100 vpd.

It should be noted that, at the time of this Road Safety Audit, the Wollaston Station Improvement Project was underway and the station was under full closure. To accommodate the station closure, Red Line shuttle buses are being provided and stop along Newport Avenue northbound in front of the station and along Newport Avenue southbound, approximately 150 feet south of Beale Street. It is reasonable to assume that the typical traffic, pedestrian, and cyclist activities at the intersection are potentially being affected by the temporary construction conditions described above, and those conditions will change

again once the project is completed and the station is re-opened. Specifically, it is anticipated that pedestrian activity related to Wollaston Station will increase once the station re-opens.

The posted speed limit along Newport Avenue within the study area is 30 miles per hour (mph) in both northbound and southbound directions. The speed limit for Beale Street within the study area is 25 mph in the eastbound and westbound directions. The study area is shown in **Figure 1** and described in the sections to follow.

Intersection

Newport Avenue at Beale Street/Grandview Avenue is a four-legged signalized intersection located west of Hancock Street (Route 3A) in the City of Quincy and is adjacent to the MBTA Red Line Wollaston Station. As previously mentioned, the Wollaston Station Improvement Project is current underway, and as part of the project one northbound through lane of Newport Avenue has been temporarily closed in the vicinity of the station for construction purposes. As a result, the Newport Avenue northbound lane configuration approaching Beale Street has been reconfigured from one through and one shared through/right-turn lanes to one through lane and one right-turn-only lane.

Newport Avenue runs in the north-south direction with Beale Street intersecting in the east-west direction. Newport Avenue and Beale Street are both classified as urban minor arterials. Grandview Avenue is classified as a local roadway and merges with Beale Street at the eastbound approach of the intersection of Newport Avenue and Beale Street. The Newport Avenue northbound approaches and the Beale Street eastbound approach each include a median island. A median island that had been formally located on the northern leg of Newport Avenue had been recently removed and paved over at the time of the audit. Travel lane designations are provided by pavement markings for the westbound approach (Beale Street) and the southbound (Newport Avenue) left turn lane. The westbound approach consists of a left-turn lane, thru-lane, and right-turn lane. None of the other approaches have travel lane designations.

The intersection is signalized with signal heads mounted to mast arms and with the bases located on three corners of the intersection. Newport Avenue northbound has two overhead signal heads located on the mast arm and one post mounted signal head located at the far side of the intersection. Newport Avenue southbound has three overhead signal heads located on the mast arm. Beale Street eastbound has one overhead signal head and a post mounted signal head located on the near side of the intersection. Beale Street westbound has one overhead signal head and one signal head located on the mast arm on the far side of the intersection, and one post mounted signal head located on the far side of the intersection. Pedestrian signal heads are located at each corner of the intersection. This signal does not have an emergency vehicle preemption system.

The signal phasing for the intersection is as follows:

- Exclusive pedestrian phase;
- Newport Avenue southbound;
- Newport Avenue northbound and southbound;
- Beale Street westbound;
- Beale Street eastbound and westbound.
- Emergency Vehicle Preemption (EVP) is not provided at this intersection.

Sidewalks are provided along each approach of the intersection with the exception of the eastern side of the Newport Avenue south leg. Crosswalks are present across all legs of the intersection. The northeast corner of the intersection crossing the north and east legs, the northwest corner of the intersection crossing the north leg, and the southeast corner of the intersection crossing the east leg do not have curb ramps. The southeast corner of the intersection crossing the south leg and the northwest corner of the intersection crossing the west leg have curb ramps without tactile warning strips. The southwest corner of the intersection has a curb ramp with tactile warning strip. No bicycle facilities are provided along any of the intersection roadways.

Transit service at the intersection normally includes the MBTA Red Line Wollaston Station, with a secondary access located on Newport Avenue approximately 400 feet north of Beale Street. Access to the station's primary entrance and direct access to its parking facility is located along the northern sidewalk of Beale Street, approximately 200 feet east of Newport Avenue. As mentioned previously, the station was closed at the time of the Road Safety Audit and service was replaced by shuttle buses. Normal bus service in the vicinity of the intersection includes MBTA bus route 211, which is served by one stop located along Newport Avenue southbound approximately 150 feet south of Beale Street, for outbound service to Quincy Center and one stop providing inbound service from Quincy Center located along westbound Beale Street, approximately 250 feet west of Newport Avenue.

There is a fire station located at 111 Beale Street and operated by Quincy Fire Department. The station's driveway is on Beale Street, approximately 160 feet west of Newport Avenue. An emergency vehicle signal preemption system is not provided at the intersection of Newport Avenue and Beale Street.

Wollaston Elementary School is located at 205 Beale Street, approximately 1,300 feet west of Newport Avenue. A crossing guard is provided at the intersection of Newport Avenue and Beale Street on school days in both the morning ingress and afternoon egress periods for the school.

Beale Street at Old Colony Avenue is a three-legged stop-controlled intersection located northeast of the Newport Avenue and Beale Street intersection. The intersection operates as a stop-controlled intersection with Beale Street having a flashing yellow and Old Colony Avenue having flashing red. All signal heads are post mounted at each corner of the intersection with each leg having two signal heads facing it. The signal head on the southwest corner of the intersection is facing the incorrect direction and shows flashing yellow to the Old Colony Ave northbound approach instead of flashing red. Old Colony Avenue runs in the north-south direction with Beale Street intersecting in the east-west direction. Beale Street is classified as an urban minor arterial while Old Colony Avenue is classified as a local roadway; both are under City jurisdiction. Travel lane designations are not marked. Beale Street has a significant uphill grade in the westbound direction. Pedestrian sidewalks are featured along both sides of Beale Street and Old Colony Avenue. There are no pedestrian crossings across Beale Street.

Old Colony Avenue consists of mostly residential property with a few commercial properties near the intersection with Beale Street.

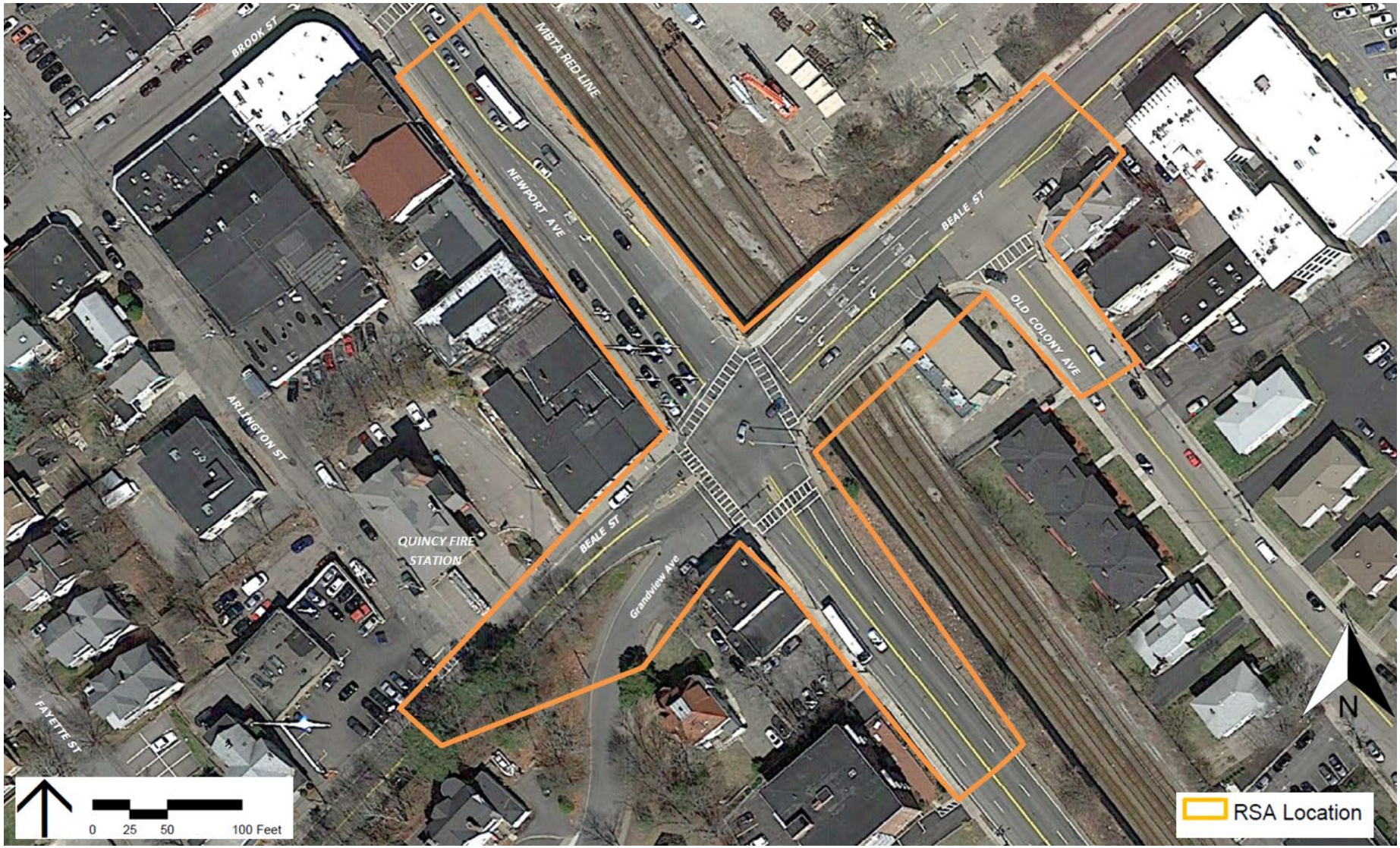


Figure 1 - Locus Map – Newport Avenue at Beale Street, Quincy

Audit Observations and Potential Safety Enhancements

The audit participants received an introduction to the RSA process, a summary of existing geometry, signal operations, and crash history data. The audit team then discussed safety concerns at the study intersection before traveling by car to the intersection to participate in field observations. The general safety issues identified by the audit team were:

- Intersection geometry and operations
- Signs, lighting, and pavement markings
- Traffic signal equipment
- Emergency vehicle accommodations
- Bicycle and pedestrian accommodations

Figure 2 - Audit team members on site. Northbound Newport Avenue at Beale Street

The following sections discuss in detail the safety issues and potential enhancements that were identified during the RSA. It should be noted that current, applicable design standards referenced throughout the report include but are not limited to the MUTCD, Americans with Disabilities Act, MassDOT and the City of Quincy standards and specifications; in addition, consideration should be given to applicable local, state, and national guidelines. Several of the issues identified require further study and engineering judgement to determine the feasibility of implementing the improvements to address them.

Safety Issue #1: Intersection Geometry and Operations

Observations:

Newbury Avenue at Beale Street: Eastbound Approach

The Beale Street eastbound approach is intersected by the one-way out Grandview Avenue. This creates an approach approximately 42 feet wide, which is wide enough for three to four vehicles with no lane markings provided (**Figure 3**). Vehicles coming from Grandview Avenue and wanting to continue through or make a left turn onto Newport Avenue must force their way to the

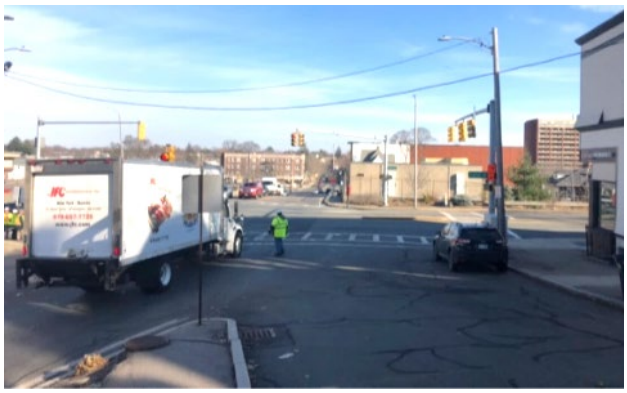


Figure 3 - Beale Street EB with Grandview Avenue merge.

left side of the approach in a span of approximately 40 feet before they enter the intersection. If they are unable to merge in this short distance, two vehicles are likely to continue through the intersection side-by-side, even though there is only one eastbound receiving lane. There are no stop or yield signs present for the Grandview Avenue approach. Further, while the receiving lane for eastbound through vehicles is intended for one lane of traffic, it is un-marked and approximately 22 feet wide, which is sufficient to fit two through vehicles and is facilitating this driver behavior. The audit team observed that this results in confusing and inconsistent travel patterns for eastbound traffic and makes it difficult for westbound left-turning vehicles to judge if the opposing eastbound traffic is going through, turning left, or turning right. This is a key factor contributing to the four instances of a westbound left-turning vehicle being struck as it turned in front of an eastbound through or right-turning vehicle.

The audit team noted that it is unclear where vehicles should queue when making an eastbound through or right-turn movement due to the offset geometry created by Grandview Avenue, and exacerbated by the lack of lane markings on the eastbound approach. This can result in two vehicles attempting a right turn side-by-side, as supported by crash records indicating a side-swipe crash between two vehicles making eastbound right turns simultaneously. According to audit members, local traffic on Grandview Avenue has increased due to GPS's re-routing vehicles through neighborhoods to avoid congestion on Newport Avenue.

The eastbound visibility on Beale Street of oncoming westbound traffic is limited due to the hill crest on the east leg of Beale Street. This was discussed to be a contributing factor to the four recorded angle collisions between eastbound left turns and vehicles traveling through westbound, as well as one recorded angle crash between eastbound left turns and westbound right turns. In both of these crash types, eastbound left turning vehicles must yield to opposing westbound traffic. Therefore, these five crashes in total support the observation that visibility limitations make it difficult for eastbound left-turning vehicles to determine when it is safe to turn.

Newport Avenue at Beale Street: Northbound Approach

The Newport Avenue northbound left turn to Beale Street westbound was observed to have low volume relative to other turning movements, with 2018 count data indicating 15 vehicles per hour and 38 vehicles per hour in the AM and PM peak hours, respectively. The movement is given a green ball and must yield to the oncoming southbound traffic. The southbound through traffic is a higher volume and northbound vehicles turning left will queue while waiting for a gap, which blocks a northbound through lane (**Figure 4**). The permissive only northbound left turn condition is a key factor contributing to the five collisions reported between northbound left turns and southbound though

Figure 4 - Northbound vehicles making left turn to Beale Street

vehicles. The intermittent blockage of the northbound through lane by left-turning vehicles may also be a contributing factor for the six rear-end collisions and one side-swipe collision on the Newport Avenue northbound approach.

Figure 5 – Newport Avenue Northbound queueing reaching hill crest south of intersection.

The audit team observed that there is a slight hill crest approaching the signal on Newport Avenue northbound. The signal is difficult to see at distance and queues can extend beyond the crest of the hill, which was noted by the audit team as a safety concern given the high rates of speed, downward sloping roadway, the fact that there are no signs warning of a signal ahead, and the northbound queueing (**Figure 5**). Speed is a potentially a factor for the six rear-ends collisions on the Newport Avenue northbound approach. The audit team observed that the signal clearance times for red and yellow may be too short at the intersection due to the steep grades on some approaches and higher vehicle speeds. Queue lengths for northbound traffic on Newport Avenue at Brook Street would occasionally back up to Beale Street (**Figure 6**).

Figure 6 – Northbound traffic queuing back from Brook Street

Newport Avenue at Beale Street: Southbound Approach

The audit team observed that Newport Avenue southbound left-turning traffic can queue further back than the left-turn storage lane, which is approximately 150 feet in length (**Figure 7**). As a result one of the through lanes is blocked in the vicinity of Brook Street. A blocked through lane due to queueing spillover can contribute to sideswipe collisions, as drivers change lanes to try to drive around the blockage. Additionally, rear-end collisions can be attributed to this condition as well, as southbound through traffic may need to stop suddenly to accommodate downstream lane changes, or if a driver is caught off-guard by the unexpected lane blockage. This queueing condition is also indicative of congested conditions, which can lead to driver frustration and aggressive driving. Finally, the steep grade of this approach may contribute to drivers having to accelerate more quickly making it difficult to stop suddenly, if needed. As previously mentioned, the signal clearance times for red and yellow may be too short at the intersection. These are all potential factors in the nine collisions involving rear-end and/or sideswipes along the southbound approach.

Figure 7 – SB left turn queue exceeding storage capacity

Intersection Turning Radius

A median island that had been formally located on the northern leg of Newport Avenue had been removed and paved over at the time of the audit. The southern leg of the intersection is separated by a median island. The audit team observed a passenger vehicle driving over the median while trying to make the left turn and the median appeared to be heavily cracked, indicating that it has been struck many times in the past, as shown in **Figure 8.** The audit team observed that larger vehicles turning left had a difficult time consistently navigating around the median island, which is extended approximately 18 feet into the intersection from the southern crosswalk. This is creating a sharper turn for the westbound left-turning vehicles and may not be sufficient for larger vehicles.

The Beale Street westbound right turn to Newport Avenue northbound also appears to potentially have an insufficient turning radius and was observed to be particularly challenging for trucks and buses making this turn. This was potentially a factor for the one angled collision between westbound right-turning vehicles and eastbound left-turning vehicles, as a westbound right turning vehicle may not be able to maintain its path to the right-most northbound receiving lane on Newport Avenue, and will thereby need to turn into the path of an eastbound left turning vehicle. Furthermore, the light pole on the northeast corner appears to have been struck in the past, which further supports the observed turning radius constraints.

Figure 8 - Damaged median island on southern leg of Newport Avenue

It was noted by the audit team that the southbound right turn may have an insufficient turning radius as it is also constrained by the median island on the west leg of Beale Street. The northwest corner was observed to have heavy cracking, indicative of vehicles running over the sidewalk. The need to utilize space outside the right-turn lane may have contributed to the sideswipe crash reported at this corner.

It was also noted by the audit team that the northbound right turn may have an insufficient turning radius as it constrained by the southeast corner and the westbound left turn lane on Beale Street. There were two crashes involving northbound right turns striking vehicles queued in the westbound left turn lane and it was noted that the fire box on this corner has been struck in the past.

Beale Street at Old Colony Avenue

The intersection of Old Colony Avenue and Beale Street was observed to have sight distance limitations for vehicles turning from Old Colony Avenue. The primary sight distance constraints for this movement are the buildings on the southwest and southeast corners of the intersection. Vehicles were observed encroaching into the intersection before making a turn to overcome this limitation (**Figure 9**). When a vehicle on Old Colony Avenue northbound moves past the stop bar to extend their visibility, the steep grade on Beale Street becomes an additional sight distance constraint. It was noted by audit participants that there is a vehicle desire line from Old Colony Avenue to continue north on Newport Avenue, requiring vehicles to cross over to the rightmost lane on Beale Street. In addition, the audit team noted that Old Colony Avenue is a popular cut-through route from Hancock Street to Newport Avenue and that the stop-control may not be sufficient to accommodate the traffic volume. The sight distance constraints and prevailing traffic patterns for cut-through volumes are all potentially factors for the nine angle crashes at this intersection.

Figure 9 - Vehicles turning out of Old Colony Avenue

Potential Enhancements:

1. Consider providing a left-turn lane for Beale Street eastbound and clearly designate the eastbound through lane to eliminate the inconsistent lane usage on the eastbound approach that creates confusion between eastbound through traffic and westbound left turns. In conjunction, align the eastbound through lane with the receiving lane on the east leg of the intersection.

2. Consider options for closing or reconfiguring Grandview Avenue egress at Beale Street to provide a formalized eastbound approach and eliminate the merge condition at the intersection that creates confusion on this approach. In conjunction with reconfiguration or closure of Grandview Avenue, consider expanding sidewalks on the southwest corner to shorten the length of the western crosswalk. If Grandview Avenue is to remain open, evaluate stop or yield signs to designate which road has the right of way.

3. Evaluate prohibiting Newport Avenue northbound left turns to remove conflicts between the permissive northbound left turn movement and the southbound through movement. As part of a feasibility evaluation, assess the potential routing and impacts of diverted left-turn traffic.

4. Evaluate potential to add left turn bay for Newport Avenue northbound left turn through combination of roadway widening or removal of the median island to reduce northbound through lane blockages caused by left turns. In conjunction, evaluate potential for a protected left-turn phase.

5. Re-evaluate the function and design of all median islands (Beale Street west leg and Newport Avenue south leg) to address insufficient turning radii. In conjunction, evaluate feasibility of widening median islands to serve as formal pedestrian refuge islands through reconfiguration of lane use and signal timings. If median removal is considered, evaluate pedestrian crossing times to ensure pedestrian needs are met.

6. Evaluate southbound left turn storage length in conjunction with evaluation of formalizing southbound through lane shift at the opening of the turn bay in order to reduce through lane blockages. Consider lengthening turn bay to accommodate queues and slow uphill movement that limits throughput of the approach.

7. Evaluate all turning paths at the intersection (check conflicts with concurrent movements, curbs, and medians) to inform a redesign of curb and lane geometry in order to reduce the instances of vehicles overrunning sidewalks and medians and to eliminate conflicts between opposing turning movements.

8. Evaluate stopping sight distance constraints and signal warrants at the intersection of Old Colony Avenue and Beale Street to determine if the current stop control is appropriate. In conjunction, consider providing a signalized pedestrian crossing of Beale Street at Old Colony Avenue to accommodate the pedestrian desire line from Old Colony Avenue to Wollaston Station. If the intersection remains under stop control, consider providing a supplemental stop sign for Old Colony Avenue northbound at Beale Street.

9. Evaluate signal coordination along Newport Avenue including Beale Street and Brook Street to reduce congestion along Newport Avenue.

10. Evaluate signal timings for pedestrians and vehicle phases, check clearance intervals to ensure the signals are operating in an efficient and safe manner.

Safety Issue #2: Signs, Lighting and Pavement Markings

Observations:

The audit team observed that light poles are located along or adjacent to each of the four corners of the intersection of Beale Street and Newport Avenue; however, due to the size of the intersection, the current lighting may not be adequate. The audit team noted that a relatively high proportion (22 percent) of crashes occurred at night, indicating that lighting may have been a contributing factor.

The median island on Newport Avenue northbound does not have any movement regulation signs. The audit team noted that a small in-street sign, possibly previously located on the median, was located on the sidewalk. The audit team noted that there is no movement regulation signs for the median island on the south leg Newport Avenue, even though they are provided at the median island on the west leg of Beale Street.

Figure 10 - Lane movement markings not provided for Beale Street eastbound

The audit team noted that all pavement markings, including crosswalks, were heavily worn with limited visibility. For approaches that have lane use markings (i.e. arrows) the markings were difficult to see. The eastbound approach does not have any lane markings (**Figure 10**), which results in driver confusion, and leads to turning movement being made from varying locations rather than in a fixed lane. This is potentially a factor for the four recorded angle collisions between eastbound left turns and vehicles traveling westbound, as well as the one recorded angle crash between eastbound left turns and westbound right turns.

The northbound approach has defined lanes with pavement markings but does not provided lane use information (i.e. arrow markings). The southbound through lanes also do not have any lane use markings; however the left-turn storage lane is marked. A lane use control sign is provided at the intersection for the northbound right turn lane and was a temporary condition related to construction at Wollaston Station. This sign was generally ignored by northbound traffic, which operated as two through lanes and merged to a single northbound lane north of the intersection. The only other lane use control sign provided at the intersection is for the westbound left-turn lane, through lane, and right-turn lane. On the Newport Avenue southbound approach, the lack of lane use signage and worn pavements markings results in through vehicles being trapped in the left-turn lane, creating sudden lane changes, and is potentially a factor in the nine collisions involving rear-end and/or sideswipes along the southbound approach. The general lack of effective signage or pavement markings, either through omission or worn markings is potentially a factor in the 18 total side-swipe collisions at the intersection, as vehicles are unsure which lane to be in, resulting in erratic and sudden lane changes.

The receiving lane for the eastbound through traffic on Beale Street is marked as a single wide lane; however, it is un-marked and approximately 22 feet wide, which is sufficient to fit two through vehicles. The audit team observed that this often results in two lanes of eastbound through traffic and makes it difficult for westbound left-turning vehicles to judge if the opposing eastbound traffic is going through, turning left, or turning right. This is a key factor contributing to the four collisions involving a westbound left-turning vehicle being struck as it turned in front of an eastbound through or right-turning vehicle. Additionally, the two-lane eastbound through traffic on Beale Street must then merge downstream near Old Colony Avenue - a location noted as having sight distance constraints for vehicles turning from Old Colony Avenue. The inconsistent merging pattern on Beale Street eastbound in the vicinity of Old Colony Avenue make it more difficult for drivers trying to turn from Old Colony Avenue onto Beale Street to judge gaps in traffic, and is a contributing factor to the nine angle crashes at this intersection. The audit team also observed that the Old Colony Avenue street sign is outdated and difficult to see.

Figure 11 - "No Right Turn on Red" sign (circled)

The audit team observed that the westbound and southbound approaches each have a "No Right Turn On Red" sign that is difficult to see due to its location mounted high on the far side of the intersection and may be resulting in driver non-compliance (**Figure 11**).

Potential Enhancements:

1. Consider providing dotted left-turn extension pavement markings to guide left turning vehicles through the intersection.

2. Consider providing lane use markings to designate each lane movement, to provide clear lane use assignment to motorists.

3. Consider formalizing/narrowing Beale Street eastbound receiving lane to one lane by restriping/hatching the shoulder or installing new curbing. In conjunction, evaluate potential for shortening the eastern pedestrian crossing of Beale Street, and widening the sidewalk on the south side of this approach.

4. Consider providing an advanced warning sign "RED SIGNAL AHEAD" on Newport Avenue northbound before roadway crest.

5. Evaluate placement and visibility of "NO TURN ON RED" signs on both southbound and westbound approaches. In conjunction, evaluate if No-Turn-on-Red restrictions would be warranted on the northbound and eastbound approaches.

6. Consider adding signage demarcating the median island on Newport Avenue with MUTCD compliant permanent signs ("KEEP RIGHT" sign).

7. Consider adding lane use control signs upstream of each approach.

8. Evaluate placement and adequacy of street lighting at the intersection.

9. Consider replacing Old Colony Avenue street name sign.

Safety Issue #3: Traffic Signal Equipment

Observations:

The audit team observed that all traffic signal heads lacked sufficient back plates and were difficult to see, noting sun glare as a significant issue. The eastbound approach from Grandview Avenue/Beale Street had one overhead signal and one near-side post mounted signal. The audit team observed that there was a missing signal head from the mast arm that would face the eastbound approach. At the intersection of Old Colony Avenue and Beale Street it was observed that a post mounted flashing yellow signal was facing Old Colony Avenue but should have been facing Beale Street westbound (**Figure 12**).

Figure 12 - Flashing yellow facing the wrong direction (Old Colony Avenue)

Potential Enhancements:

1. Consider providing back plates with retroreflective strips on all signal heads, including flashing signals at Old Colony Avenue, to provide better visibility of the signals.

2. Consider replacing missing signal head facing Grandview Avenue.

3. Evaluate use of flashing yellow arrow signal for permissive phases of protected/permitted left turns.

4. Re-install flashing signal on the southwest corner of Old Colony Avenue and Beale Street intersection so flashing yellow is facing Beale Street westbound.

5. Consider providing an overhead traffic signal head for each lane to improve visibility.

Safety Issue #4: Emergency Vehicle Accommodations

A fire station operated by Quincy Fire Department (QFD) is located at 111 Beale Street within the RSA study area. The station's driveway is on Beale Street, approximately 160 feet west of Newport Avenue (**Figure 13**) and as such fire trucks will frequently travel through the signal at Newport Avenue and Beale Street. The audit team noted that emergency vehicle signal preemption is not provided at the intersection of Newport Avenue and Beale Street, which creates safety issues for motorists and first-responses, Given the close proximity of the fire station to the signal, this is a consistent issue faced by fire trucks. To understand the unique issues faced by QFD, a description of emergency vehicle operations and issues was provided to the audit team by QFD personnel.

Figure 13 - Fire Station driveway on the north side of Beale Street, west of Newport Avenue

In addition to the lack of emergency vehicle preemption, QFD noted that congestion along eastbound Beale Street frequently blocks the fire station driveway and their eastbound egress route through the intersection. As a result, fire trucks responding to an incident will often run against the flow of traffic in the single westbound lane of Beale Street, which is a safety issue for both firefighters and motorists due to the lack of signal preemption. Further, it was also observed by QFD that eastbound traffic on Beale Street will sometimes move into the intersection and block traffic on Newport Avenue in order to make space for a departing fire truck, creating a conflict with traffic on Newport Avenue. The contraflow operations of fire trucks at the intersection are not limited to eastbound travel on Beale Street at the station driveway, and a fire truck was observed traveling contraflow on the eastern leg as well to circumvent stopped vehicles (**Figure 14).**

QFD noted that returning fire trucks are required to back in to the station; a process which requires stopping the fire truck on Beale Street for approximately 1-2 minutes and is not aided by traffic control. This is a safety issue for both the firefighters standing in moving traffic and the motorists on Beale Street who try to navigate around the fire truck. The audit team noted there is one sign located on westbound Beale Street alerting motorist of the presence of the fire station. As previously noted, there are no signal control accommodations for fire trucks, nor are there pavement markings at the fire station driveway

Figure 14 - Fire truck running contraflow through the intersection

Potential Enhancements:

1. Consider upgrading the traffic signal at Newport Avenue and Beale Street to include emergency vehicle pre-emption, to accommodate emergency vehicle movement at the intersection.

2. Consider providing Quincy Fire Department (QFD) with an in-station signal preemption control for the signal at Newport Avenue and Beale Street, to be triggered by QFD personnel when a fire truck is departing the station. The purpose of this control would be to clear traffic along Beale Street eastbound (provide a green signal to Beale Street eastbound) while holding all other traffic. By clearing the queue on Beale Street in advance, this would eliminate the existing need for fire trucks to run contraflow in the westbound lane of Beale Street when exiting the station. This would also address the unsafe condition created when motorists stopped at the Beale Street eastbound approach cross onto Newport Avenue to provide space for a departing eastbound fire truck.

3. Consider adding a traffic signal to stop traffic along Beale Street at the fire station driveway. In conjunction, provide QFD with the ability to activate the signal from within the station to facilitate safe ingress and egress fire truck operations.

4. Consider adding "Keep Clear" pavement markings and "Do Not Block" signage indicating that motorists shall not block the fire station driveway to prevent blockages of the fire station driveway and to facilitate safe ingress and egress fire truck operations.

Safety Issue #5: Bicycle and Pedestrian Accommodations

Observations:

At the time of this Road Safety Audit, the Wollaston Station Improvement Project was underway and the station was under full closure. As a result, pedestrian and cyclist activities at the intersection are potentially being affected by the temporary closure and they may increase once the project is completed and the station is re-opened. The desire lines may also have been affected as pedestrians are utilizing the Red Line shuttles and traveling to their temporary stops as opposed to the station entrances. Additionally, the eastern sidewalk was closed on Newport Avenue north of Beale Street as a result of construction.

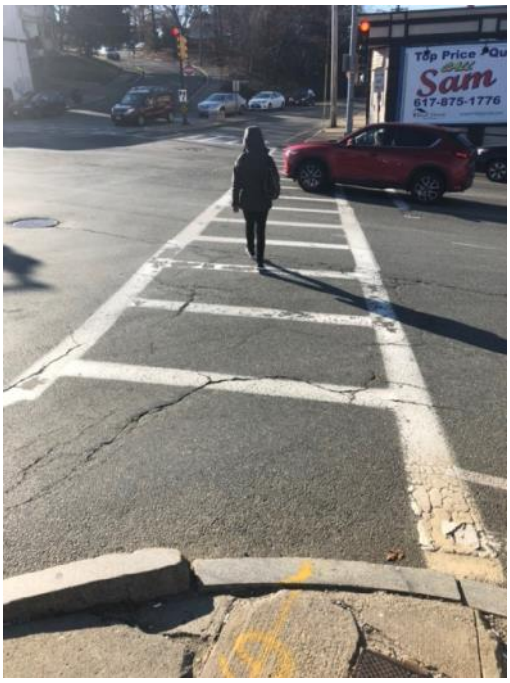


Figure 15 - No wheelchair ramp at crosswalk and sidewalk deterioration

The audit team observed that there are no accommodations for bicycles along Newport Avenue or Beale Street. Furthermore, there is no wayfinding signage directing cyclists to points of interest, such as Wollaston Station. The audit team noted that Beale Street was identified in the 2014 MAPC Bicycle Network Plan which recommended a combination of exclusive and shared bike lanes be provided along Beale Street. MassBike also conducted the Wollaston Station Bikeability Assessment in 2014, which recommended conducting a feasibility study on the implementation of bike facilities on Beale Street and along

Newport Avenue. The audit team noted that the low number of Red Line track crossing opportunities for cyclists combined with the close proximity to Wollaston Station makes Beale Street an important corridor for cyclists. Beale Street is one of only three crossings of the Red Line tracks in a 1.1 mile stretch of Newport Avenue. The other closest crossings of the Red Line tracks are each more than a half mile away, at Willow Street (approximately 0.5 mile south of Beale Street) and at Holbrook Road (approximately 0.65 miles to the north).

The audit team observed that none of the pedestrian crosswalks at the intersection of Newport Avenue and Beale Street had ADA compliant wheelchair ramps provided. The southwest corner of the intersection was noted as the only corner with a ramp but it did not comply with ADA standards due to the ramp location on the apex of the corner between the two crosswalks. The northwest, northeast, and southeast corners of the intersection did not have wheelchair ramps (**Figure 15**).

Figure 16 - Non ADA Compliant Push Button

Pedestrian pushbuttons at the intersection of Newport Avenue and Beale Street were all outdated and did not meet current ADA and MUTCD standards (**Figure 16**), as none are Accessible Pedestrian Signals (APS) and lacked audible and/or vibro-tactile indications. In addition, the pushbutton on the southeast corner of the intersection is located too far from the southern crosswalk and is not compliant with MUTCD standards.

The audit team observed pedestrians having to run or walk quickly to safely cross the Newport Avenue at Beale Street intersection. There were some pedestrians pushing strollers that may require a longer walk time. It was noted that there is a school nearby and there is a crossing guard for the intersection during the morning and afternoon peaks for school traffic.

It was observed that some sidewalk sections at the intersection of Newport Avenue and Beale Street may not have the minimum required clearance of 3 feet, particularly at the northeast and southeast corners. Additionally, the portion of eastern sidewalk of Newport Avenue south of Beale Street that abuts a guard rail is too narrow and does not provide the minimum width required (**Figure 17**). The southern sidewalk section between Newport Avenue and Old Colony Avenue is in poor condition. The sidewalk does not have a smooth continuous surface, with significant cracks and heaving observed, creating tripping hazards for pedestrians, wheelchairs, and strollers. There is no sidewalk on the southern side of Beale Street for the approximately 600 feet west of Newport Avenue due to

Figure 17 - Narrow sidewalk with guard rail on east side of Newport Avenue northbound approach.

the embankment created by Grandview Avenue. For this segment of Beale Street, all pedestrian traffic must use the northern crosswalk.

There is a single crosswalk at the unsignalized intersection of Old Colony Avenue and Beale Street which crosses Old Colony Avenue. Both landings for the crossing at Old Colony Avenue included tactile warning pads. The audit team observed pedestrians walking mid-block across Beale Street where no marked crossing exists in the vicinity of Old Colony Avenue. Directly across from the Old Colony Avenue intersection there is a pedestrian access point to Wollaston Station and it was noted by the audit team that this will continue to be a pedestrian desire line when the station opens. There were two crashes reported over the three-year period analyzed that involved a vehicle striking a pedestrian crossing Beale Street at Old Colony Avenue where no marked crossing is present. The only crossings of Beale Street are at Newport Avenue and at Greenwood Avenue (over 300 feet east of Old Colony Avenue) . The City of Quincy noted that new development in the vicinity of Old Colony Avenue could generate additional pedestrian traffic at this location.

Potential Enhancements:

1. Consider implementing a combination of exclusive and shared bike lanes along Beale Street to accommodate bicycle traffic across Newport Avenue and to/from Wollaston Station.

2. Evaluate potential for bicycle accommodations on Newport Avenue, including bicycle detection, bike boxes, and pavement markings for cyclists at the Beale Street and Newport Avenue intersection.

3. Consider adding bicycle and pedestrian wayfinding along Beale Street and Newport Avenue, directing cyclists and pedestrians to points of interest, such as Wollaston Station.

4. Install/replace wheelchair ramps at all corners of the intersection to meet current ADA standards.

5. Consider installing new sidewalk to have a smooth continuous surface and level landings to prevent tripping hazards.

6. Consider providing APS buttons at all pedestrian signals to comply with MUTCD.

7. Consider providing countdown pedestrian signals to assist pedestrians in navigating long crossings.

8. Evaluate all corners for sufficient standing areas and minimum 3-foot clearance at pinch points.

9. Relocate or provide a second pedestrian pushbutton on the southeast corner for the southern crossing of Newport Avenue to comply with MUTCD.

10. If the Wollaston pedestrian entrance at Beale Street across from Old Colony Avenue will remain open after the station reconstruction, evaluate the possibility of a signalized crosswalk at Old Colony Avenue crossing Beale Street to accommodate the existing pedestrian desire line to Wollaston Station and its parking facility. Additional pedestrian treatments should be also considered such as raised crosswalks, pedestrian crossing warning signs, pedestrian crossing islands, bump-outs, etc.

11. Evaluate pedestrian phasing and crossing times to ensure appropriate Walk times and clearance intervals are provided, including evaluation of use of Leading Pedestrian Intervals (LPI) with concurrent pedestrian phasing.

12. Evaluate feasibility of widening median islands to serve as formal refuge islands through reconfiguration of lane use and signal timings.

13. Consider restriping crosswalks with high visibility markings.

14. Evaluate location of crosswalks and opportunities to reduce length of crossings.

15. Consider adding signing for both pedestrians and vehicles to alert the presence of pedestrians.

Summary of Road Safety Audit

After the site visit, the RSA participants returned to discuss the safety issues and consider various improvements. The participants were encouraged to consider both short and long-term improvements for each of the existing safety issues. Each improvement considered has been categorized as short-term, mid-term, or long-term based on the definitions shown in Table 2. Additionally, a cost category has been assigned to each improvement based on the parameters set forth in Table 2.

Table 2: Estimated Time Frame and Costs Breakdown

Time Frame		Costs	
Short-Term	<1 Year	Low	<$10,000
Mid-Term	1-3 Years	Medium	$10,001-$50,000
Long-Term	>3 Years	High	>$50,000

Each safety issue and potential safety enhancement was discussed during the audit. Safety payoff estimates are subjective and may be based on the relative percent of crashes that may be reduced by the enhancement. Table 3 describes the potential safety enhancement, potential safety payoff, the estimated time frame for completion, the estimated construction cost, and the agency jurisdiction.

Table 3: Potential Safety Enhancement Summary – Beale Street at Newport Avenue

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Intersection Geometry and Operations	Consider providing a left turn lane for Beale St eastbound and clearly designate the eastbound through lane to eliminate the inconsistent lane usage on the eastbound approach that creates confusion between eastbound through traffic and westbound left turns. Eastbound through lane should be aligned with the receiving lane on the east leg of the intersection.	High	Short-term	Low	City of Quincy
	Consider options for closing or reconfiguring Grandview Avenue egress at Beale Street to provide a formalized eastbound approach and eliminate the merge condition at the intersection that creates confusion between eastbound through traffic and westbound left turns. In conjunction with reconfiguration or closure of Grandview Avenue, consider expanding sidewalks on the southwest corner to shorten the length of the western crosswalk. If Grandview Avenue is to remain open evaluate stop or yield signs to designate which road has the right of way.	Medium	Long-term	Medium	City of Quincy
	Evaluate prohibiting Newport Avenue northbound left turns to remove conflicts between the permissive northbound left turn movement and the southbound through movement. As part of a feasibility evaluation, assess the potential routing and impacts of diverted left-turn traffic.	High	Short-term	Low	City of Quincy
	Evaluate potential to add left turn bay for Newport Avenue northbound left turn through combination of roadway widening and/or removal of median island to reduce northbound through lane blockages caused by left turns. In conjunction, evaluate potential for a protected left-turn phase.	High	Mid-term	Medium	City of Quincy

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Intersection Geometry and Operations	Re-evaluate the function and design of all median islands (Beale Street west leg and Newport Avenue south leg) to address insufficient turning radii. In conjunction, evaluate feasibility of widening median islands to serve as formal pedestrian refuge islands through reconfiguration of lane use and signal timings. If median removal is considered, evaluate pedestrian crossing times to ensure pedestrian needs are met.	High	Mid-term	Medium	City of Quincy
	Evaluate southbound left turn storage length in conjunction with evaluation of formalizing southbound through lane shift at the opening of the turn bay in order to reduce through lane blockages. Consider lengthening turn bay to accommodate queues and slow uphill movement that limits throughput of the approach.	High	Mid-term	Low	City of Quincy
	Evaluate all turning paths at the intersection (check conflicts with concurrent movements, curbs and medians) to inform a redesign of curb and lane geometry in order to reduce the instances of vehicles overrunning sidewalks and medians and to eliminate conflicts between opposing turning movements.	High	Mid-term	Medium	City of Quincy
	Evaluate stopping sight distance constraints and signal warrants at the intersection of Old Colony Avenue and Beale Street to determine if the current stop control is appropriate. In conjunction, consider providing a signalized pedestrian crossing of Beale Street at Old Colony Avenue to accommodate the pedestrian desire line from Old Colony Avenue to Wollaston Station. If the intersection remains under stop control, consider providing a supplemental stop sign for Old Colony Avenue northbound at Beale Street.	High	Mid-term	High	City of Quincy

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Intersection Geometry and Operations	Evaluate signal coordination along Newport Avenue including Beale Street and Brook Street to reduce congestion along Newport Avenue.	Medium	Short-term	Low	City of Quincy
	Evaluate signal timings for pedestrians and vehicle phases, check clearance intervals.	High	Short-term	Low	City of Quincy
Signs, Lighting and Pavement Markings	Consider providing dotted left-turn extension markings to guide left turning vehicles through the intersection.	High	Short-term	Low	City of Quincy
	Consider providing lane use markings to designate each lane movement.	Medium	Short-term	Low	City of Quincy
	Consider formalizing/narrowing Beale Street eastbound receiving lane to one lane by restriping/hatching shoulder or installing new curbing. In conjunction, evaluate potential for shortening the eastern pedestrian crossing of Beale Street and widening the sidewalk on the south side of this approach.	Medium	Short-term	Low	City of Quincy
	Consider providing an advanced warning sign "RED SIGNAL AHEAD" on Newport Avenue northbound before roadway crest.	High	Short-term	Low	City of Quincy
	Evaluate “NO TURN ON RED” sign placement and visibility of “NO TURN ON RED” signs on both southbound and westbound approaches.	Medium	Short-term	Low	City of Quincy
	Evaluate if “NO TURN ON RED” would be warranted on the northbound and eastbound approaches.	Medium	Short-term	Low	City of Quincy
	Consider adding signage demarcating the median island on Newport Avenue with MUTCD compliant permanent signs (“KEEP RIGHT” sign).	Medium	Short-term	Low	City of Quincy
	Consider adding lane use control signs upstream of each approach	Medium	Short-term	Low	City of Quincy

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Signs, Lighting and Pavement Markings	Evaluate placement and adequacy of street lighting at the intersection.	Medium	Mid-term	Low	City of Quincy
	Consider replacing Old Colony Avenue street name sign.	Low	Short-term	Low	City of Quincy
Traffic Signal Equipment	Consider providing back plates with yellow retroreflective border strips on all signal heads, including flashing signals at Old Colony Avenue, to provide better visibility of the signals.	Medium	Short-term	Low	City of Quincy
	Consider replacing missing signal head facing Grandview Avenue.	Medium	Short-term	Low	City of Quincy
	Evaluate use of flashing yellow arrow signal for permissive phases of protected/permitted left turns.	Medium	Short-term	Low	City of Quincy
	Re-install flashing signal at Old Colony Ave so flashing yellow is facing Beale Street eastbound approach	Medium	Short-term	Low	City of Quincy
	Consider providing an overhead traffic signal head for each lane to improve visibility.	Medium	Mid-term	Low	City of Quincy
Emergency Vehicle Accommodations	Consider upgrading the traffic signal at Newport Avenue and Beale Street to include emergency vehicle pre-emption, to accommodate emergency vehicle movement at the intersection.	High	Mid-term	High	City of Quincy
	Consider providing Quincy Fire Department (QFD) with an in-station signal preemption control for the signal at Newport Avenue and Beale Street, to be triggered by QFD personnel when a fire truck is departing the station.	High	Mid-term	High	City of Quincy

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Emergency Vehicle Accommodations	Consider adding a traffic signal to stop traffic along Beale Street at the fire station driveway. In conjunction, provide QFD with the ability to activate the signal from within the station to facilitate safe ingress and egress fire truck operations.	High	Long-term	High	City of Quincy
	Consider adding “Keep Clear” pavement markings and “Do Not Block” signage indicating that motorists shall not block the fire station driveway to prevent blockages of the fire station driveway and to facilitate safe ingress and egress fire truck operations.	Medium	Short-term	Low	City of Quincy
Bicycle and Pedestrian Accommodations	Consider implementing a combination of exclusive and shared bike lanes along Beale Street to accommodate bicycle traffic across Newport Avenue and to/from Wollaston Station.	High	Mid-term	Medium	City of Quincy
	Evaluate possible bicycle accommodations for Newport Avenue; including bicycle detection, bike boxes, and pavement markings for cyclists at the Beale Street/Newport Avenue intersection.	High	Mid-term	Medium	City of Quincy
	Consider adding bicycle and pedestrian wayfinding along Beale Street and Newport Avenue, directing cyclists and pedestrians to points of interest, such as Wollaston Station.	Low	Mid-term	Medium	City of Quincy
	Install/replace wheelchair ramps at all corners of intersection to meet ADA standards.	High	Mid-term	Medium	City of Quincy
	Consider installing new sidewalk to have a smooth continuous surface and level landings to prevent tripping hazards.	High	Mid-term	Medium	City of Quincy
	Consider providing APS buttons at all pedestrian signals in compliance with MUTCD.	Medium	Mid-term	Medium	City of Quincy
	Consider providing countdown pedestrian signals to assist pedestrians in navigating long crossings.	Medium	Mid-term	High	City of Quincy

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Bicycle and Pedestrian Accommodations	Evaluate all corners for sufficient standing areas and minimum 3-foot clearance at pinch points.	Medium	Short-term	Low	City of Quincy
	Relocate or provide a second pedestrian pushbutton on the southeast corner for the southern crossing of Newport Avenue to comply with MUTCD.	Low	Mid-term	Medium	City of Quincy
	If the Wollaston pedestrian entrance at Beale Street across from Old Colony Avenue will remain open after the station reconstruction, evaluate the possibility of a signalized crosswalk at Old Colony Avenue crossing Beale Street to accommodate the existing pedestrian desire line to Wollaston Station and its parking facility. Additional pedestrian treatments should be also considered such as raised crosswalks, pedestrian crossing warning signs, pedestrian crossing islands, bump-outs, etc.	High	Mid-term	Medium	City of Quincy
	Evaluate pedestrian phasing and crossing times to ensure appropriate Walk times and clearance intervals are provided, including evaluation of use of Leading Pedestrian Intervals with concurrent pedestrian phasing.	High	Mid-term	High	City of Quincy
	Evaluate feasibility of widening median islands to serve as formal refuge islands through reconfiguration of lane use and signal timings.	High	Mid-term	High	City of Quincy
	Consider restriping crosswalks with high visibility markings.	High	Short-term	Low	City of Quincy
	Evaluate location of crosswalks and opportunities to reduce length of crossings.	Medium	Mid-term	Medium	City of Quincy
	Consider adding signing for both pedestrians and vehicles to alert the presence of pedestrians.	High	Short-term	Low	City of Quincy

Appendix A. RSA Meeting Agenda

Agenda

Road Safety Audit

Newport Avenue at Beale Street

Meeting Location: Quincy City Hall
1305 Hancock St. Quincy, MA
Basement Conference Room
December 6, 2018
9:00 AM – 12:00 PM (noon)

Type of Meeting: **High Crash Location – Road Safety Audit**

Attendees: **Invited Participants to Comprise a Multidisciplinary Team**

Please Bring: **Thoughts and Enthusiasm!!**

9:00 AM **Welcome and Introductions**

9:15 AM **Review of Site Specific Material**

- Crash Data Summary – provided in advance
- Existing Geometry and Conditions

10:00 AM **Visit Site**

- Drive to Site
- As a group, identify areas for improvements

11:15 AM **Post Visit Discussion / Completion of RSA**

- Discussion observations and finalize findings
- Discuss potential improvements and final recommendations

12:00 PM **Adjourn for the Day – but the RSA has not ended**

Instruction for Participants:

- Before attending the RSA, participants are encouraged to drive through the intersection and complete/consider elements on the RSA Prompt List with a focus on safety.
- All participants will be actively involved in the process throughout. Participants are encouraged to come with thoughts and ideas, but are reminded that the synergy that develops and respect for others' opinions are key elements to the success of the overall RSA process.
- After the RSA meeting, participants will be asked to comment and respond to the document materials to assure it is reflective of the RSA completed by the multidisciplinary team.

Appendix B. RSA Audit Team Contact List

Invited Audit Team Members

Date: December 6, 2018 Location: Newport Avenue and Beale Street, Quincy, MA

Audit Team Members	Agency/Affiliation	Email Address	Phone Number
Seth Asante	CTPS	sasante@ctps.org	
Wilfred Hernandez	FHWA - Safety Engineer	wilfred.hernandez@dot.gov	(617) 494-3487
Galen Mook	MassBike	galen@massbike.org	617-542-2453
Tom Francis	MassBike	tom@massbike.org	
Geri Vatan	MassDOT - District 6	geraldine.vatan@dot.state.ma.us	857-368-6115
Courtney Dwyer	MassDOT - District 6	courtney.dwyer@dot.state.ma.us	857-368-6165
Raj Kulen	MassDOT - District 6 - Traffic	Raj.Kulen@dot.state.ma.us	
Michelle Deng	MassDOT - Safety Engineering Section	Michelle.Deng@dot.state.ma.us	857-368-9637
Melisa Dullea	MBTA	mdullea@mbta.com	
David Loutzenheiser	Metropolitan Area Planning Council (MAPC)	dLout zenheiser@mapc.org	617-933-0743
Eric Bourassa	Metropolitan Area Planning Council (MAPC)	ebourassa@mapc.org	
James Fatseas	Quincy - Department of Planning and Community Development	jfatseas@quincyma.gov	617-376-1365
Rob Stevens	Quincy - Deputy Planning Director	rstevens@quincyma.gov	
Joseph Guarino	Quincy - Engineering - Senior Engineer	jguarino@quincyma.gov	617-376-1935
Joseph Barron	Quincy - Fire - Chief	firechief@quincyma.gov	
Michael Norton	Quincy - Highway Division - Director of Operations	mnorton@quincyma.gov	617-376-1258
Paul Keenan	Quincy - Police - Chief	chiefkeenan@quincyma.gov	617-745-5712
Matthew Tobin	Quincy - Police - Traffic Division Lieutenant	mtobin@quincyma.gov	617-745-5795
William Plant	Quincy - Police - Officer	wplant@quincyma.gov	
Al Grazioso	Quincy - Public Works Commissioner	agrazioso@quincyma.gov	617-376-1959
Chris Cassani	Quincy - TPAL - Traffic Parking and Lighting	ccassani@quincyma.gov	
Allison Ruel	Quincy - Traffic	aruel@quincyma.gov	
Wendy Landman	Walk Boston	wlandman@walkboston.org	
Stacey Beuttell	Walk Boston	sbeuttell@walkboston.org	

Appendix C. Detailed Crash Data

Crash Data Summary Table (2015-2017)

City of Quincy: Newport Avenue at Beale Street

Crash Diagram #	Crash Date	Crash Day	Time of Day	Manner of Collision	Light Condition	Weather Condition	Road Surface	Driver Contributing Code	D1 Age Range	D2 Age Range	D3 Age Range	D4 Age Range	Comments
1	1/5/2015	Monday	2:49 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(Failure to keep in proper lane or running off road)	25-34	35-44	NA	NA	V1 was traveling SB on Newport Ave. V2 attempted a U-turn out of a parking space and V1 crashed into V2.
2	1/7/2015	Wednesday	8:59 PM	Head-on	Dark - lighted roadway	Clear	Dry	D1:(Physical impairment),(Failure to keep in proper lane or running off road) D2:(No improper driving)	35-44	25-34	NA	NA	OUI. V1 was traveling NB on Newport Ave and took a right turn onto Beale St. V2 was traveling WB on Beale St, approaching the intersection. V1 crossed the double yellow lines and struck V2.
3	1/12/2015	Monday	6:43 PM	Angle	Dark - lighted roadway	Rain	Wet	D1:(Failed to yield right of way) D2:(No improper driving)	25-34	21-24	NA	NA	V1 was traveling WB on Beale St approaching to turn left onto Newport Ave. V2 was traveling EB on Beale St and struck V1.
4	2/17/2015	Tuesday	12:44 PM	Rear-end	Daylight	Snow	Sand, mud, dirt, oil, gravel	D1:(No improper driving) D2:(No improper driving) D3:(No improper driving) D4:(Driving too fast for conditions),(Driving too fast for conditions)	65-74	25-34	55-64	25-34	V4 was traveling NB on Newport Ave and was not able to stop due to snow and crashed into V3 which then crashed into V2. V2 then crashed into V1.
5	2/24/2015	Tuesday	7:56 AM	Rear-end	Dawn	Clear	Ice	D1:(No improper driving) D2:(No improper driving) D3:(No improper driving)	55-64	35-44	35-44	NA	V1, V2 and V3 were traveling WB on Beale St. V1 could not stop due to snow and crashed into V2 who then crashed into V3.
6	2/27/2015	Friday	12:52 PM	Rear-end	Daylight	Clear	Dry	D1:(No improper driving) D2:(No improper driving) D3:()	25-34	25-34	Unknown	NA	V1, V2 and V3 were traveling NB on Newport Ave. V3 attempted a lane change and struck V2 from behind which pushed into V1.
7	3/16/2015	Monday	12:32 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Made an improper turn) D2:(No improper driving)	55-64	55-64	NA	NA	V1 and V2 were traveling EB on Beale St. V1 attempted to turn right from the left lane and V2 struck V1.
8	4/19/2015	Sunday	1:14 AM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(Operating vehicle in erratic, reckless, careless, negligent or aggressive manner)	25-34	21-24	NA	NA	V1 and V2 were traveling NB on Newport Ave. V1 was stopped at the red light and V2 struck V1 from behind.
9	4/22/2015	Wednesday	6:48 PM	Sideswipe, same direction	Daylight	Cloudy	Unknown	D1:(Unknown) D2:(No Improper Driving)	55-64	75-84	NA	NA	V1 was traveling NB on Old Colony Ave while V2 was parked. V1 struck the mirror of V2.
10	4/29/2015	Wednesday	6:03 PM	Rear-end	Daylight	Clear	Dry	D1:(No improper driving) D2:(Inattention)	55-64	21-24	NA	NA	V1 and V2 were traveling SB on Beale St and turning left to Newport Ave NB. V1 stopped when an emergency vehicle approached. V2 didn't notice and crashed into V1.
11	7/5/2015	Sunday	10:49 PM	Angle	Dark - lighted roadway	Clear	Dry	D1:(No improper driving),(No improper driving) D2:(Inattention),(Inattention)	35-44	16-20	NA	NA	V1, V2 and V3 were traveling SB on Newport Ave when V3 rear-ended V2. V2 then struck V1.
12	7/30/2015	Thursday	6:47 PM	Rear-end	Daylight	Cloudy	Wet	D1:(No Improper Driving) D2:(Unknown)	Unknown	Unknown	NA	NA	V1 and V2 were traveling NB on Newport Ave. V1 was stopped at Brook St red light when V2 rear ended V1.
13	8/3/2015	Monday	5:04 PM	Angle	Daylight	Clear	Dry	D1:(No improper driving),(No improper driving) D2:(Failed to yield right of way),(Failed to yield right of way)	45-54	25-34	NA	NA	V1 was traveling WB on Beale St at Newport Ave when V2 attempted a left turn from Beale St EB and struck V1.
14	8/5/2015	Wednesday	3:59 PM	Rear-end	Daylight	Clear	Dry	D1:(No improper driving) D2:(Inattention)	25-34	16-20	NA	NA	V1 and V2 were traveling SB on Newport Ave when V1 stopped in heavy traffic and was rear-ended by V2.
15	8/6/2015	Thursday	8:24 PM	Angle	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(No improper driving)	25-34	21-24	NA	NA	V1 was traveling WB on Beale St at Newport Ave when V2 attempted a left turn from Beale St EB and struck V1.
16	8/17/2015	Monday	2:45 PM	Angle	Daylight	Clear	Dry	D1:(No improper driving) D2:(No improper driving) D3:(Failed to yield right of way)	45-54	35-44	35-44	NA	V1 and V2 were traveling WB on Beale St when V3 turned left out of Old Colony Ave and struck V1 and V2.
17	9/21/2015	Monday	10:49 AM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(No improper driving) D2:(No improper driving)	65-74	45-54	NA	NA	V1 and V2 were traveling NB on Newport Ave when both vehicles sideswiped.

Crash Data Summary Table (2015-2017)

City of Quincy: Newport Avenue at Beale Street

Crash Diagram #	Crash Date	Crash Day	Time of Day	Manner of Collision	Light Condition	Weather Condition	Road Surface	Driver Contributing Code	D1 Age Range	D2 Age Range	D3 Age Range	D4 Age Range	Comments
18	9/23/2015	Wednesday	6:29 PM	Rear-end	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(Inattention)	55-64	75-84	NA	NA	V1 was traveling West on Beale St when V2 struck V1 from behind. V2 was making a left turn from Old Colony Ave
19	10/4/2015	Sunday	11:34 AM	Rear-end	Daylight	Clear	Dry	D1:(Unknown) D2:(Unknown)	45-54	75-84	NA	NA	V1 was traveling WB on Beale St. and was stopped at a red light. V2 was making a left turn out of Old Colony Ave and struck V1 from behind.
20	10/8/2015	Thursday	6:22 PM	Rear-end	Dusk	Clear	Dry	D1:(No improper driving) D2:(No improper driving) D3:(Unknown)	65-74	21-24	65-74	NA	V1, V2 and V3 were traveling SB on Newport Ave when V3 rear-ended V2. V2 then struck V1.
21	11/8/2015	Sunday	11:04 AM	Angle	Daylight	Clear	Dry	D1:(Inattention) D2:(No Improper Driving)	35-44	65-74	NA	NA	V2 was traveling WB on Bealse St when V1 made a left turn from Old Colony Ave and struck V2.
22	12/2/2015	Wednesday	8:09 AM	Angle	Daylight	Rain	Wet	D1:(No improper driving) D2:(Inattention),(Disregarded traffic signs, signals, road markings) D3:(No improper driving)	45-54	25-34	25-34	NA	V1 was traveling NB on Newport Ave while V2 was staveling EB on Beale St. V2 ran a red light and struck V1. V2 lost control and hit V3 which was stopped at a red light.
23	12/13/2015	Sunday	4:51 PM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(Inattention)	65-74	21-24	NA	NA	V1 and V2 were traveling EB on Beale St. V1 was stopped at the red light when V2 struck it from behind.
24	12/14/2015	Monday	2:20 PM	Angle	Daylight	Cloudy	Dry	D1:(No improper driving) D2:(Failed to yield right of way),(Inattention)	65-74	55-64	NA	NA	V1 was traveling EB on Beale St while V2 was traveling WB on Beale St and making a left turn on to Newport Ave SB. V2 did not yield to V1.
25	12/15/2015	Tuesday	6:51 PM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(Inattention) D2:(No improper driving) D3:(No improper driving)	75-84	21-24	21-24	NA	On the Beale St. WB Approach V1 crashed into the rear end of V2. V1 backed up and tried turning into the left turn lane. V2 then hit V3 when turning into the lane.
26	12/24/2015	Thursday	11:14 PM	Head-on	Dark - lighted roadway	Cloudy	Dry	D1:(No improper driving) D2:()	25-34	25-34	NA	NA	V1 was waiting at a red light going WB on Beale St when V2 coming from Newport Ave NB took a wide turn and hit V1 head on.
27	1/4/2016	Monday	1:04 PM	Angle	Daylight	Snow	Dry	D1:(Failed to yield right of way) D2:(No improper driving)	65-74	21-24	NA	NA	V2 was traveling WB on Beale St. and V1 was traveling EB on Beale St making a left to go NB on Newport Ave and did not yield to V2.
28	2/9/2016	Tuesday	2:15 PM	Angle	Daylight	Cloudy	Wet	D1:(Unknown) D2:(Failed to yield right of way)	25-34	16-20	NA	NA	V1 was traveling WB on Beale St. and V2 was traveling EB on Beale St making a left to go NB on Newport Ave and did not yield to V1.
29	2/13/2016	Saturday	4:50 PM	Unknown	Dusk	Clear	Unknown	D1:(Visibility Obstructed)	35-44	35-44	NA	NA	V1 was traveling WB on Beale St. and the driver had sun in their eyes when they struck a pedestrian. Pedestrian fled the scene.
30	2/23/2016	Tuesday	11:48 AM	Sideswipe, same direction	Daylight	Cloudy	Dry	D1:(No improper driving) D2:(Failure to keep in proper lane or running off road),(Inattention)	65-74	35-44	NA	NA	V1 and V2 were both traveling SB on Newport Ave. V2 was in the left turn lane and went straight instead of turning left. V2 sideswiped into V1.
31	3/17/2016	Thursday	9:53 PM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(Inattention)	25-34	21-24	NA	NA	V1 and V2 were traveling EB on Beale St and turning left on Newport Ave. V1 stopped to let oncoming traffic go. V2 didn't see V1 stop and crashed into V1.
32	5/2/2016	Monday	9:12 PM	Angle	Dark - lighted roadway	Rain	Wet	D1:(No improper driving) D2:(Failed to yield right of way)	45-54	25-34	NA	NA	V1 was traveling SB on Newport Ave. V2 was traveling NB on Newport Ave and making a left turn. V2 did not yield to oncoming traffic and struck V1.
33	6/11/2016	Saturday	9:44 PM	Angle	Dark - lighted roadway	Clear	Dry	D1:(Unknown) D2:(Unknown)	65-74	35-44	NA	NA	V1 was traveling WB on Beale St making a left turn to Newport Ave. V2 was traveling EB on Beale St and making a right turn to Newport Ave when V1 and V2 collided.
34	6/13/2016	Monday	4:51 PM	Sideswipe, same direction	Daylight	Cloudy	Dry	D1:(Inattention) D2:(No Improper Driving)	16-20	35-44	NA	NA	V1 and V2 were traveling SB on Newport Ave when they sideswiped.

Crash Data Summary Table (2015-2017)

City of Quincy: Newport Avenue at Beale Street

Crash Diagram #	Crash Date	Crash Day	Time of Day	Manner of Collision	Light Condition	Weather Condition	Road Surface	Driver Contributing Code	D1 Age Range	D2 Age Range	D3 Age Range	D4 Age Range	Comments
35	6/22/2016	Wednesday	2:22 PM	Angle	Daylight	Cloudy	Wet	D1:(No improper driving) D2:(Visibility obstructed),(Failed to yield right of way)	35-44	25-34	NA	NA	V1 was traveling WB on Beale St while V2 was traveling EB and making a left turn to Newport Ave. V2 did not see the oncoming traffic and V1 struck V2.
36	7/12/2016	Tuesday	9:52 PM	Sideswipe, same direction	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(Unknown)	55-64	16-20	NA	NA	V1 and V2 were traveling SB on Newport Ave. V1 was making a right turn to Beale St when it was struck from behind by V2.
37	7/11/2016	Monday	4:09 PM	Angle	Daylight	Clear	Dry	D1:(Unknown) D2:(Unknown)	65-74	25-34	NA	NA	V1 was traveling WB on Beale St and making a left turn to Newport Ave. V2 was traveling EB on Beale St. V1 did not yield to V2 and V2 crashed into V1.
38	8/4/2016	Thursday	10:58 AM	Sideswipe, same direction	Daylight	Clear	Unknown	D1:(Unknown)	65-74	65-74	NA	NA	V1 and V2 were traveling SB on Newport Ave when they sideswiped.
39	8/11/2016	Thursday	7:39 AM	Rear-end	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(Inattention)	Unknown	Unknown	NA	NA	V1 and V2 were both traveling NB on Newport Ave. V1 was stopped at the red light when V2 crashed into V1.
40	8/26/2016	Friday	11:30 AM	Angle	Daylight	Cloudy	Dry	D1:(No improper driving) D2:(Failed to yield right of way)	75-84	25-34	NA	NA	V1 was traveling SB on Newport Ave while V2 was traveling NB on Newport Ave and making a left turn to Bealse St. V2 did not yield to oncoming traffic.
41	8/27/2016	Saturday	4:18 AM	Single vehicle crash	Dark - lighted roadway	Cloudy	Dry	D1:(Fatigued/asleep),(Inattention)	21-24	21-24	NA	NA	V1 was traveling EB on Beale St. whe it crashed in the center median. Driver was fatigued.
42	9/3/2016	Saturday	10:12 AM	Rear-end	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(No Improper Driving)	Unknown	Unknown	NA	NA	V1 and V2 were traveling SB on Newport Ave when an unkown vehicle backed out of driveway on to Newport Ave. V2 stopped and V1 crashed into V2.
43	9/16/2016	Friday	7:40 PM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(No improper driving)	55-64	35-44	NA	NA	V1, V2, and V3 were making a left turn from Beale St to Newport Ave SB. V3 got stuck on the median. V2 stopped and V1 crashed into V2.
44	9/22/2016	Thursday	8:14 PM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(Unknown) D2:(No Improper Driving) D3:(No Improper Driving)	25-34	55-64	55-64	NA	V1, V2, and V3 were traveling NB on Newport Ave. V3 crashed into V2 and caused V2 to crash into V1.
45	9/27/2016	Tuesday	12:50 PM	Rear-end	Daylight	Cloudy	Dry	D1:(Inattention),(Inattention) D2:(No improper driving),(No improper driving)	45-54	25-34	NA	NA	V1 and V2 were traveling SB on Newport Ave. V1 was stopped and then put the vehicle into either nuetral or reverse. V1 rolled back into V2.
46	10/1/2016	Saturday	10:58 AM	Angle	Daylight	Rain	Wet	D1:(Unknown),(Unknown) D2:(Unknown),(Unknown)	>84	75-84	NA	NA	V1 was traveling SB on Newport Ave and was turning right. V2 was traveling WB on Beale St. V1 struck V2 on the right side of the car.
47	11/2/2016	Wednesday	7:25 AM	Angle	Dawn	Clear	Dry	D1:(Unknown) D2:(Unknown)	Unknown	Unknown	NA	NA	V2 was traveling WB on Beale St. when V1 made a left turn out of Old Colony Ave and was struck by V2.
48	11/3/2016	Thursday	8:23 AM	Angle	Daylight	Clear	Wet	D1:(No Improper Driving) D2:(Failed to yield right of way)	25-34	25-34	NA	NA	V2 was traveling EB on Beale St when V1 made a left turn out of Old Colony Ave and was struck by V2.
49	11/15/2016	Tuesday	12:08 AM	Rear-end	Dark - lighted roadway	Clear	Dry	D1:(No improper driving) D2:(Inattention)	45-54	25-34	NA	NA	V1 and V2 were traveling SB on Newport Ave. V1 was stopped at the red light and V2 struck V1 from behind.
50	12/20/2016	Tuesday	2:33 PM	Angle	Daylight	Clear	Dry	D1:(No improper driving) D2:(Failure to keep in proper lane or running off road)	75-84	75-84	NA	NA	V1 was traveling EB on Beale St and made a left turn on to Newport Ave. V2 was traveling WB on Beale St and made a right turn on to Newport Ave. V1 was struck in the side by V2.
51	1/6/2017	Friday	8:47 AM	Rear-end	Daylight	Cloudy	Snow	D1:(Inattention) D2:(No Improper Driving)	25-34	25-34	NA	NA	V1 and V2 were traveling NB on Newport Ave. V2 was making a right turn on to Beale St and had to stop for traffic. V1 crashed into the back of V2.

Crash Data Summary Table (2015-2017)

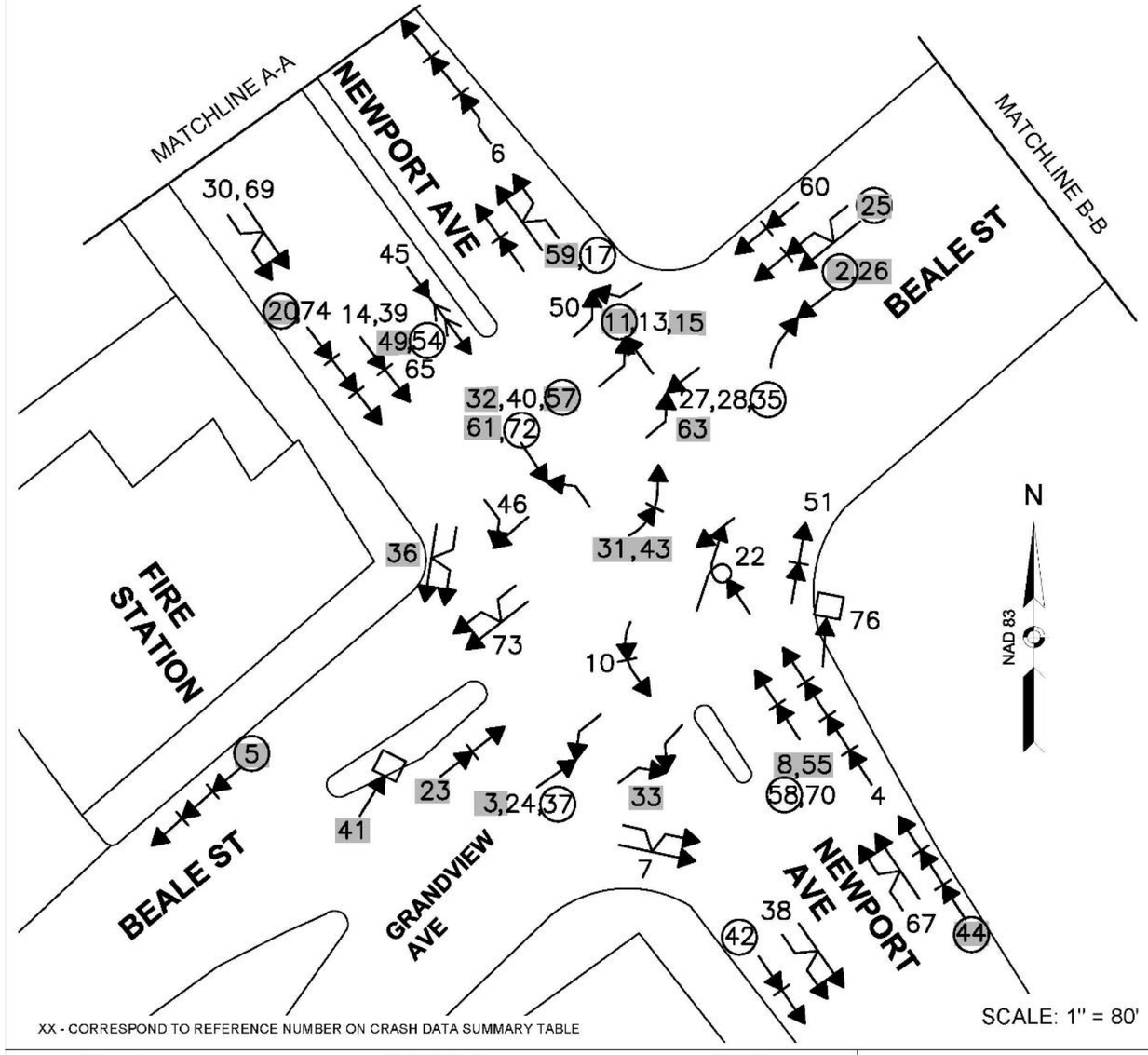
City of Quincy: Newport Avenue at Beale Street

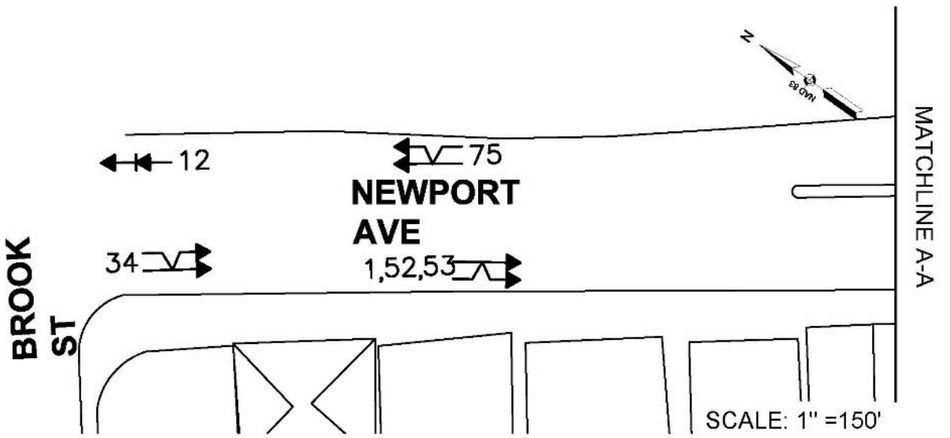
Crash Diagram #	Crash Date	Crash Day	Time of Day	Manner of Collision	Light Condition	Weather Condition	Road Surface	Driver Contributing Code	D1 Age Range	D2 Age Range	D3 Age Range	D4 Age Range	Comments
52	1/24/2017	Tuesday	10:29 AM	Angle	Daylight	Rain	Wet	D1:(Unknown) D2:(Unknown)	35-44	45-54	NA	NA	V1 and V2 were traveling SB on Newport Ave when they sideswiped.
53	1/25/2017	Wednesday	2:14 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Unknown) D2:(Unknown)	55-64	75-84	NA	NA	V1 and V2 were traveling SB on Newport Ave when they sideswiped.
54	2/2/2017	Thursday	2:23 PM	Rear-end	Dawn	Cloudy	Dry	D1:(No Improper Driving) D2:(Operating vehicle eratic, reckless, careless, negligent or aggressive manner)	25-34	45-54	NA	NA	OUI. V1 and V2 were traveling SB on Newport Ave. V1 was stopped at the red light and V2 crashed into it from behind. V2 cited with an OUI.
55	2/9/2017	Thursday	8:50 PM	Rear-end	Dark - lighted roadway	Snow	Snow	D1:(No Improper Driving) D2:(Driving too fast for conditions)	16-20	25-34	NA	NA	V1 and V2 were traveling NB on Newport Ave. V1 was stopped at the red light and V2 crashed into it from behind. V2 was not able to stop due to the snow.
56	2/12/2017	Sunday	3:59 PM	Angle	Daylight	Snow	Snow	D1:(No Improper Driving) D2:(No Improper Driving)	35-44	55-64	NA	NA	V2 was stopped in traffic on Old Colony Ave while V1 was traveling EB on Beale St and making a right turn on to Old Colony Ave. The snow caused V1 to slide into V2.
57	3/8/2017	Wednesday	9:15 PM	Angle	Dark - lighted roadway	Clear	Dry	D1:(No Improper Driving) D2:(Failed to yield right of way)	35-44	55-64	NA	NA	V1 was traveling SB on Newport Ave. V2 was traveling NB on Newport Ave and making a left turn on to Beale St. V2 didn't yield to on coming traffic. V1 crashed into V2 and V2 lost control and hit a light pole.
58	3/11/2017	Saturday	1:08 AM	Rear-end	Dark - lighted roadway	Snow	Snow	D1:(No Improper Driving) D2:(Driving too fast for conditions)	25-34	25-34	NA	NA	V1 and V2 were traveling NB on Newort Ave. V1 was stopped at the red light and V2 crashed into it from behind. V2 was not able to stop due to the snow.
59	3/16/2017	Thursday	6:13 AM	Sideswipe, same direction	Dawn	Clear	Dry	D1:(No Improper Driving) D2:(Unknown)	35-44	35-44	NA	NA	V1 and V2 were traveling NB on Newport Ave when they sideswiped.
60	3/23/2017	Thursday	11:18 AM	Rear-end	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(Unknown)	55-64	55-64	NA	NA	V1 and V2 were traveling WB on Beale St when V2 struck V1 from behind.
61	3/31/2017	Friday	8:02 PM	Angle	Dark - lighted roadway	Sleet, Hail, Freezing rain	Wet	D1:(No Improper Driving) D2:(Failed to yield right of way)	55-64	65-74	NA	NA	V1 was traveling SB on Newport Ave while V2 was traveling NB on Newport Ave and making a left turn to Beale St. V2 didn't yield to on coming traffic. V1 crashed into V2.
62	4/12/2017	Wednesday	9:58 AM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Unknown)	Unknown	35-44	NA	NA	V1 was traveling WB on Beale St whenthe light turned green a pedestrian stepped in front of V1.
63	4/15/2017	Saturday	11:51 PM	Angle	Dark - lighted roadway	Clear	Dry	D1:(No Improper Driving) D2:(Failed to yield right of way)	21-24	25-34	NA	NA	V1 was traveling WB on Beale St and V2 was traveling EB on Beale St and making a right turn on to Newport Ave. V2 and didn't yield to on coming traffic. V1 crashed into V2. V2 did not see V1.
64	5/4/2017	Thursday	2:39 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Unknown) D2:(Unknown)	16-20	55-64	NA	NA	V1 and V2 were traveling WB on Beale St when they sideswiped.
65	6/19/2017	Monday	10:24 AM	Rear-end	Daylight	Cloudy	Dry	D1:(No Improper Driving) D2:(Inattention)	25-34	55-64	NA	NA	V1 and V2 were traveling SB on Newport Ave. V1 was stopped at the red light and V2 struck V1 from behind.
66	6/12/2017	Monday	7:10 PM	Angle	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(No Improper Driving)	25-34	75-84	NA	NA	V1 was traveling EB on Beale St when V2 made a left turn out of Old Colony Ave and V1 crashed into V2. V1 then backed into V2 while parked over on the side.
67	6/26/2017	Monday	9:46AM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Inattention) D2:(No Improper Driving)	35-44	25-34	NA	NA	V1 and V2 were traveling NB on Newport Ave when they sideswiped.
68	7/1/2017	Saturday	2:28 PM	Rear-end	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(Other improper action)	25-34	55-64	NA	NA	V1 and V2 were traveling NB on Old Colony Ave. V1 was stopped at the intersection and V2 crashed into V1.

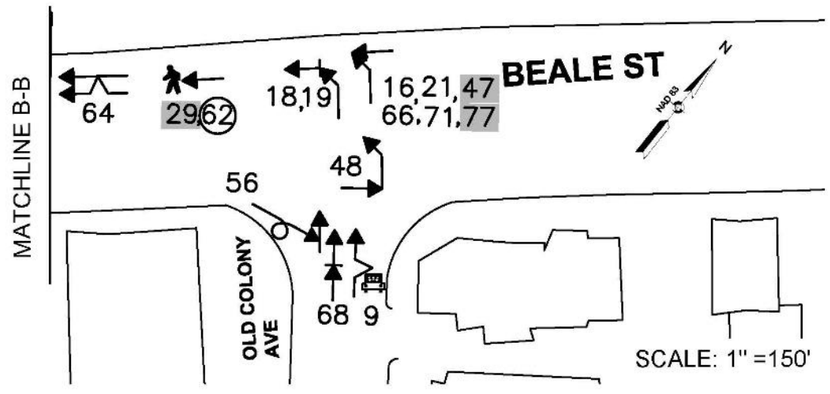
Crash Data Summary Table (2015-2017)

City of Quincy: Newport Avenue at Beale Street

Crash Diagram #	Crash Date	Crash Day	Time of Day	Manner of Collision	Light Condition	Weather Condition	Road Surface	Driver Contributing Code	D1 Age Range	D2 Age Range	D3 Age Range	D4 Age Range	Comments
69	7/9/2017	Sunday	11:04 AM	Angle	Daylight	Clear	Dry	D1:(Inattention) D2:(No Improper Driving)	45-54	45-54	NA	NA	V1 and V2 were traveling SB on Newport Ave when they sideswiped.
70	7/27/2017	Thursday	2:41 PM	Rear-end	Daylight	Rain	Wet	D1:(Unknown) D2:(No Improper Driving)	25-34	25-34	NA	NA	V1 and V2 were traveling NB on Newport Ave and both making right turns on to Beale St when a pedestrian stepped off the curb. V1 stopped suddenly and V2 crashed into V1.
71	8/10/2017	Thursday	12:45 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Failed to yield right of way) D2:(No Improper Driving)	16-20	21-24	NA	NA	V2 was traveling WB on Beale St when V1 made a left out of Old Colony Ave and sideswiped V2.
72	9/7/2017	Thursday	12:03 PM	Angle	Daylight	Clear	Dry	D1:(Failed to yield right of way) D2:(No Improper Driving) D3:(No Improper Driving)	25-34	>84	25-34	NA	V1 and V3 were traveling NB on Newport Ave making a left turn to Beale St. V2 was traveling SB on Newport Ave. V1 did not yield to V2 and crashed into V2. V3 was going around the accident when V1 backed into V3.
73	9/29/2017	Friday	9:00 AM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(No Improper Driving) D2:(Unknown)	35-44	35-44	NA	NA	V1 and V2 were traveling WB on Beale St when they sideswiped.
74	10/13/2017	Friday	3:15 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(Inattention) D2:(No Improper Driving) D3:(No Improper Driving)	55-64	21-24	45-54	NA	V1, V2, and V3 were traveling SB on Newport Ave. V3 accelerated too soon and crashed into V2 who then crashed into V1.
75	12/2/2017	Saturday	4:40 PM	Sideswipe, same direction	Daylight	Clear	Dry	D1:(No Improper Driving)	75-84	75-84	NA	NA	V1 and V2 were traveling NB on Newport Ave when they sideswiped.
76	12/9/2017	Saturday	1:12 PM	Single Vehicle Crash	Daylight	Snow	Snow	D1:(Unknown)	Unknown	Unknown	NA	NA	V1 was traveling NB on Newport Ave when it crashed into the Quincy Fire box. Vehicle left the scene of the accident.
77	12/15/2017	Friday	4:59 PM	Sideswipe, same direction	Dark - lighted roadway	Clear	Dry	D1:(No Improper Driving) D2:(Inattention)	25-34	55-64	NA	NA	V1 was traveling WB on Beale St when V2 made a left out of Old Colony Ave and sideswiped V1.







SYMBOLS
- MOVING VEHICLE
- BACKING VEHICLE
- NON-INVOLVED VEHICLE
- PEDESTRIAN
- BICYCLE
- ANIMAL
- PARKED VEHICLE
- FIXED OBJECT

TYPES OF CRASH
- HEAD ON
- REAR END
- ANGLE
- TURNING MOVEMENT
- SIDE SWIPE
- OUT OF CONTROL
- NIGHT TIME CRASH

SEVERITY
- INJURY
- FATAL

COLLISION DIAGRAM

AECOM

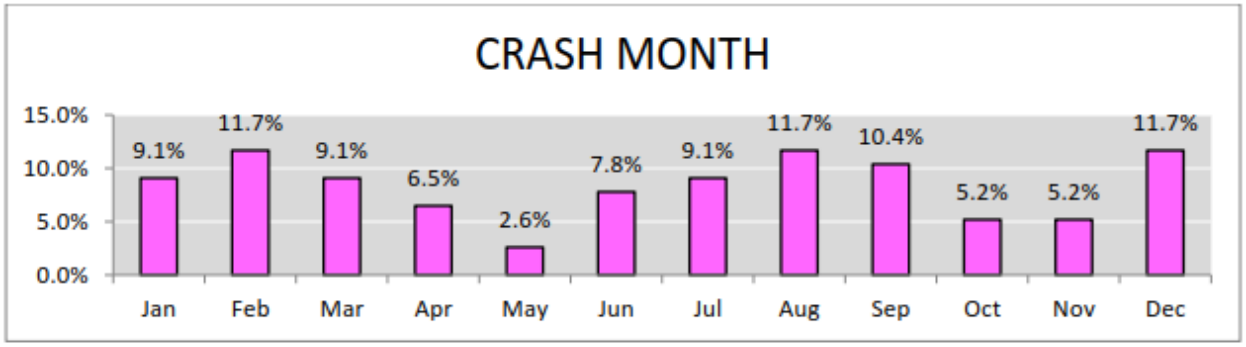
QUINCY, MA

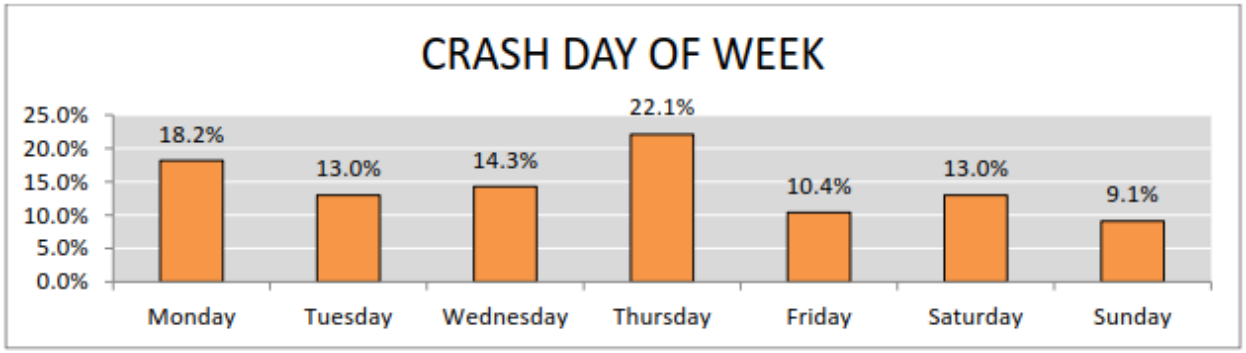
NEWPORT AVE AT
BEALE ST

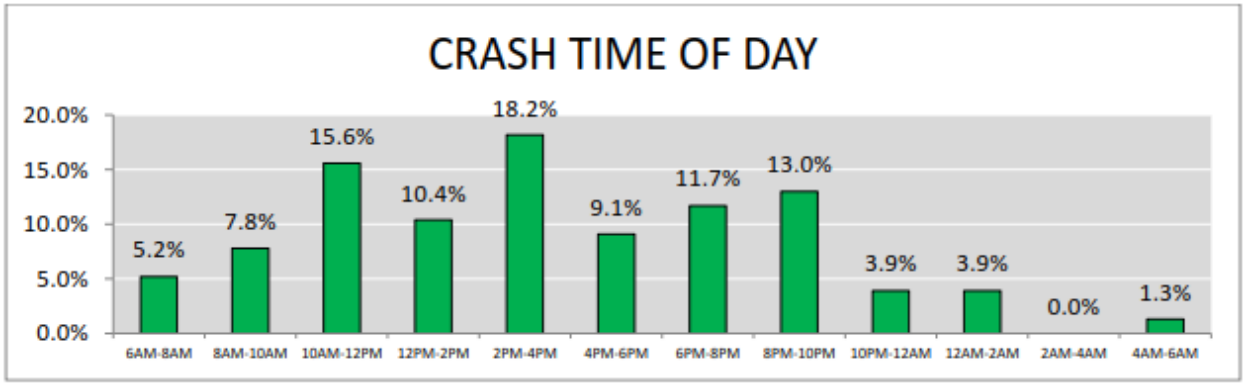
TIME PERIOD ANALYZED: JANUARY 1ST, 2015 TO DECEMBER 31ST, 2017
SOURCE OF CRASH REPORTS: LOCAL POLICE
DATE PREPARED: NOVEMBER 2018

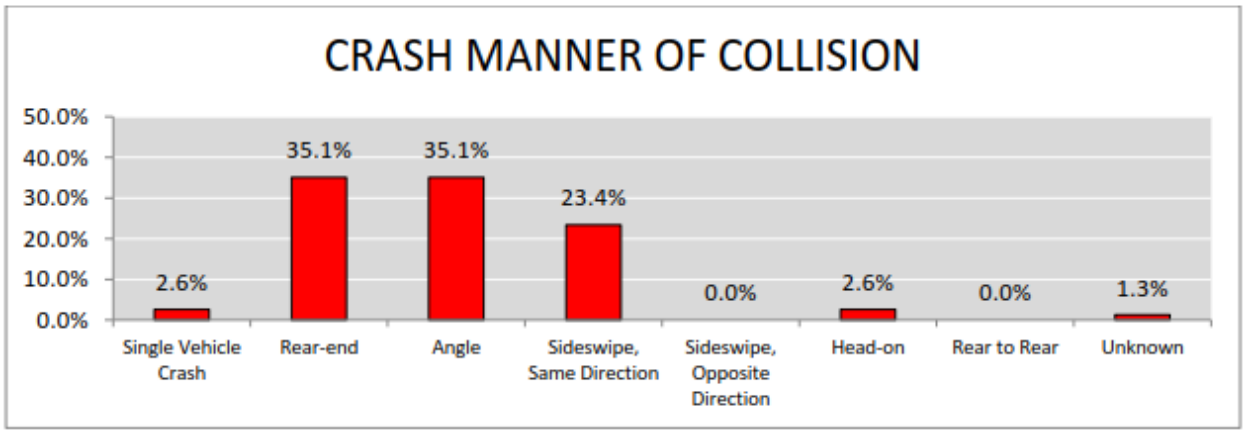
Crash Data Summary Tables and Charts (2015-2017)

Newport Avenue at Beale Street, Quincy, MA



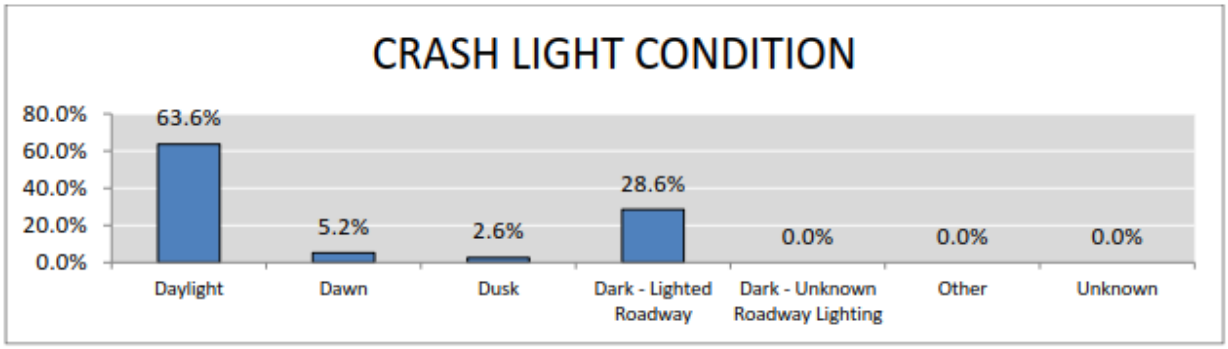


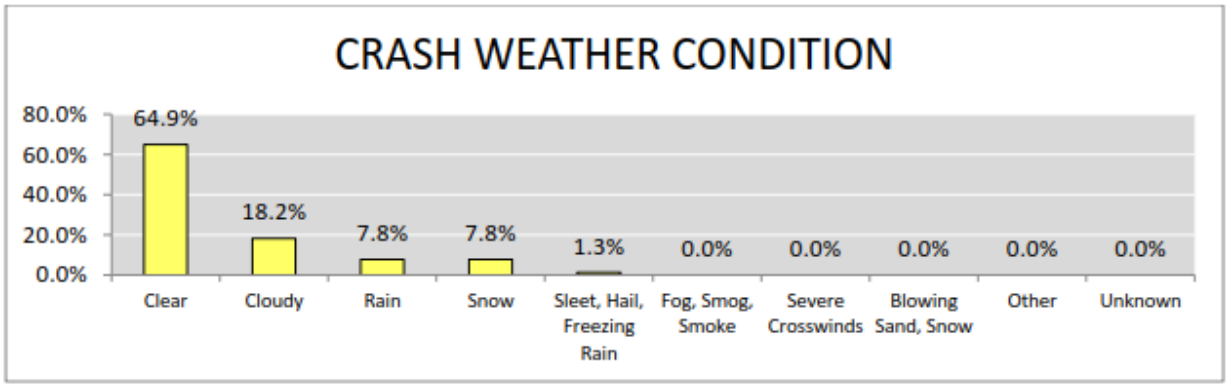


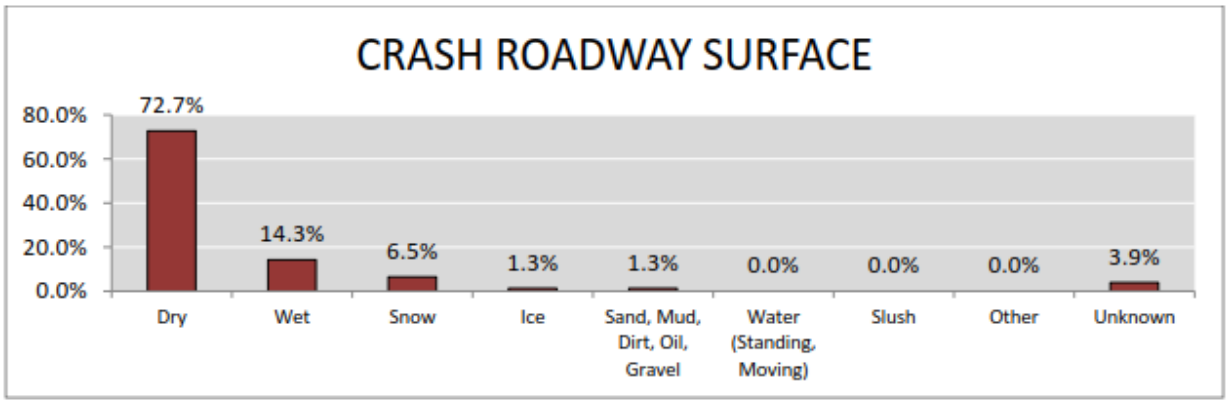


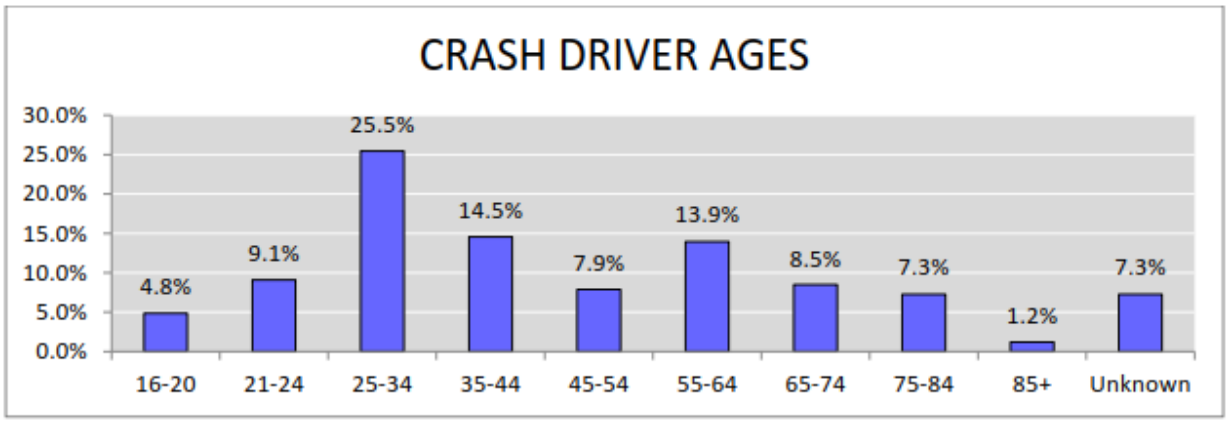
Crash Data Summary Tables and Charts (2015-2017)

Newport Avenue at Beale Street, Quincy, MA









Appendix D. Road Safety Audit References

Road Safety Audit References

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