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DEPARTMENT OF PLANNING and
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Mass Ave/Appleton Design Review Committee

From: Daniel Amstutz, Senior Transportation Planner, Department of Planning and Community Development

Date: September 9, 2021

RE: Background and Overview of Mass Ave/Appleton Intersection Short-Term Safety Recommendations

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At its July 8, 2021, meeting the Mass Ave/Appleton Design Review Committee ("the Committee") voted to recommend Short-Term Option 2: Bike Lanes for approval by the Select Board to improve safety at the Mass Ave/Appleton Street/Appleton Place intersection and nearby Mass Ave corridor.

The Committee was formed after the death of Charlie Proctor in May 2020, who was struck by a motorist and killed at the intersection of Mass Ave and Appleton Street while he rode his bicycle eastbound on Mass Ave. The Board approved the formation of the Committee in June 2020, and the first meeting of the Committee was in March 2021. The Committee held four meetings through spring and summer, received dozens of public comments during this time, and worked with Green International, the Town's transportation consultant, to develop several iterations of potential short-term alternatives to improve safety at the intersection and the Mass Ave corridor near the intersection.

The Committee reviewed a total of six potential short-term alternatives over the course of its meetings. The Committee reviewed two final short-term alternatives at its July 8 meeting and voted 8-3 to recommend Short-Term Option 2: Bike Lanes to the Board, pursuant to review by the Department of Public Works and discussion with Green International on any necessary tweaks to the concept. This review was completed on July 22 and resulted in small adjustments to the recommended Option that did not require an additional Committee meeting for confirmation. This final Short-Term Option 2 is presented to the Board as the recommended option, along with Short-Term Option 1: Shared Lanes which was also considered by the Committee during its July 8 deliberations.

Further information about the background of the project and Committee, the public engagement and review process, and other information is included on the following pages.

Background and Existing Conditions

In May 2020 Charlie Proctor was struck by a motorist and killed at the intersection of Mass Ave and Appleton Street while he rode his bicycle eastbound on Mass Ave. His partner, Alison Piasecki, was also injured in the crash. The motorist was turning left onto Appleton Street from Mass Ave at the time of the crash.

Mass Ave and Appleton Street/Appleton Place is a four-way intersection with Appleton Street and Appleton Place intersecting Mass Ave at wide angles on the south side of Mass Ave. The intersection has a flashing yellow signal for Mass Ave, to indicate caution to travelers entering the intersection, and flashing red signals for Appleton Street and Appleton Place, which are stop-controlled. The signals generally operate as pedestrian signals, as they go all red when a pedestrian pushes the button to cross the street. Nearby land uses include local businesses, residences, the St. Athanasius the Great Greek Orthodox Church, the Arlington Heights Nursery School, and Ottoson Middle School.

Frequent safety issues have been cited related to the Mass Ave and Appleton Street/Appleton Place intersection. Existing safety issues that have been identified include:

- Confusion about the flashing yellow/flashing red operations;
- The wide expanse of pavement between Appleton Street and Appleton Place which allow for early, wide, and fast left turns from Mass Ave onto Appleton Street;
- The sharp angle of the Appleton Street approach limits the sight distance for drivers to see traffic on the Mass Ave eastbound approach, and similarly the sharp angle on the Appleton Place approach for drivers coming from Appleton Place attempting to go westbound have a difficult time seeing westbound drivers on Mass Ave;
- The busy student crossing activities during Ottoson Middle School arrival/dismissal heighten safety risks for crossing students;
- Significant solar glare limits visibility in the afternoon rush hour periods; and
- High speeds by drivers (and also bicyclists) approaching the intersection, especially going eastbound from Arlington Heights, increase stopping sight distance and reduce maneuverability in the event of a conflict with another vehicle, bicyclist, or pedestrian.

The intersection of Mass Ave and Appleton Street/Appleton Place has been previously brought up as an intersection of concern in the area. The intersection was chosen for study as part of the FFY 2011 Safety and Operations Analyses at Selected Boston Region MPO Intersections, a project conducted by the Central Transportation Planning Staff (CTPS) for the Boston MPO. The final report for the Mass Ave/Appleton intersection was completed in March 2012 and included safety and operations analyses and improvement strategies for this location. In general, the CTPS report recommended geometric changes to the intersection, as well as the installation of a fully-actuated traffic signal.[1]

[1] This report can be found at:
https://www.ctps.org/data/pdf/studies/highway/2011_safety_operations/Arlington_Memo.pdf

Traffic and crash data were collected in October 2020 to support analysis of options at the intersection and to provide a baseline of recent traffic conditions. Vehicle traffic volumes along Mass Ave range from approximately 10,000 vehicles per day to 12,300 vehicles per day. Traffic speeds were also collected, showing an average speed of 25 mph on Mass Ave and an 85th percentile speed of about 28 mph (typically the metric used to determine speed limits as part of national and state guidance on speed zoning).[2] Vehicle classification shows heavy vehicle volumes (i.e. large trucks) at 5.0%-6.5% of all traffic. Crash data compiled by Green International identified thirteen (13) crashes at this intersection between February 2017 and June 2020, including the fatal bicycle crash in May 2020 and a bicycle crash with serious injury in June 2020. Relevant data sheets are provided as attachments with this report.

Mass Ave/Appleton Design Review Committee and Public Engagement Process

Following the fatal crash that killed Charlie Proctor in May 2020, the Select Board approved the creation of the Mass Ave/Appleton Design Review Committee at its June 8, 2020 meeting. The Town Manager was given authority to interview and select members for the Committee, which convened its first meeting on March 23, 2021 (virtually due to COVID-19 restrictions). The committee has eleven (11) members, including representatives from Town departments, related Town committees, a business representative, and interested residents. A representative from Ottoson Middle School was also identified after the first meeting. The Department of Planning and Community Development (DPCD) administered and chaired the Committee. A list of members is included as an attachment with this report.

The Committee's charge initially included just Mass Ave and Appleton Street/Appleton Place, but a subsequent Board meeting added the intersections of Mass Ave/Lowell Street and Mass Ave/Forest Street/Burton Street and the adjoining corridor as part of the scope of the Committee. In general, the Committee focused its initial work on Mass Ave and Appleton Street/Appleton Place, although the final short-term options reviewed include some safety improvements related to the intersections with Lowell Street and Forest Street/Burton Street.

The Committee met three more times after its initial meeting, on April 15, May 27, and July 8. All meetings were held virtually due to COVID-19 restrictions and to assist participation of Committee members and the public who would have difficulty attending an in-person committee meeting. Committee meetings averaged 40 attenders per meeting, including Committee members, with about 28 members of the public per meeting. Meetings were originally intended to be 60-90 minutes in length, but typically lasted closer to two hours, with continued attendance and participation from Committee members and the public for the length of the meeting. Public participants were allowed to comment and ask questions during the meeting, along with Committee members, and public comments via email were also shared with the committee.

Town staff also communicated directly with interested residents, abutters, and businesses about the project, and attended an in-person meeting at the home of Barbara McCauley, an abutter at 1184 Mass Ave, on July 7. At least a dozen members of the public, including abutters

[2] MassDOT procedures for speed zoning can be found at: https://www.mass.gov/massdot-speed-zoning

and local business representatives, attended this meeting to discuss the short-term concepts under review by the committee, as well as staff from DPCD, DPW, and APD. In addition, Committee member Kim Cayer, who is the business representative and works for the Children's Room, visited businesses to discuss the project and get more information about the parking situation particularly for the businesses on the north side of Mass Ave between Appleton Place and Forest Street/Burton Street.

The public is also more generally aware of the issues at Mass Ave and Appleton due to the evening left turn prohibition that is being set up by the Arlington Police Department every day of the week during times where solar glare is most prevalent. APD began setting up this prohibition shortly after the crash that killed Charlie Proctor and continued it until the end of fall 2020; they started it again at the beginning of spring 2021 and intend to continue it through October 2021.

Minutes of the Committee meetings, including approved minutes for March and April, and draft minutes for May and July, can be found on the Committee's Agenda and Minutes page.

Short-Term Concept Review Process

The Town retained the transportation consulting services of Green International to assist with developing concepts to make short-term improvements to the intersection to be reviewed by the Committee. Between the fatality in May 2020 and the first Committee meeting in March 2021, the Town also received other short-term concepts designed by Arlington residents. The Committee began its work by reviewing the community member concepts and the initial concepts developed by Green International, as well as more than 50 comments to the Select Board from its June 8, 2020 meeting. During the Committee meetings, conversation and public commentary was frequent and encouraged, and many opinions were shared about the best design for the intersection.

Over the course of the Committee meetings and from public comments received by the committee, several themes emerged guiding the design considerations for the Town and Green International in revising the short-term concepts:

- Prioritize safety in concept design and elements
- Vehicle speeds on Mass Ave are too high and should be reduced
- Slow down left turn onto Appleton Street from Mass Ave, which currently can be taken without slowing
- Reduce the number of vehicle conflicts at the Mass Ave/Appleton intersection
- Protect pedestrians and cyclists and increase their safety
- Focus on short-term improvements that can be installed as soon as possible
- Improve functionality of flashing signal at the intersection and reduce illegal red-light running
- Reduce impacts to on-street parking

More than 25 written comments (via email) were received for the Committee's consideration over its four meetings, beyond the committee member and public input shared at the committee meetings.

Green International produced six different iterations of short-term concepts for the Committee's review. For the iterations produced for the May 27 and July 8 meetings, Green International also provided a list of pros and cons for each concept.

In between the Committee meetings, Town staff met with Green International to discuss revisions to the concepts based on Committee member and community feedback and provided comments on the revisions in advance of the committee meetings. As part of the concept development, DPW, APD, and Green International tested a curb extension on the south side of the intersection over two weekday evenings in mid-May using traffic cones to reconfigure the traffic lanes. The goal of this trial was to mimic the geometric changes proposed at the intersection, particularly where Appleton Street and Appleton Place intersect at Mass Ave. The purpose of the curb extension is to remove the ability of drivers to take wide left turns up Appleton Street at high speeds and narrow the conflict area between left turning drivers and opposing traffic. The trial was reportedly successful at slowing turns and better organizing traffic operations at the intersection. It was discussed at the May 27 meeting and is described in the draft meeting minutes on the Committee's web page.

Recommended Option and Discussion

At the July 8, 2021 Mass Ave/Appleton Design Review Committee meeting, two final short-term options were presented, revised from previous iterations based on committee and public feedback to balance multiple competing needs at the intersection and along the roadway. The two options were Short-Term Option 1: Shared Lanes and Short-Term Option 2: Bike Lanes. The essential difference between the two is whether to provide dedicated bicycle lanes on Mass Ave to improve biking safety or to leave the existing condition of requiring cyclists to share the traffic lanes with drivers and adding new shared-lane markings to increase driver awareness and direct cyclists to their positioning in the lane. The Committee voted 8-3 to recommend Short-Term Option 2: Bike Lanes to the Select Board for approval, pending additional review by DPW and a discussion with Green International to understand the process of developing this final concept and any further tweaks that would be necessary. Town staff from DPW and DPCD, a member of the Design Review Committee, and Green International met on July 22. The outcome of this meeting was several small revisions to the pavement markings and some additional signage, but no change to most of the concept recommended by the Committee.

Option 2, recommended by the Committee, responds to the themes noted in the section "Short-Term Concept Review Process" in the following manner:

- Increase pedestrian safety with visibility improvements at intersections and a new flashing beacon at Mass Ave and Forest Street/Burton Street
- Reduce vehicle conflicts by making Appleton Place one-way away from Mass Ave and slowing left turns and narrowing conflict space for left turns from Mass Ave onto Appleton Street

- Create dedicated bicycle lane to increase cyclist safety and comfort, with bright green pavement markings to delineate major conflict zones
- Reduce speeds by narrowing the travel lanes and installing speed feedback signs approaching the corridor between Mass Ave/Lowell Street and Mass Ave/Forest/Burton
- Relocate westbound bus stop so it does not conflict with the crosswalk
- Improve safety for children walking, biking, or taking the bus to Ottoson Middle School
- Limit parking impacts as much as possible, prioritizing on-street parking on the north side of the street between Appleton Place and Forest Street/Burton Street where businesses are clustered
- Materials needed can be quickly implemented, including paint, signs, and temporary materials (speed feedback and rapid flashing beacon may have longer installation timeframes)

In addition, Option 2 supports the following strategies outlined in Connect Arlington, the Sustainable Transportation Plan:

- Strategy A.2: Ensure all roadway design projects adhere to the Town's adopted Complete Streets policy and guidelines
- Strategy A.3: Prioritize investments that improve safety at intersection and along road segments with the greatest pedestrian and bicyclist conflicts
- Strategy C.4: Enhance pedestrian safety through design improvements at intersections and crossings
- Strategy D.1: Prioritize new bicycle facilities along corridors currently designated as Arlington's "lane-sharing network"
    - Sub-Strategy D.1.1: Complete the bicycle lane network along all of Mass Ave
    - Sub-Strategy D.1.2: Prioritize new bicycle lane projects that connect to existing bicycle facilities to create a safe, contiguous bicycle lane network
    - Sub-Strategy D.1.3: Prioritize corridors that provide safe facilities to schools and other community facilities
- Strategy D.5: Study potential to redesign major intersections and rotaries/roundabouts to provide dedicated bicycle lanes that improve rider safety and comfort
- Strategy G.3: Rethink the curb and design it to support competing users and needs more effectively
- Strategy H.3: Test before you invest

Green International also produced a list of pros and cons for the final Options which are included as an attachment.

In general, Option 1 includes most of the same elements of Option 2, with the primary differences being how bicyclists are accommodated and the impacts to on-street parking. Option 1 requires the removal of approximately five parking spaces on Mass Ave, to improve visibility and pedestrian safety. Option 2 requires the removal of approximately 22 parking spaces on Mass Ave, most of which are located on the south side of Mass Ave between Appleton Place and Burton Street, also to improve visibility but primarily to install a bicycle lane on the eastbound side of Mass Ave. Although Option 1 provides many of the benefits of Option 2, improves on the existing conditions, and limits the amount of on-street parking loss, one of

the most important considerations of the project – bicycle safety – is not as well served as in Option 2. Below is a discussion of the bicycle safety, parking issues, and comparison of estimated installation costs for the Board's consideration.

Bicycle Accommodations

Option 2, the recommended option, provides dedicated bicycle lanes on Mass Ave between the end of the existing bicycle lanes near Richardson Ave and Forest Street/Burton Street. Green pavement markings highlight significant conflict areas where drivers must cross the path of the bike lane at intersections. Parts of the bike lane are buffered from on-street parking by a 2–3-foot hatched area to limit "dooring" incidents. Option 1 keeps the existing shared-lane situation but adds shared-lane markings ("sharrows") with green pavement markings under them to enhance their visibility. The sharrows would be placed close to the center of the travel lane to direct cyclists to mix with car traffic. Option 1 has a limited impact to on-street parking because it does not provide any dedicated space to bicyclists.

As the primary goal of the committee's work is to increase the safety of the Mass Ave and Appleton Street/Appleton Place intersection and nearby intersections, the recommended option should be viewed from the lens of how it improves safety for all users, but particularly cyclists. A recent Research Review conducted for the American Association of State Highway and Transportation Officials (AASHTO) Council on Active Transportation noted that safety research finds that "overall, on-road striped bike lanes have positive safety benefits" with studies finding that bike lanes are associated with reductions in crashes and improved cyclist safety.[3] A 2018 literature review for the Federal Highway Administration's Resource Guide for Separating Bicyclists from Traffic also states that "research over the last 40 years has shown that providing bikeways which separate bicyclists from high-volume and high-speed traffic improves safety, compared to operating within a shared travel lane."[4] A study from 2019 by the University of Colorado at Denver found that "bicycling infrastructure is significantly associated with fewer fatalities and better road-safety outcomes" for all road users, based on 13 years of data from 12 large U.S. cities.[5]

By contrast, shared lanes and shared lane markings have poor safety records and are often used as a baseline condition when studying the safety effects of bicycle facilities. The FHWA Literature Review: Resource Guide for Separating Bicyclists from Traffic noted that "the vast majority of crashes in the US occur in shared lanes. Analysis of crash data in the 1990s found over 75 percent of bicyclists crashes occurred in shared lanes."[6] The report also notes that "research on roadway design preferences suggests that the majority of bicyclists (current or potential) and drivers do not feel comfortable on multi-lane or higher-speed roadways with [shared-lane markings], suggesting that [shared-lane markings] should be used with caution in

[3] AASHTO Council on Active Transportation, "AASHTO Council on Active Transportation Research Roadmap: Research Review" (July 2021), pg. 74. http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-123-02AASHTOCATResearchReview.pdf

[4] Federal Highway Administration, "Literature Review Resource Guide for Separating Bicyclists from Traffic" (July 2018), pg. 40. https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18030.pdf

[5] Rachel Sturtz, "Cycling lanes reduce fatalities for all road users, study shows." *ScienceDaily*, May 29, 2019. https://www.sciencedaily.com/releases/2019/05/190529113036.htm

[6] FHWA, "Literature Review Resource Guide for Separating Bicyclists from Traffic" (July 2018), pg. 33

those situations."[7] The Federal Highway Administration's Bikeway Selection Guide notes that, when it comes to intersections, cyclists operating in shared lanes "are most commonly associated with bicycle crashes, including fatal and non-fatal crashes, on U.S. roadways," among other behaviors at intersections.[8] Additionally, "research in Vancouver and Toronto illustrate the overall trend showing the provision of bikeways improves safety outcomes for bicyclists over shared lanes."[9]

National and regional criteria for determining the appropriate bike facilities in specific situations based on traffic volumes and speeds suggest that shared lane markings are not an appropriate treatment for Mass Ave. A review of bicycle facility selection criteria from 11 different sources indicates that shared lanes are appropriate only on low-volume and low-speed streets (generally no more than 2,000 – 5,000 vehicles per day and 25-30 mph or less) except for the most confident cyclists.[10] A white paper published by the City of Cambridge in June 2014 on cycle tracks includes a section noting that shared lanes are not appropriate for streets with speeds greater than 30 mph, and identifies other challenges with shared lanes including requiring cyclists to "take the lane" and mix with car traffic, and exposes users to high motor vehicle pollution.[11] More recent guidance on bicycle facility selection in the 2020 Cambridge Bicycle Plan notes that shared lanes are appropriate for roadways with speeds less than or equal to 25 mph.[12] Given the volume and speed data collected by Green International in October 2020 – which showed Mass Ave traffic volumes between 10,000-12,300 and 85th percentile speeds almost to 30 mph – shared lane markings are not appropriate based on updated guidance. In fact, most guidance on bike facility selection would recommend that protected or separated bike lanes or a shared use path would be most appropriate for Mass Ave. The trend in research and guidance for improving cyclist safety and comfort is towards more separation, not less.

Parking

On-street parking would be impacted in both Option 1 and Option 2, either to increase visibility along the Mass Ave corridor for pedestrians, bicyclists, and drivers, or to install a bicycle lane to increase bicycle safety. During the concept review process, iterations of short-term concepts were reviewed that would have had varying impacts to on-street parking, primarily on Mass Ave. At the May 27 Committee meeting, options were reviewed that would have had a substantial impact to on-street parking on Mass Ave between Clark Street and Forest Street/Burton Street. Previous iterations included a dedicated left-turn lane from Mass Ave to Appleton Street/Appleton Place as well as bike lanes that would have squeezed out parking on both sides of the street. After the discussion at this Committee meeting and in consideration of

[7] Ibid, pgs. 34-35.
[8] Federal Highway Administration, "Bikeway Selection Guide" (February 2019), pg. 21.
[9] FHWA, "Literature Review Resource Guide for Separating Bicyclists from Traffic" (July 2018), pg. 33.
[10] Ibid, pg. 42.
[11] City of Cambridge, "Cycle Tracks: A Technical Review of Safety Design, and Research" (June 2014), pg. 10. https://www.cambridgema.gov/~/media/Files/CDD/Transportation/Bike/Final_CycleTrackWhitePaper_20140722.pdf
[12] City of Cambridge. "Cambridge Bicycle Plan 2020: Chapter 4: Bicycle Facility Toolbox." (2020), pg. 4-16. https://www.cambridgema.gov/-/media/Files/CDD/Transportation/Bike/bikeplan/2020/finalchaptersjune2021/4facilitytoolbox_20210618.pdf

additional public comment from businesses and abutters, Town staff asked Green International to revise their concepts to reduce parking impacts for adjacent businesses (particularly on the north side of Mass Ave) while keeping safety improvements for all users and focusing on what could be implemented quickly. This resulted in removing the left-turn lane from consideration in the final concepts presented at the July 8 meeting, not only because of the parking impacts, but also because the installation of a turn lane would have required relocating the existing crosswalk on Mass Ave and triggered other necessary improvements that may have delayed the project.

DPCD has reviewed the area around Mass Ave and Appleton Street/Appleton Place to further our understanding of the on-street (public) parking supply near the project. A map is attached showing the location of parking spaces on Mass Ave between Richardson Ave and Fessenden Road, and on-street parking on adjacent public streets. The area of the map was drawn to include on-street public parking spaces that are less than a five-minute walk from the main commercial area on the north side of Mass Ave between Appleton Place and Forest Street/Burton Street.

There are estimated to be 103 on-street parking spaces on Mass Ave in this review area, and 41 additional on-street spaces on adjacent streets, for a total of 144 on-street parking spaces (including two handicap placard [HP] spaces). This estimate should be considered conservative, as only one space is marked in this review area – a HP space on Mass Ave. This means that it is likely that more cars could be physically parked along these streets. Also, this does not include any on-street parking on private ways. The on-street parking spaces in this area are all served by sidewalks in generally fair condition, and accessible routes to the business area are provided. Crosswalks are also provided to allow crossing of Mass Ave at Forest Street and Burton Street, and the Appleton Street/Appleton Place intersection functions as a protected pedestrian crossing.

As noted above, 22 parking spaces are expected to be impacted by the safety improvements proposed. Although this is significant, improvements to safety at this intersection will make parking farther away easier than it is currently because it will address pedestrian safety concerns for those parking and walking as well as people walking in the neighborhood. Option 2 also prioritizes retention of parking spaces on the primary business side of Mass Ave in this area. However, a formal parking utilization and turnover study has not been completed due to the closure of schools for the summer, uncertainties from the impacts of COVID-19, and general traffic volume reductions during this season. If necessary, Town staff could a parking utilization and turnover study this fall to gather more detail about parking conditions in this area and provide a more complete report.

Estimated costs

Green International has produced estimates of the costs of implementing the short-term recommendations in Option 2. Their cost estimate is $94,797.50 for all elements of the plan, including the radar speed feedback signs and the flashing beacon at Mass Ave and Forest/Burton Street, which are the most expensive elements of the Option. By comparison,

the estimated cost to implement Option 1 is $81,015.50, a difference of just $13,782. These cost estimates are included as attachments to this report.

Next Steps

Given the costs associated with Option 2, it is possible that some items will take longer to implement than others. The following is a summary of types of improvements proposed in Option 2 and their general timeframes for implementation.

- Pavement markings: this includes eliminating existing pavement markings and installing new pavement markings for the bike lane and high-friction surface treatment. This would need to be completed as soon as possible, as weather conditions and decreasing temperatures have a significant effect on the ability to apply markings. Generally, DPW ends construction for the season in mid-November. Pavement markings would need to be applied by the end of October. DPW has released a pavement marking contract with bids due by the end of September, as this work would need to be completed by a contractor.
- Signage: this includes making Appleton Place one way and safety signage for the intersection and bike lane, and proposed turn restrictions. Generally speaking, these can be installed the fastest, and installation is not temperature-dependent. DPW will install the necessary signage.
- Flexible delineators/temporary traffic control materials: these materials would be used to temporarily extend the curb on the south side of where Appleton Street and Appleton Place meet Mass Ave (see Options 1 or 2 for a diagram of this extension), along with pavement markings. Both options also recommend installing delineators in the yellow centerline on Mass Ave at the intersection to prevent early turns from Mass Ave onto Appleton Street. Although these can be installed quickly, they may need to be removed for the winter or at least during winter storm events because they could be damaged during snow removal. DPW will install these materials.
- Electronic Speed Feedback signs and Rectangular Rapid Flashing Beacon (RRFB): these are the most expensive elements of the concepts and are met to slow down drivers and make a safer crossing at Mass Ave and Forest/Burton Street. Due to costs and possible lead times to get equipment, it is likely they will not be able to be installed until spring 2022 at the earliest.

These short-term improvements will provide much needed qualitative and quantitative data while the Town and Committee continue review long-term improvements to the intersection and nearby corridor. Town staff will monitor the improvements and consider data such as traffic speeds, crashes, and concerns and observations from staff and residents.

APD has also committed to continuing the left turn lane prohibition during times of significant afternoon and evening solar glare, generally April to October. APD is using a Sector Officer to set up the left turn prohibition.

Over the course of discussing the different concepts developed by Green International, the Committee and members of the public brought up concerns with the intersections of Mass Ave

and Lowell Street and Mass Ave and Forest Street/Burton Street. Given that the Board has requested the Committee to review these intersections as well, the Committee should make progress on determining short-term recommendations for these intersections as its next step. The Committee will have a clearer idea of how to address these other intersections once the Board has approved short-term recommendations for Mass Ave and Appleton Street/Appleton Place.

Town staff will begin determining funding available for longer-term improvements and a larger design process to address transportation issues in this area. Staff have considered MassWorks as a possible avenue for funding a large transportation project, given the approval of the hotel project at Mass Ave and Clark Street (1207-1211 Mass Ave), the proposed project at 1165R Mass Ave, and other potential redevelopment in the area. Staff may also consider Complete Streets Program funding through MassDOT or other grant programs that would fit within the scale and goals of this effort.

Conclusion

The recommendation of the Mass Ave/Appleton Design Review Committee is for the Board to approve Short-Term Option 2: Bike Lanes for implementation at the Mass Ave/Appleton intersection and nearby corridor. This recommendation was made after consideration of several different short-term iterations, multiple committee meetings with public comment during and outside the meetings, and with a focus on improving safety for all modes to prevent another tragic fatality like the one that precipitated this process. Option 2 will provide the greatest degree of traffic safety for cyclists, pedestrians, and drivers, while minimizing on-street parking impacts to abutting residents and businesses.

If the Select Board approves this Option, Town staff will work to implement the improvements as quickly as possible, as the existing street conditions are still a hazard for all users.

I would be glad to discuss this further, should you have any questions about this report.

Attachments:

- Short-Term Option 2: Bike Lanes
- Short-Term Option 1: Shared Lanes
- Green International Pros & Cons for Options 2 & 1
- Green International Cost Estimates for Options 2 & 1
- Volume and Speed Data Collected for Mass Ave, Appleton Street, and Appleton Place
- Connect Arlington Sustainable Transportation Plan Supporting Strategies (from the final endorsed document)
- Written Comments Received by the Committee
- Map of Parking Supply Review Area Near Mass Ave and Appleton Street/Appleton Place