



Land Use Committee Report

City of Newton In City Council

Tuesday, May 5, 2020

Present: Councilors Lipof (Chair), Kelley, Greenberg, Auchincloss, Markiewicz, Downs, Bowman, Laredo

Also Present: Councilors Crossley, Albright, Ryan, Krintzman, Norton, Gentile, Wright

City Staff Present: Chief Planner Neil Cronin, Associate City Solicitor Jonah Temple, Senior Planner Michael Gleba, Director of Planning and Development Barney Heath, Director of Transportation Planning Nicole Freedman

All Special Permit Plans, Plan Memoranda and Application Materials can be found at http://www.newtonma.gov/gov/aldermen/special_permits/current_special_permits.asp. Presentations for each project can be found at the end of this report.

#176-19(2) Special Permit Petition to allow parking within the setback at 1188 Chestnut Street
TARA POTTEBAUM AND DOUG ROONEY petition for an EXTENSION OF TIME to EXERCISE SPECIAL PERMIT/SITE PLAN APPROVAL for Council Order #176-19 approved on August 12, 2019 and allow the construction of an addition to the existing single-car garage, extending the non-conforming front setback, parking within the setback and within five feet of the street and relief to exceed the allowable FAR at 1188 Chestnut Street, Ward 5, Newton Upper Falls, on land known as Section 51 Block 40 lot 22, containing approximately 5,807 sq. ft. in a district zoned MULTI RESIDENCE 1. Said EXTENSION OF TIME to run from August 12, 2020 to August 12, 2021. Ref: Sec. 7.3.3, 7.4, 3.2.3, 7.8.2.C.2, 5.1.7.A, 5.1.13, 3.2.11 of Chapter 30 of the City of Newton Rev Zoning Ord, 2017.

Action: Land Use Approved 7-0 (Councilor Downs not Voting)

Note: Committee members expressed no concerns relative to the request. Councilor Kelley motioned to approve the extension of time which carried 7-0 (Councilor Downs not Voting).

#145-20 Petition to allow accessory apartment exceeding 1,000 sq. ft. at 169 Hunnewell Avenue
TOM DOWD petition for SPECIAL PERMIT/SITE PLAN APPROVAL to convert space on the third floor of the existing two-family structure to allow an interior accessory apartment exceeding 1,000 sq. ft. at 169 Hunnewell Avenue, Ward 1, Newton, on land known as Section 71 Block 32 Lot 01, containing approximately 9,568 sq. ft. of land in a district zoned MULTI RESIDENCE 1. Ref: Sec. 7.3.3, 7.4, 6.7.1.D.2 of the City of Newton Rev Zoning Ord, 2017.

Action: Land Use Approved 5-1-2(Councilor Kelley opposed, Councilors Laredo, Markiewicz abstaining; Public Hearing Closed 05/05/2020)

Note: Attorney Jordana Greenman represented the petitioner Tom Dowd. At the initial public hearing on April 14, 2020, Atty. Greenman indicated that it was the petitioner's intent to establish the accessory apartment and turn the three units into condominiums. The Committee shared concerns relative to the intent of the proposal, noting that turning accessory apartments into condo units was not the intent of the accessory apartment ordinance.

Atty. Greenman updated the Committee. She noted that the petitioner has worked with the Planning Department and Law Department since the April 14, 2020 meeting to identify next steps. Atty. Greenman explained that of the three units in the building, two units will be turned into condo units. The third-floor accessory unit will be tied to one of the condo units and will be governed by the requirements for accessory apartments. Approval of the special permit will be subject to the submission of condo docs and annual submission of an affidavit that the condo and/or accessory unit is owner occupied. If ownership of the condo (with accessory unit) is transferred, the City will be notified, and the new owner will have to reestablish the accessory apartment. Atty. Greenman noted that there is small area that encroaches on City land and requires a license agreement. Associate City Solicitor Jonah Temple confirmed that the conditions that need to be fulfilled can occur after approval of the special permit.

Committee members expressed concern relative to the ownership of the units and questioned whether a trustee or a beneficiary of a trust that owns the building constitutes owner occupied. Atty. Temple stated that as long as one owner of the accessory unit resides in either the primary condo unit or the accessory unit, it is considered owner occupied. Inspectional services will be charged with verifying that the signee of the affidavit is an owner.

The Public Hearing was Opened

Marc Resnick, is the second owner of the property which is owned 50%/50%. He explained that after the third-floor unit is converted into an accessory apartment, they will sell the first-floor condo unit. Sale of the first-floor condo unit will lower the cost of the mortgage. It is then expected that the petitioner will live in the third-floor unit and rent the second-floor unit (the primary condo unit) to offset the cost of the mortgage. The petitioner may choose to live in the primary unit and rent the accessory unit as his family expands.

It was noted that the financing for the property was obtained in a way that the ownership cannot easily be changed at this time. The Committee noted that there are controls in place to ensure that accessory units are occupied. It was noted that the request for a special permit is to allow an accessory apartment exceeding 1,000 sq. ft.. The Committee members noted that when the accessory apartment ordinance was approved, it was to allow people to reside in the City and offset their expenses. The Planning Department expressed no concerns relative to the size of the accessory unit which is pre-existing, and no exterior construction is required. Seeing no other member of the public who wished to speak, Councilor Greenberg motioned to close the public hearing which carried unanimously. Councilor Greenberg motioned to approve the petition. The Committee reviewed the draft findings and conditions as shown on the attached presentation and voted five in favor, one opposed (Councilor Kelley) and two abstentions (Councilors Laredo and Markiewicz).

#26-20 Request to Rezone Approximately 4.4 acres to MU-3 to Create a Contiguous MU-3 Zone
MD 399 GROVE OWNER, LLC/RAMIREZ CONCORD, LLC/BH NORMANDY RIVERSIDE, LLC/MASSACHUSETTS BAY TRANSPORTATION AUTHORITY petition for a change of zone to Mixed Use 3/Transit Oriented District for portions of land located at 355 Grove Street (currently zoned BU-2) and 399 Grove Street (currently zoned BU-5), also identified as Section 42, Block 11, Lots 3, 4, and 4A, abutting the existing MU-3 Zone.

Action: Land Use Held 8-0; Public Hearing Continued

#27-20 Petition to allow Mixed Use Transit Oriented Development at Riverside Station
MD 399 GROVE OWNER, LLC/RAMIREZ CONCORD, LLC/BH NORMANDY RIVERSIDE, LLC/MASSACHUSETTS BAY TRANSPORTATION AUTHORITY petition for SPECIAL PERMIT/SITE PLAN APPROVAL to construct a mixed use, transit-oriented development of residential units, office, retail, personal services, restaurant, hotel, and related commercial uses not to exceed 1,025,000 square feet of gross floor area, with residential uses comprising not less than 60% of the total gross floor area with a residential density of not less than 800 square feet per unit with not less than 560 units nor more than 620 units with special permit relief and/or waivers as follows: as to dimensional standards, a development of more than 20,000 square feet of gross floor area, building height of up to 170 feet, buildings up to 11 stories, Floor Area Ratio of up to 2.5, beneficial open space of not less than 15%, increase of height of certain buildings with the Grove Street Area Corridor (to the extent necessary), and reduction in setback from Grove Street for certain buildings within the Grove Street Corridor Area (to the extent necessary); as to design standards, waiver of the sustainable development design standards and placement of a retaining wall greater than 4 feet in height located in a setback; as to uses, for-profit educational use, retail sales of over 5,000 square feet, restaurant with more than 5,000 square feet of gross floor area, personal service use of over 5,000 square feet, place of amusement, health club on ground floor, animal services, hotel, bank up to and over 5,000 square feet, theatre/hall, laboratory/research facility, parking facility, accessory, multi-level, parking facility, non-accessory, single level; as to parking, reduction of the residential parking requirement to 1.25 stalls per unit, reduction of the overall commercial parking requirement by 1/3, and waiver of parking stalls not to exceed 685 stalls, above and beyond the reductions specified above; as to parking facilities, waivers of the parking stall dimension requirements, the end stall maneuvering space requirements, the driveway entrance and exit requirements, the 5% interior landscaping requirements, the interior planting area requirements, the tree requirements, the bumper overhang requirements, the one-foot candle lighting requirement, the parking stall striping requirements (to the extent necessary), the curbing, wheel stop, guard rail, or bollard requirements, and the number of off-street loading facilities requirements; and as to signage, waiver of the number, size, type, location, and design requirements, all at 355 and 399 GROVE STREET on land known as Section 42, Block 11, Lots 3, 4 and 4A, containing approximately 13.05 acres of land in districts zoned Mixed Use 3 Transit Oriented (MU3), BU2 (a portion to be rezoned to MU3), BU5 (to be rezoned to MU3). Ref: Sec. 4.2.2.B.1, 4.2.2.B.3, 4.2.3, 4.2.4, 4.2.4.A.4, 4.2.4.B.3, 4.2.4.G.2, 4.4.1, 5.1.4, 5.1.4.A, 5.1.4.C, 5.1.8.B.1, 5.1.8.B.2, 5.1.8.B.4, 5.1.8.B.6, 5.1.8.D.1, 5.1.8.D.2, 5.1.9.B.1, 5.1.9.B.2, 5.1.9.B.3, 5.1.9.B.4, 5.1.10.A.1, 5.1.10.B.3, 5.1.10.B.5, 5.1.12, 5.1.12.B.4, 5.1.13, 5.2, 5.2.13, 5.4.2.B, 5.12, 6.4.29.C.5,

7.3.3, 7.3.5, 7.4 of the City of Newton Revised Zoning Ordinance, 2017. Additionally, as to infiltration and inflow mitigation, an abatement of the infiltration/inflow mitigation fee pursuant to Section 29-170 of the City of Newton Revised Zoning Ordinance, 2017.

Action: **Land Use Held 8-0; Public Hearing Continued**

Note: The presentation on items #26-20 and #27-20 was relative to the Grove Street bike lane(s). Chief Planner Neil Cronin noted that the existing conditions suffer from poor pedestrian connections and lack bicycle infrastructure. The petitioner has attempted to remedy this by proposing the construction of a mixed-use path on the west side of Grove Street (adjacent to the project site). Pedestrians and bicyclists would share this path. Mr. Cronin noted that this path ends at the northern limit of the project (in front of building 7) at which point a cyclist would have to continue northbound on the sidewalk, cross Grove Street or bike along Grove Street in the opposite direction of vehicular traffic. A signalized crossing is proposed which would allow cyclists to safely cross Grove Street and travel north. Mr. Cronin presented alternatives for the bike lane(s) as detailed in the Planning Memo dated May 5, 2020 and attached to the end of this report. He noted that any of the plans will allow for future expansion of bicycle facilities and will need separate approval by the Public Facilities Committee.

Overview of the Proposed Alternatives

“Alternative C” - on the eastern side of Grove Street of the project (opposite the project site) – will extend from the roundabout, over 95 and along the project. The two-way cycle track is separated from pedestrians. The petitioners have proposed a crosswalk at the transit green and a rapid flashing beacon to increase safety at the crossing.

“Alternative A” - two-way cycle track on the western side of Grove Street. Over the overpass is a northbound buffered bike lane. Extends from Lower falls to Auburndale - picks up at the signalized intersection in front of building 3 and then converts from a buffered bike lane to an “in-lane” bike lane (not buffered from vehicular traffic).

“Alternative D” – the two-way cycle track is reduced to two one-way bike lanes. Buffered bike lanes on each side of Grove Street. Because you go down from two-way cycle track, you acquire an additional 2’ of separation from the buildings along Grove Street.

Planning’s Preferred Alternative (“Alternative B”) – two-way cycle track from the roundabout to building 7, a protected bike lane on the eastern side of Grove Street in a north bound direction. Extending from Newton Lower Falls to Auburndale.

Mr. Cronin noted that the Lower Falls Improvement Association has proposed inclusion of a two-way cycle track from the Lower Falls Community Center to the Williams School.

Director of Transportation Planning Nicole Freedman presented details of the options as shown on the attached presentation. Ms. Freedman emphasized the City’s preference is to have bicycle facilities on both sides of Grove Street, raised on the east side, and extending safely through the roundabout. Ms. Freedman explained that the City’s preference is to keep the two-way cycle track on the west side and have a one-way, raised bike lane on the western side of Grove Street in a northbound direction. She

stated that while the westbound side is a great facility for local traffic and people within the neighborhood, a bike lane on the east side of Grove Street would be beneficial for commuting cyclists. Ms. Freedman noted that without the bike lane on the east side of Grove Street, bikers headed northbound would have to cross the street twice within a half mile distance. She stated that raising the bike lane will attract a larger range of users, particularly those who would not feel safe on a painted bike lane. Ms. Freedman noted that the City's preferred plan is consistent with the Street Design Guidelines and stated that the Mass DOT planning guide has a section detailing safely designed separated bike lanes in roundabouts. It was noted that any of the options are an improvement on the existing conditions.

Green International Affiliates Corinne Tobias presented an overview of typical lane widths on urban minor arterial roads as shown on the attached presentation. Ms. Tobias reviewed Mass DOT's recommendations. She noted that Grove Street is 26' wide (12' lanes with 1' shoulders) but does not have very clear striping. She stated that Mass DOT recommends 11-12' lanes with a minimum of 1' shoulders. She presented how each of the alternatives to compare with Mass DOT's recommendations and provided some examples of other minor arterials in the City to provide context on how the bike lane(s) would fit. Ms. Tobias presented some photos driving southbound on Grove Street to provide context for where the pedestrian crossing is proposed. She noted that for this type of crossing, a Rapid Flashing Beacon with signage is recommended to alert drivers to the upcoming crossing.

Ted Chapman, noted that the residents of Lower Falls have been working with the petitioner, the City and state agencies to maximize pedestrian and bicycle facilities for Riverside. He noted that they are advocates for separate infrastructure on Grove Street as well as the trail network. Mr. Chapman expressed support for extension of the two-way cycle track from Hamilton Community Center to Lower Falls. He noted that inclusion of the single northbound bike lane should be determined by evidence of need and stated that more information is necessary. He suggested that a feasibility study should be conducted and that bike traffic projections should be clearly identified. Mr. Chapman questioned how the Riverside Greenway network might affect bike travel on Grove Street, whether the geography on Grove/Hancock/Woodland supports the various alternatives, what the optimum design of the roundabout is and what the cost estimates and funding sources are. He requested a comparative evaluation of potential routes from the project to Auburndale.

Barbara Gruenthal, questioned whether the single-lane path on the east side of Grove Street is necessary. She questioned whether the Planning Department's statement that most of the bikers will be through-bikers is accurate. She noted that VHB's data does not support the Planning Department's conclusion regarding through-bikers. She noted that VHB's projections are very low and suggested that the data would have to be grossly inaccurate to support the bike lane.

Randall Block, 45 Lafayette, spoke on behalf of the Lower Falls Improvement Association, he expressed concern relative to the east side bike lane on Grove Street and provided the following reasons to not include it: 1. The 2' foot shoulders are reduced and/or eliminated. These changes will make Grove Street less safe. 2. Vehicles that enter and exit the condominium at 416 Grove Street will need to cross the cycle lane, creating a hazard. 3. The roundabout is made more complicated, making the I-95 ramp more hazardous. 4. There will be negative aesthetic impacts including the elimination/reduction of a planted buffer in front of building 5 and a reduction in the terrace frontage. 5. A buffer between the roundabout and the two immediate abutters would likely be lost. Mr. Block expressed support for "Alternative C".

Kim Hazarvartian, Principal Transportation Engineer representing the LFIA, noted that volume projection information is needed on Grove Street and at crossing points. He noted that the way bicycles interact at the roundabout could affect queuing as vehicles exit 128 and whether there might be safety/operational impacts. He noted that having more than the minimum for lane and shoulder widths could be beneficial for safety and suggested that with a curb; driver and bicyclist flexibility is impeded.

Nathan Philips, expressed support for the City's Preferred Alternative. He noted that he is a parent of two kids who could not bike safely to Williams School. Mr. Philips supports the City's preferred alternative (B) not only for its regional benefits for active transportation on one of the few potential safe crossings of I-95, but for the kids on the south side of Grove street east of I-95 who would like to safely bike to Williams School and Auburndale. He stated that Newton needs to reduce prioritization on cars and begin prioritizing safe, healthy, climate friendly mobility options.

Brendan Keegan, expressed support for the City's preferred alternative. He noted that the reasons not to include the east side bike lane are not sensible and he believes the goal should be to increase safety and noted that decreasing speeds increases safety. He noted that the City should pursue the bike lane through the roundabout and continue to expand the bike lane network.

Paul McAuliffe, President of the Woodland Golf Club, expressed concern and opposition to the east side bike lane. He noted that the bike lane will interfere with maintenance facility operations and will encourage bikers to bike fast. He noted that golf balls sometimes go over the fence, which could be dangerous. He expressed concern that the setback will change with the bike lane which could impact stormwater conditions.

Cyrisse Jaffee, 8 Hallron Road, expressed concern that the bike lane will affect the design of the roundabout. She emphasized the need for data that supports the east side bike lane.

Mitigation

Mark Development Damian Chaviano presented an overview of the proposed mitigation as compared with the mitigated offered for the Northland Development as shown on the attached presentation. The mitigation package totals \$5.9 million dollars and includes \$1.5 million dollars for the Williams School, \$1.4 million for Inflow and Infiltration, \$3.0 for the Charles River Improvements. This mitigation equates to \$5.76/sq. ft. as compared with \$6.64/sq. ft. for Northland. The off-site mitigation proposed is more robust than what was previously proposed. Mr. Chaviano noted that the off-site improvements represent approximately \$7 million dollars.

Mr. Cronin provided an overview of the mitigation proposal as shown on the attached presentation. The Planning Department recommends the petitioner provide a mitigation payment of \$7.2 million dollars and suggested that the funds could be used for the following purposes:

- Purchase and maintenance of ongoing operations for a bike share system
- Pedestrian improvements with rapid flashing beacon at Williams School
- Grove/Washington Street pedestrian improvements
- Equipment to clear snow from the two-way cycle track
- Funds to improve the Williams school field

Councilor Questions and Comments

Q: Are there cost estimates for the extension of a bike lane from the Grove Street to Hamilton or for a bike lane on the east side of Grove Street?

A: Not yet.

Q: What thought has been given with regard to snow removal?

A: DPW maintains Grove Street and they would be responsible to ensuring snow removal.

Q: Do trees need to be removed on Grove Street to accommodate the bike lane?

A: If Grove Street were widened, that would require the removal of the trees on Grove Street. No tree removal is necessary as proposed.

How inconvenient is it to have to cross the road as a cyclist?

Is it safe to have bicycle crossing over the off-ramp?

Does DOT have a preference?

Do we have the space to have a protected bike lane in the roundabout?

Do we want to encourage people to go to the development side or the golf course side?

Is the Riverside Greenway group getting too large of a percentage of mitigation funds?

There are other schools in the neighborhood. Angier, Williams, Burr. We could divide the mitigation funds up more evenly.

There are two holes at the golf course where balls could easily go over the fence, causing safety concerns for bikers.

How did the petitioner come up with their number, how did Planning come up with their number? Its been compared with other projects' mitigation funds but we don't have a formula/methodology for coming up with a number. What is our policy?

Can an example of a design of the roundabout be provided for clarity?

Ms. Freedman noted that the counts relative to bicycle trips as provided by VHB are not accurate. She noted that there is no standard modeling for bicycle projections and emphasized that enhanced bicycle facilities will encourage more people to bicycle. The Committee emphasized the need to accurate projection estimates. Committee members noted that it would be helpful to see how many trips are in need of a through-lane in light of the other proposed improvements. Councilors expressed support for extension of the two-way cycle track as proposed by the LFIA but noted that if a bike lane is needed on the east side of Grove Street it should be raised/buffered.

In response to a question relative to how cyclists and vehicles interact in the roadway, Ms. Tobias explained that bikes are adjacent to the outer path. The cyclist would be adjacent to where pedestrians would walk, depending on the final design.

It was noted that Strava data is an application that is used to track bicycle ridership. This section of Grove Street is indicated as a higher volume street and is an important route in the regional network. Option B is the only option on the east side that includes a safety barrier and keeps vehicles from parking in the roadway. Bike lanes are mobility lanes and can provide safe spaces for bikes, scooters, adaptive bikes, wheelchairs, strollers, etc. Option B provides a safe way for people to travel and is the only option with 11' travel lanes and no extra space. It was noted that wider roads encourage higher speeds of vehicle traffic. The goal should be to keep people going at a safe, steady, slower pace.

Councilors expressed support for the Planning Department's recommendation of an increase in the proposed mitigation funds. Councilors noted that sometimes the neighborhoods' needs are not always known at the time of approval and it was suggested that the mitigation funds could be used as future needs become identified. Councilors deliberated spreading the mitigation funds throughout the community as opposed to using them for the trail network that is proposed. It was noted that some residents will never benefit from the trail network. Councilors noted that the trail network is an integral part of the project and connects the site to parks, the neighborhood and throughout the community. It was suggested that design and construction of the trail network will encourage future design for expanded networks which could be eligible for state or federal resources. Additionally, it was noted that it would be difficult to decide which portion of the trail network project should be eliminated, noting that it would eliminate access for a portion of the community.

Ted Chapman, noted that the trail network is not mitigation. He stated that the trail network fulfills the requirement of the zoning ordinance for enhanced open space and is an important part of the project which was identified as desirable by Lower Falls Improvement Association members.

Mr. Chaviano noted that the petitioner believes additional mitigation money, for a use to be identified in the future, is appropriate. He stated that the petitioner could commit to an additional contribution of \$1.3 million dollars if that is what the Council determines is appropriate. The Chair noted that additional information is needed relative to the proposed bike lane(s), roundabout, and bicycle projections. With that, the Committee voted unanimously to hold items #26-20 and #27-20 with a motion from Councilor Markiewicz. The Committee adjourned at 10:10 pm.

Respectfully Submitted,

Richard Lipof, Chair



Ruthanne Fuller
Mayor

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#26-20 and #27-20

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Barney S. Heath
Director

PUBLIC HEARING/WORKING SESSION MEMORANDUM

DATE: May 1, 2020
MEETING DATE: May 5, 2020
TO: Land Use Committee of the City Council
FROM: Barney Heath, Director of Planning and Development
Jennifer Caira, Deputy Director of Planning and Development
Neil Cronin, Chief Planner for Current Planning
CC: Petitioner

In response to questions raised at the City Council public hearing, the Planning Department is providing the following information for the upcoming public hearing/working session. This information is supplemental to staff analysis previously provided at the Land Use Committee public hearing.

PETITIONS #26-20 & #27-20

355 and 399 Grove Street

Petition #26-20 for a change of zone to Mixed Use 3/Transit Oriented District for portions of land located at 355 Grove Street (currently zoned BU-2) and 399 Grove Street (currently zoned BU-5), also identified as Section 42, Block 11, Lots 3 and 4

Petition #27-20 for a SPECIAL PERMIT/SITE PLAN APPROVAL construct a mixed use, transit-oriented development of residential units, office, retail, personal services, restaurant, hotel, and related commercial uses not to exceed 1,025,000 square feet of gross floor area, with residential uses comprising not less than 60% of the total gross floor area with a residential density of not less than 800 square feet per unit with not less than 560 units nor more than 620 units with special permit relief and/or waivers as follows: a development of more than 20,000 square feet of gross floor area, building height of up to 170 feet, buildings up to 11 stories, Floor Area Ratio of up to 2.5, beneficial open space of not less than 15%, increase of height of certain buildings with the Grove Street Area Corridor (to the extent necessary), and reduction in setback from Grove Street for certain buildings within the Grove Street Corridor Area (to the extent necessary); waiver of the sustainable development design standards and placement of a retaining wall greater than 4 feet in height within a setback; for-profit educational use, retail sales of over 5,000 square feet, restaurant with more than 50 seats, personal service use of over 5,000 square feet, place of amusement, health club on ground floor, animal services, hotel, bank up to and over 5,000 square feet, theatre/hall, laboratory/research facility, parking facility, accessory, multi-level, parking facility, non-accessory, single level; reduction of the residential parking

requirement to 1.25 stalls per unit, reduction of the overall parking requirement by 1/3, and waiver of parking stalls not to exceed 685 stall; and waivers to the requirements of parking facilities containing more than five stalls; waiver of the number, size, type, location, and design requirements, all at 355 and 399 GROVE STREET on land known as Section 42, Block 11, Lots 3, 4 and 4A, containing approximately 13.05 acres of land in districts zoned Mixed Use 3 Transit Oriented (MU3), BU2 (a portion to be rezoned to MU3), BU5 (to be rezoned to MU3). Ref: Sec. 4.2.2.B, 4.2.3, 4.2.4, 4.2.4.A.4, 4.2.4.B.3, 4.2.4.G.2, 4.4.1, 5.1.4, 5.1.4.A, 5.1.4.C, 5.1.8.B.1, 5.1.8.B.2, 5.1.8.B.4, 5.1.8.B.6, 5.1.8.D.1, 5.1.8.D.2, 5.1.9.B, 5.1.10.A.1, 5.1.10.B.3, 5.1.10.B.5, 5.1.12, 5.1.12.B.4, 5.1.13, 5.2, 5.2.13, 5.4.2.B, 5.12, 6.4.29.C.5, 7.3.3, 7.3.5, 7.4 of the City of Newton Revised Zoning Ordinance, 2017. Additionally, as to infiltration and inflow mitigation, an abatement of the infiltration/inflow mitigation fee pursuant to Section 29-170 of the City of Newton Revised Zoning Ordinance, 2017.

The Land Use Committee (the “Committee”) opened the public hearings on these petitions on January 28, 2020 and continued the public hearings on February 11, 2020, February 25, 2020, March 5, 2020, March 24, 2020, April 7, 2020 and April 28, 2020; both public hearings remain open. A tentative schedule for future Committee public hearings is included as an attachment to this report (**Attachment A**). This memorandum is focused on the Grove Street bicycle facilities and the proposed mitigation of the so-called “Riverside Development” proposed for the subject parcels.

Background

The petitioners are requesting a change of zone for a portion of 355 Grove Street, currently the Massachusetts Bay Transportation Authority (the “MBTA”) rail yard, and all of 399 Grove Street, currently the Hotel Indigo, to the Mixed Use 3/Transit Oriented Zone (the “MU-3/TOD zone”). The petitioners are also seeking special permits to allow a ten-building development on site. The petitioners filed revised plans which result in a development of 582 dwelling units, 253,827 square feet of office space, of which 7,500 square feet will be dedicated to the MBTA, 150 hotel rooms, and 38,895 square feet of ground floor commercial space (the “Project”).

Graphic I: Initial Bicycle Facilities from 2019



Grove Street Bike Lanes

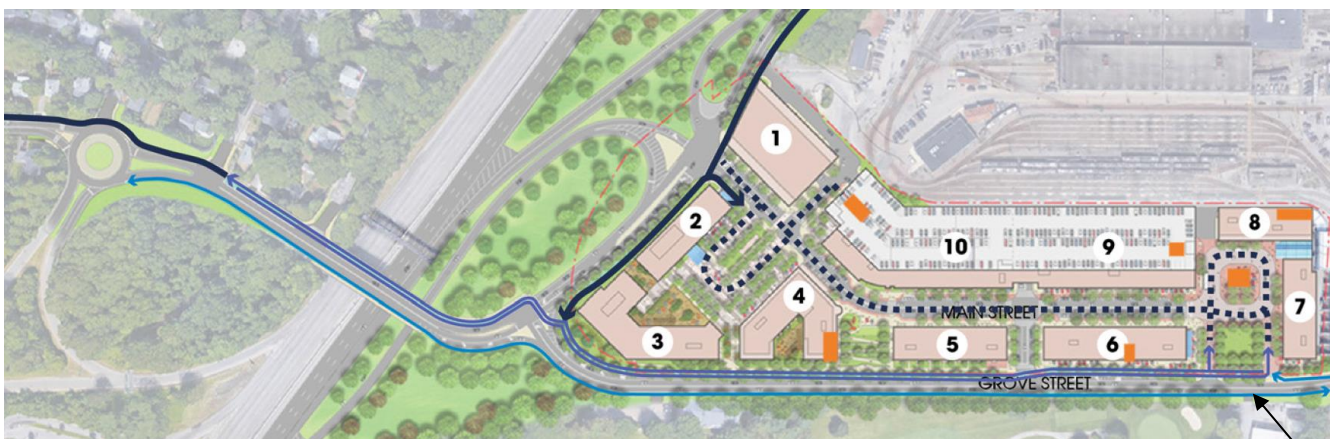
Grove Street today suffers from a poor pedestrian experience and lacks bicycle infrastructure. As such, the Riverside Vision called for improving the neighbor experience and safety along Grove Street to

entice residents of Lower Falls and Auburndale as well as visitors to the site to travel the street without their cars. In the first iteration of the Project, the petitioners proposed a ten-foot wide multi-use path on the west side of Grove Street. For reference in the above graphic and throughout this memorandum, west is to the top of the graphic, east is to the bottom, south (Lower Falls) is to the left and north (Auburndale) is to the right. This path would provide pedestrian and bicycle only travel along the western side of Grove Street. The path would allow for short-distance trips from the Lower Falls neighborhood on the west side of Grove Street to the site without crossing Grove Street.

When reviewing this plan, the Planning Department and the Transportation Division of Public Works noted that while the mixed-use path works well for the specific use case of bicyclists traveling between the Project and the Lower Falls neighborhood on the west side of Grove Street, it does not serve the majority of bicyclists on Grove Street. For the majority of bicyclists, who are biking the extent of Grove Street, they would have three substandard options: (a) continue on the sidewalk, which is not appropriate; (b) continue on the wrong side of Grove Street, which is unsafe and illegal; or (c) cross the street using the proposed Rapid Reflectorized Flashing Beacon (“RRFB”). This third option is unrealistic because a person on a bike travelling the extent of Grove Street northbound would be required to cross the street two times in less than 800 feet to get onto and off the path. The cyclists would cross first at the proposed roundabout at the left of the graphic and the second time at the RRFB.

To solve these three conditions and to properly plan for bicyclists traveling past the site, the Planning Department along with the Transportation Division of Public Works advocated for a northbound, raised bike lane on the eastern side of Grove Street. This raised bike lane would solve for the unrealistic expectation that people on bikes heading northbound will cross Grove Street twice to bicycle 800 feet northbound, by offering a facility that provides maximum safety benefits and positions northbound bicyclists on the correct side of the street at the northern boundary so they can safely continue beyond the Project limits on Grove Street. In the below graphic, the double line along the west side of Grove Street is the two-way bicycle track, while the single line on the eastern side is the one-way raised bicycle lane advocated for by staff.

Graphic II: Current Bicycle Facilities



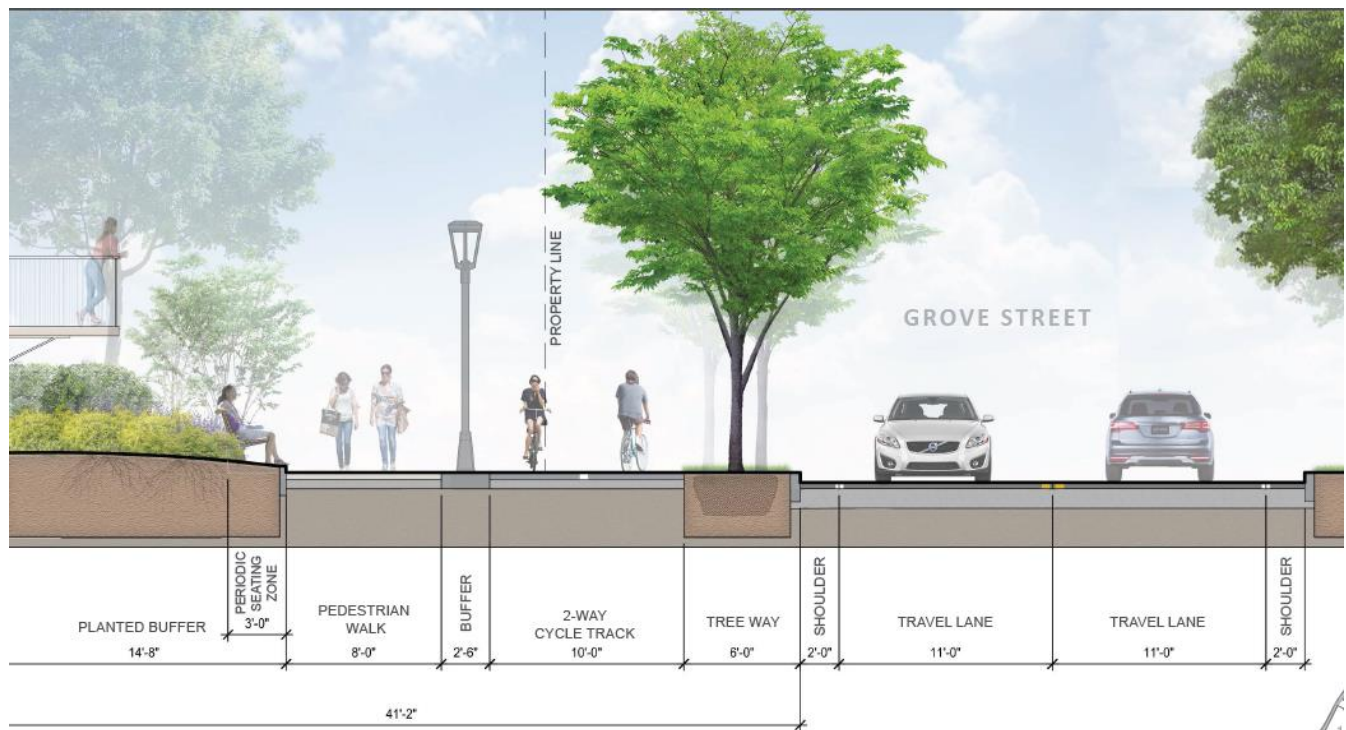
Due to comments regarding the northbound raised bike lane at the February 25th and at the April 7th hearings, the petitioners provided four alternatives for bicycle facilities on Grove Street: Alternative A includes both the two-way cycle track and the northbound bicycle lane; Alternative B includes both the

two-way cycle track and the one-way bicycle lane on the eastern side of Grove Street, but this lane is raised six inches; Alternative C mirrors the first iteration of the Project with only the two-way cycle track on the west side of Grove Street; and Alternative D provides for a one-way southbound bicycle track on the west side of Grove Street and a one-way northbound bike lane on the east side of Grove Street. The petitioners are not proposing to widen Grove Street; therefore, these Alternatives exhibit how the space between the buildings and the eastern boundary of Grove Street can be allocated. In order to evaluate these different options, this memo will take them out of order to show how the Project has evolved and to illustrate how the different facilities affect the section of Grove Street, specifically in front of Buildings 5 and 6.

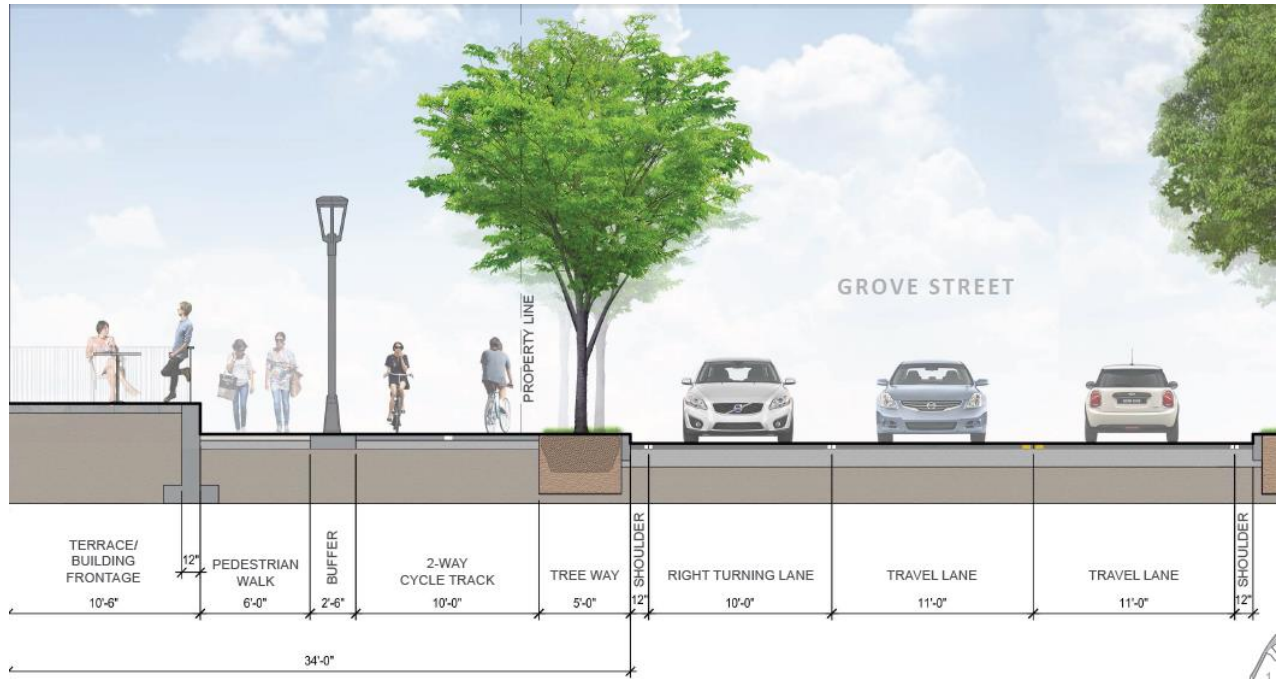
Alternative C: Two-Way Cycle Track

As stated above, Alternative C most closely represents the beginning of the Project and allows for a baseline of how the section is affected by the different facilities.

Building 5

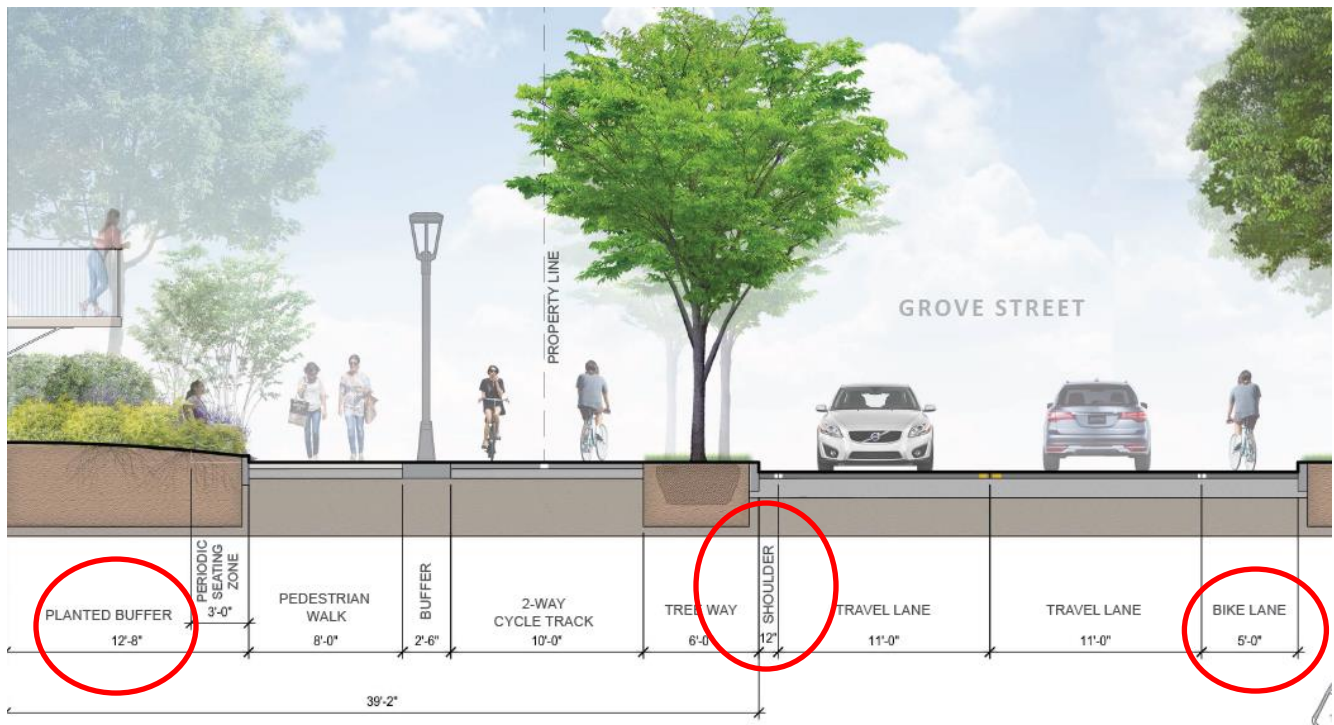


Building 6



Alternative A: Two-Way Cycle Track and Unprotected Bike Lane

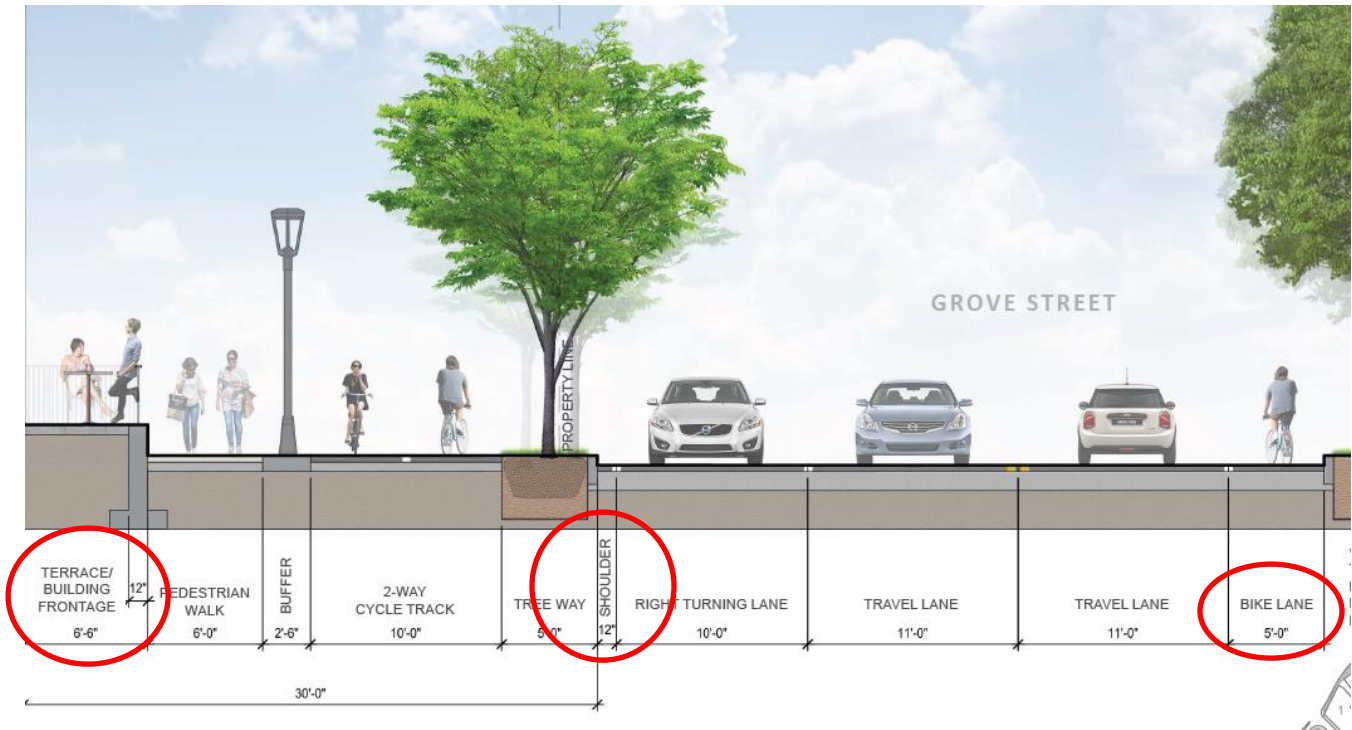
Building 5



To accommodate the northbound bike lane, the *Planted Buffer* is reduced from fourteen feet eight inches to twelve feet eight inches, the two-foot wide *Shoulder* separating the southbound vehicular

travel lane from the *Tree Way* is reduced by one foot, and the two-foot wide *Shoulder* separating the northbound vehicular travel lane from the curb is removed. This additional space is used to create the five-foot wide bike lane.

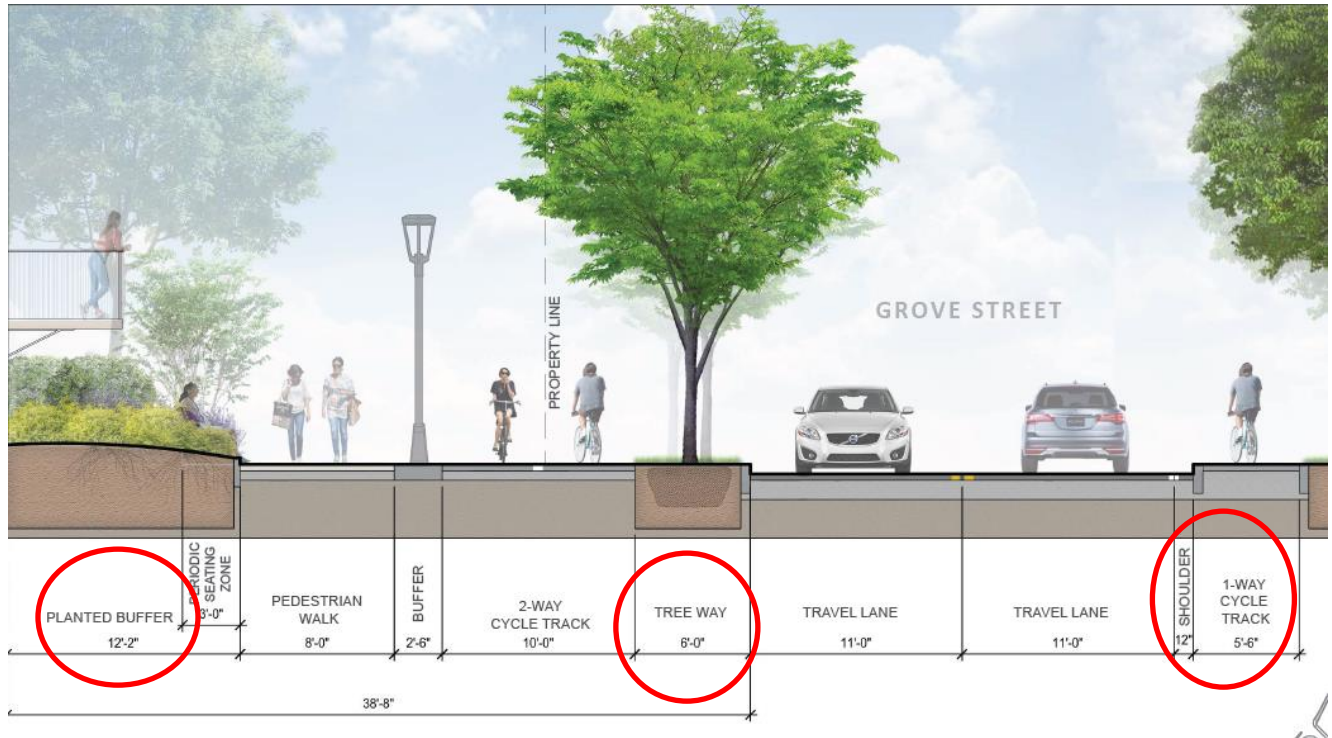
Building 6



To accommodate the northbound bike lane, the *Terrace/Building Frontage* is reduced from ten feet six inches to six feet six inches, the one-foot wide *Shoulder* separating the southbound vehicular travel lane from the *Tree Way* is maintained, and the *Shoulder* separating the northbound vehicular travel lane from the curb is removed. In this scenario the northbound bike lane is provided, which staff supports, but it is not protected from vehicular traffic. As such this alternative is not preferred.

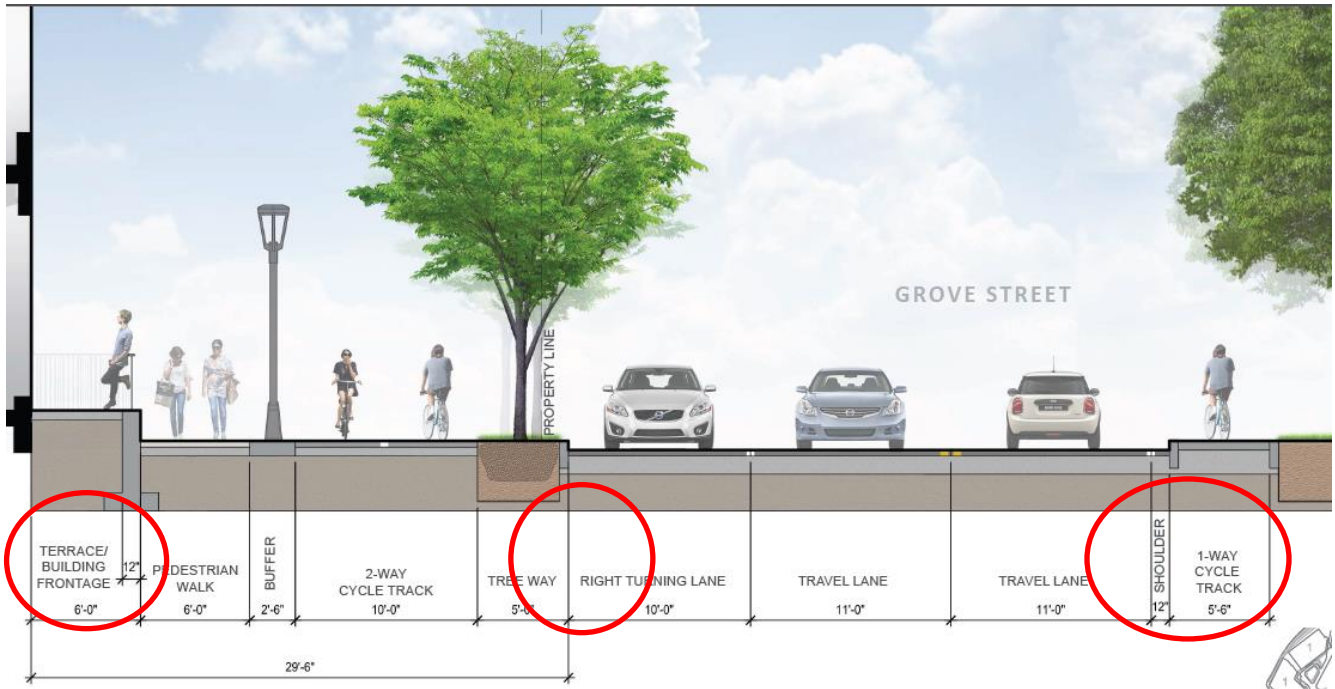
Alternative B: Two -Way Cycle Track and Protected Bike Lane

Building 5



The *Planted Buffer* is reduced from fourteen feet eight inches to twelve feet two inches, the two-foot wide *Shoulder* separating the southbound vehicular travel lane from the *Tree Way* is removed, and the two-foot wide *Shoulder* separating the northbound vehicular travel lane from the curb is reduced to one foot.

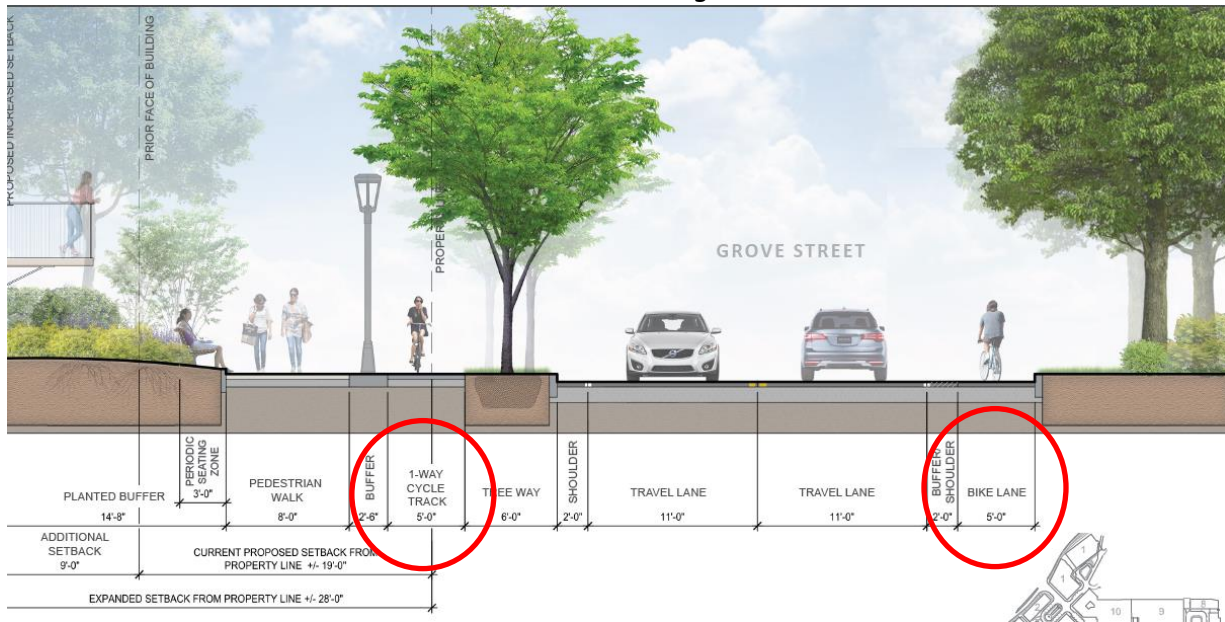
Building 6



The *Terrace/Building Frontage* is reduced from ten feet six inches to six feet, and the one-foot wide *Shoulder* separating the southbound vehicular traffic from the *Tree Way* is removed. In this scenario the northbound bike lane is provided and is raised which is the condition City Staff prefers. The bike lane is also buffered from the northbound vehicular travel lane by a one-foot wide *Shoulder*, increasing safety for the bicyclist.

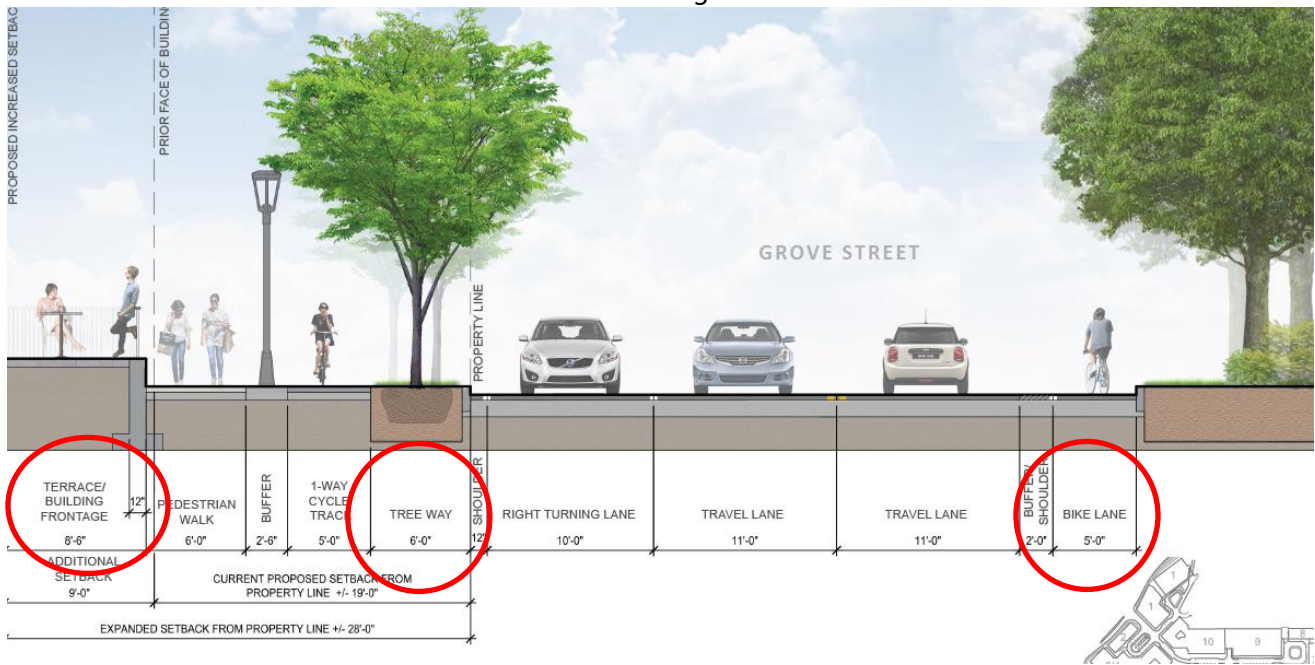
Alternative D: One-Way Bike Lanes

Building 5



In this alternative, the two-way cycle track on the west side of Grove Street is reduced to a one-way southbound bike lane. This allows for all the dimensions to be maintained and allows for the bike lane on the eastern side of Grove Street to be buffered by two feet.

Building 6



The *Terrace/Building Frontage* is reduced by two feet to eight feet, six inches, the *Tree Way* is increased by one foot, from five feet to six feet; and the bike lane on the eastern side of Grove Street is buffered by two feet.

This Alternative solves for the three conditions that were identified in the petitioners’ first plan and still allows for a protected southbound bicycle lane on the eastern side of Grove Street. However, this Alternative removes the opportunity for residents from the western side of Lower Falls to access the site without crossing Grove Street. While staff’s concerns with the first design focused on trips traveling past the site, this Alternative does not account for the expected increase in short-distance trips from Lower Falls to the site. Staff believes that this Alternative does not realize the opportunity this Project presents to create a unique amenity such as the two-way cycle track while accounting for future trips from Lower Falls into Auburndale.

Connections

There have been concerns as to what form the northbound bike lane would take through the roundabout and how the bike lane would be treated at the new signalized intersection in front of Building 3. Staff recognizes that the design of these two intersections has not been finalized, but the City is confident the petitioners can apply the Massachusetts Department of Transportation’s (“MassDOT”) best practices to design a safe facility through the roundabout and the intersection. MassDOT’s Separated Bike Lane Planning and Design Guide supports bike facilities through roundabouts noting that exposure for cyclists is medium to low in such situations. “Separated bike lanes can be continued through roundabouts, with crossings that are like, and typically adjacent to, pedestrian crosswalks. Motorists approach the bicycle crossings at a perpendicular angle, maximizing visibility of approaching bicyclists.”

Conclusion

The petitioners provided the below four alternatives for bicycle facilities along Grove Street; City Staff prefers Alternative B because it plans for the majority movement, which is bicyclists traveling north of the Project, while allowing for safe and convenient short-distance trips from Lower Falls to the Project. City Staff believes that the differences in the street sections between Alternative B and the remaining Alternatives are de minimis.

Table I: Bicycle Facility Summary

Option	Infrastructure on West Side	Infrastructure on East Side	Preferred by Staff
A	Two-way bike lane	Unprotected bike lane	No
B	Two-way bike lane	Protected bike Lane	Yes
C	Two-way bike lane	None	No
D	Protected bike lane	Buffered bike lane	No

Mitigation

The City Council passed Ordinance B-45 in November of 2019 to codify the City’s policy regarding infiltration and inflow as it relates to State requirements and the City’s permit with the Massachusetts Water Resource Authority. Such permit requires the City to improve its sewer infrastructure to remove extraneous infiltration and inflow at a 4-gallons to one-gallon ratio using a rate of \$19.52 per gallon. According to the City Engineer, the Project will add an average of 79,961 gallons per day resulting in a

fee of \$5,721,765 (**Attachment B**). The City Engineer suggests that 25 percent (\$1,430,441) of the fee be applied to sewer work in the area of the Project, while the Planning Department suggests that the remaining 75 percent (\$4,291,324) of the fee be allocated to other mitigation.

The petitioners have proposed improvements to nearby trails that would total \$3,000,000. Should the City Council choose to require these mitigation payments that would leave \$1,291,324 for other improvements. The petitioners have also proposed to donate \$1,500,000 for improvements to the Williams School in Auburndale which would satisfy the mitigation under Ordinance B-45 (by \$208,676). The Planning Department believes that the payment for the Williams School should be above and beyond the mitigation required under the Ordinance, which results in \$1,291,324 outstanding. The Planning Department has provided the attached spreadsheet identifying several potential City mitigation needs that could be addressed with this funding (**Attachment C**).

ATTACHMENTS

- Attachment A:** Tentative Land Use Committee Schedule, dated May 1, 2020
Attachment B: Engineering Memorandum, dated April 15, 2020
Attachment C: Planning Department Spreadsheet, dated May 1, 2020

TENTATIVE LAND USE COMMITTEE SCHEDULE

May 1, 2020

355 AND 399 GROVE STREET "RIVERSIDE"

*This schedule is tentative. The Land Use Committee is scheduled to meet on the below dates; however, the topics are subject to change.

Meeting Date	Topic	Description
5.5.20	Grove Street Bike Lane; Mitigation	Discussion of the Options for Bicycle Facilities on Grove Street; Project Mitigation
5.12.20	Revised Project	Review of the revised Site Plans, Program, and Fiscal Impact
5.26.20	Design Guidelines & Signage	Guidelines that will regulate architecture of individual buildings as well as signage
6.2.20	Transportation	Review of Traffic Impacts, Shared Parking Analysis, and Transportation Demand Management Plan

DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

OFFICE OF THE CITY ENGINEER

1000 Commonwealth Avenue
Newton Centre, MA 02459-1449

Attachment B

City of Newton

Ruthanne Fuller
Mayor

DATE: April 15, 2020
TO: Land Use Committee
FROM: Louis M. Taverna, P.E., City Engineer

**RE: Riverside Development, Sewer Infiltration/Inflow Mitigation,
Waiver Request – REVISED MEMO
Ordinance No. B-45, Sewer Inflow and Infiltration (I/I) Mitigation**

The City Engineer has calculated the sewer infiltration/inflow mitigation fee for this project. See calculations below. The total mitigation fee, based on the proposed usage of low flow fixtures throughout the project, is \$5,721,765. This calculation reduces the proposed total flow of the completed development by the estimated existing flow from the Indigo Hotel.

Sewer Ordinance No. B-45 states the following: For projects subject to a special permit, the City Council, for good cause shown, may abate in whole or in part the infiltration/inflow mitigation fee for a particular dwelling, building, or project.

Waiver request:

- a) *The expected impact of the development on sewer infiltration/inflow.* The development will propose to add an average of 79,961 gallons per day to the existing city sewer system. The existing sewer flow from the site is estimated to be 15,000 gallons per day. The city's sewer system in this area flows downstream to the interceptor system along the Charles River to the east. The city's sewer system upstream of the project flows northwest to the Quinobequin Road sewer pump station, where it is pumped into the Cochituate Aqueduct. A substantial portion of this sewer flow is bypassed to the interceptor sewer along the Charles River, through the project area, during storm events.
- b) *Whether infiltration/inflow mitigation has previously been conducted in the general area and to what extent.* This project lies in sewer area 3. Sewer area 3 has undergone substantial work related to sewer infiltration/inflow removal, as part of the city's sewer capital improvement program. However, upstream of the project is sewer area 9, which is still under investigation, and has not yet undergone sewer system improvements. As mentioned above, sewer flows upstream of the project area in sewer area 9 have a direct effect on the sewer flows from the project area. The estimated cost of design and construction of improvements in sewer area 9 approaches \$8,000,000 to \$10,000,000.
- c) *Whether the abatement will benefit the health and well-being of the public and is reasonably in the best interest of the city.* An abatement of 75% of the infiltration/inflow mitigation fee, based on low flow fixtures, is recommended by the City Engineer. This would allow the remaining 25% of the fee, or \$1,430,441 to be used toward the design and construction of

sewer improvements in sewer project area 9. The developer should consider dedicating the abated amount of the fee towards other mitigation purposes, as recommended by the Planning Department.

Calculation of sewer infiltration/inflow mitigation:

Low flow fixtures:

855 bedrooms x 65 gal/bedroom/day = 55,575 gal/day

Hotel = 150 rooms x 65 gal/room/ day = 9,750 gal/day

Retail = 38,895 sf x 50 gal/1000 sf = 1,945 gal/day

Office = 253,828 sf x 50 gal/1000 sf = 12,691 gal/day

Existing Hotel = 15,000 gal/day

Net flow = 64,961 gal/day x 4 x \$22.02 = \$5,721,765

Riverside Mitigation

I&I Amount	\$5,721,765
I&I Payment	\$1,430,441
Subtotal	\$4,291,324
Trail Improvements	\$3,000,000
Subtotal	\$1,291,324

Possible Transportation Mitigation

Purchase and pay for the ongoing operations (for five years) of three bikeshare systems: one on site; one in Lower Falls; and one in Auburndale. Locations to be determined by the Director of Planning and Development and the Commissioner of Public Works. Estimated price of \$60,000 per station and ongoing operation of \$15,000 per station annually.

\$405,000

Design and construct a cross walk with accessible curb cuts and ramps to the north of the Williams School Bus Loop, proximate to Myrtle Street.

Design and reconstruct curb cuts with accessible ramps to meet modern standards just south of the Williams School Bus Loop.

Purchase and install a RRFPP at either location, to be decided by the City of Newton

Provide funds for the purchase of a piece of equipment to plow the two way cycle track along the west side of Grove Street; equipment can also be used on the cycle tracks on Needham Street and in West Newton Square
Design and construct improvements to the intersection of Grove and Washington Streets (pedestrian bump out on eastern side of Washington Street, tighten south west radius of intersection, accessible curb cuts and ramps)

Possible Park & Playground Mitigation

Williams School - General Field improvements (*Deep tine aeration, turf and other field repairs*)

\$30,000

Lower Falls Community Center Field Improvements

\$100,000

Lower Falls Community Center Improvements

60,000

Department of Planning and Development



PETITIONS #26-20 AND #27-20

**REQUEST TO REZONE AND SPECIAL
PERMITS TO ALLOW A TEN-
BUILDING, MIXED USED
DEVELOPMENT "RIVERSIDE"**

MAY 5, 2020

Initial Design



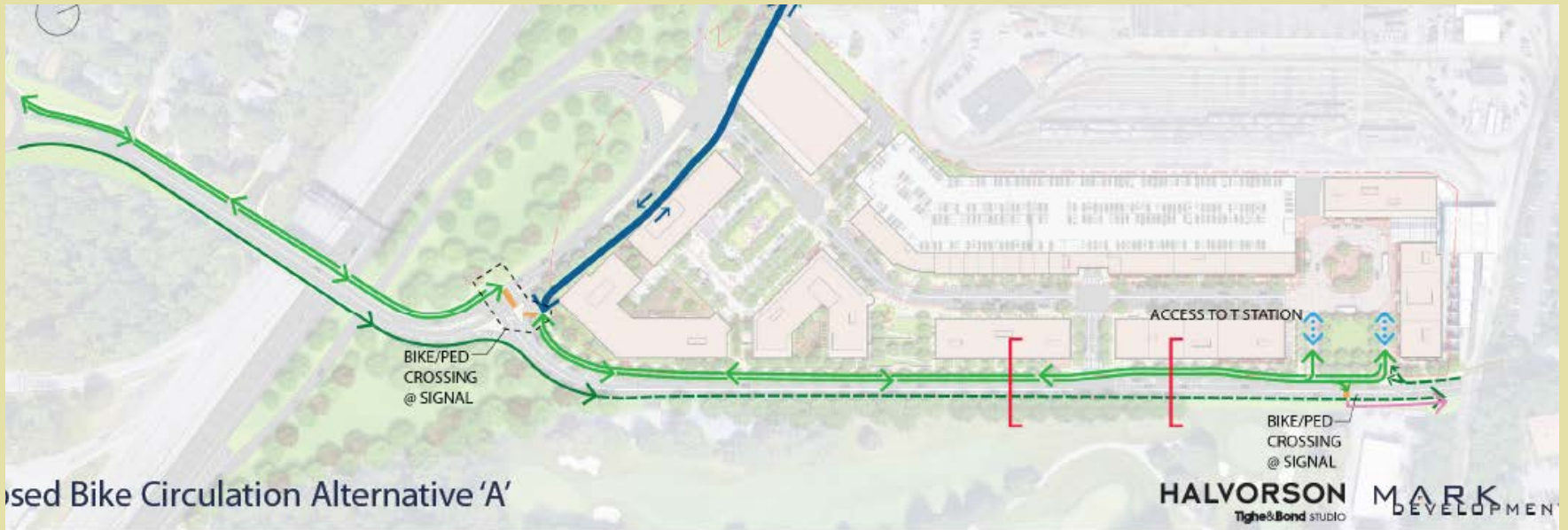
Alternative C



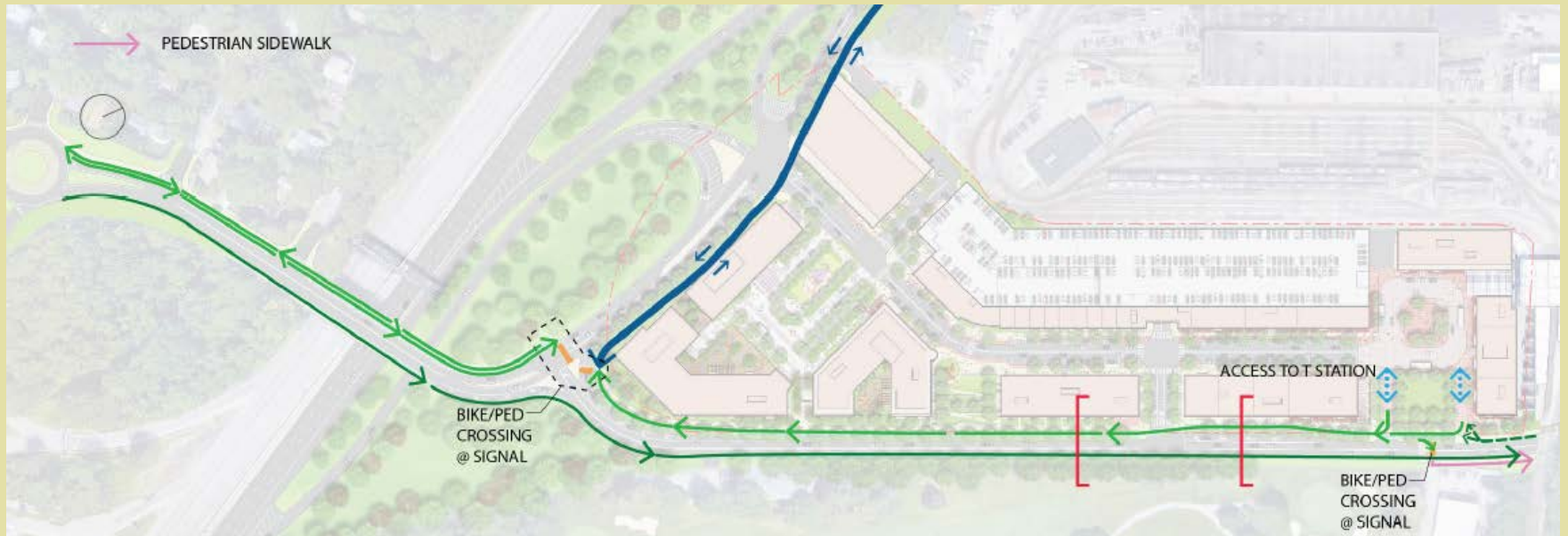
Proposed Bike Circulation Alternative 'C'

HALVORSON MARK DEVELOPMENT

Alternative A



Alternative D



Preferred Alternative



Mitigation



- Infiltration and Inflow Ordinance
 - Calculated by the City Engineer
 - \$5,721,765
 - \$1,430,441
 - Subtotal: \$4,291,324
 - Trails: \$3,000,000
 - Subtotal: \$1,291,324
- Williams School: \$1,500,000
- Total Mitigation: \$7,221,765

Mitigation



- Infiltration and Inflow Ordinance
 - Calculated by the City Engineer
 - \$5,721,765
 - \$1,430,441
 - Subtotal: \$4,291,324
 - Trails: \$3,000,000
 - Subtotal: \$1,291,324
- Williams School: \$1,500,000
- Total Mitigation: \$7,221,765

Possible Mitigation Measures



- Purchase, install, and pay for the ongoing operations of three bike share systems in the area.
- Pedestrian improvements with a Rapid Reflectorized Flashing Beacon (“RRFB”).
- Pedestrian improvements to the intersection of Grove Street and Washington Street.
- Provide funds for the purchase of a piece of equipment to clear snow from the two-way cycle track.
- Improvements to the Williams School field.

City Preference for Bike Facilities

Riverside Development

May 5, 2020

Land Use Committee

Nicole Freedman, Director of Transportation

Nfreedman@newtonma.gov

Key Questions/ City Preference

- Should bike facilities be on both sides of Grove? **Yes**
- Should east side bike lane be painted or raised? **Raised**
- How far should facilities extend? **Thru Roundabout**
- Is the roundabout safe for bikes? **Yes**

Proposals



Who is Served - Initial Proposal

2 way raised bike lane, west side, thru roundabout. Painted or no bike lane, east side

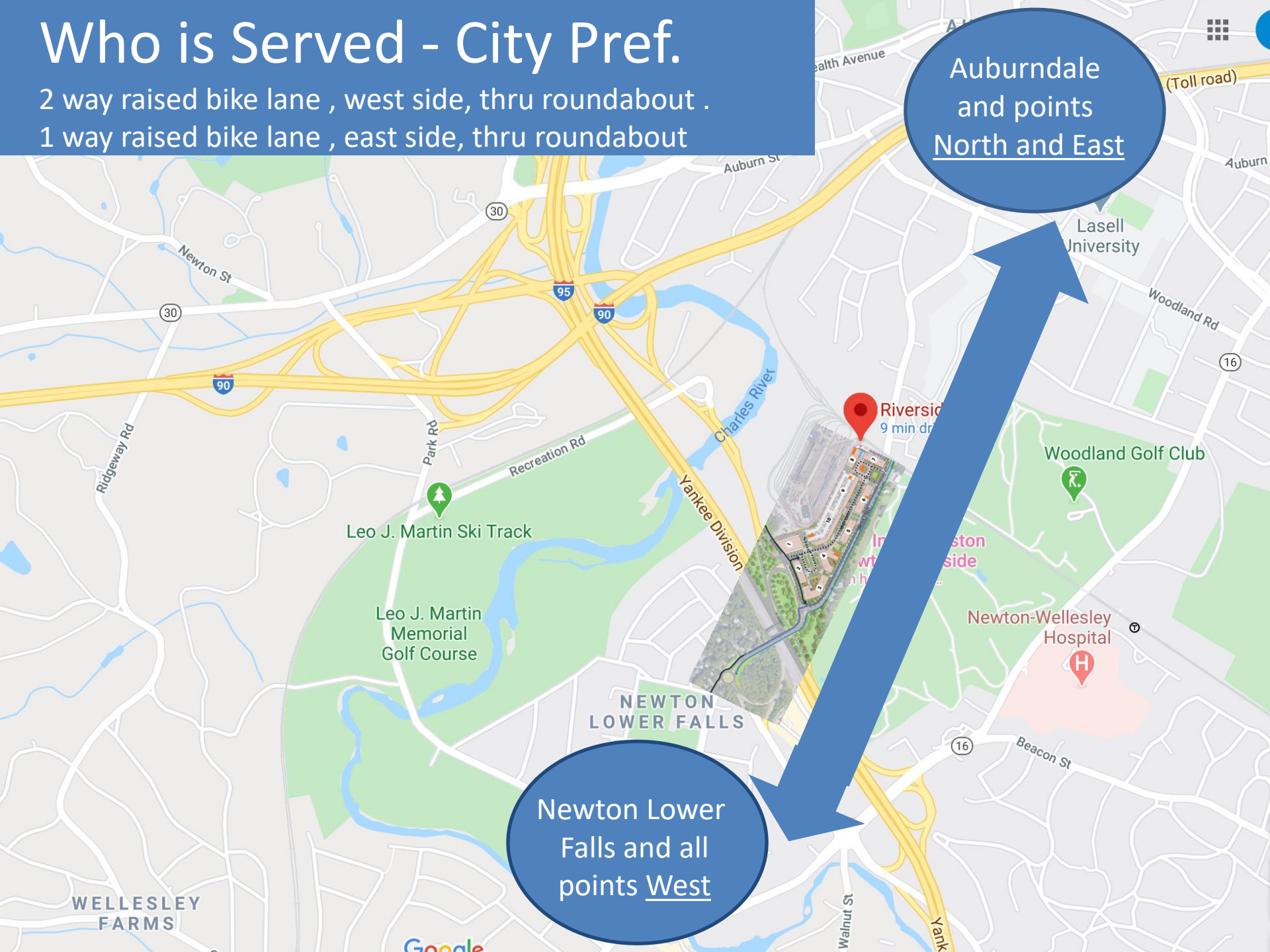


Who is Served - City Pref.

2 way raised bike lane , west side, thru roundabout .
1 way raised bike lane , east side, thru roundabout

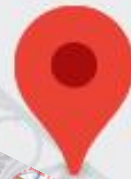
Auburndale
and points
North and East

Newton Lower
Falls and all
points West



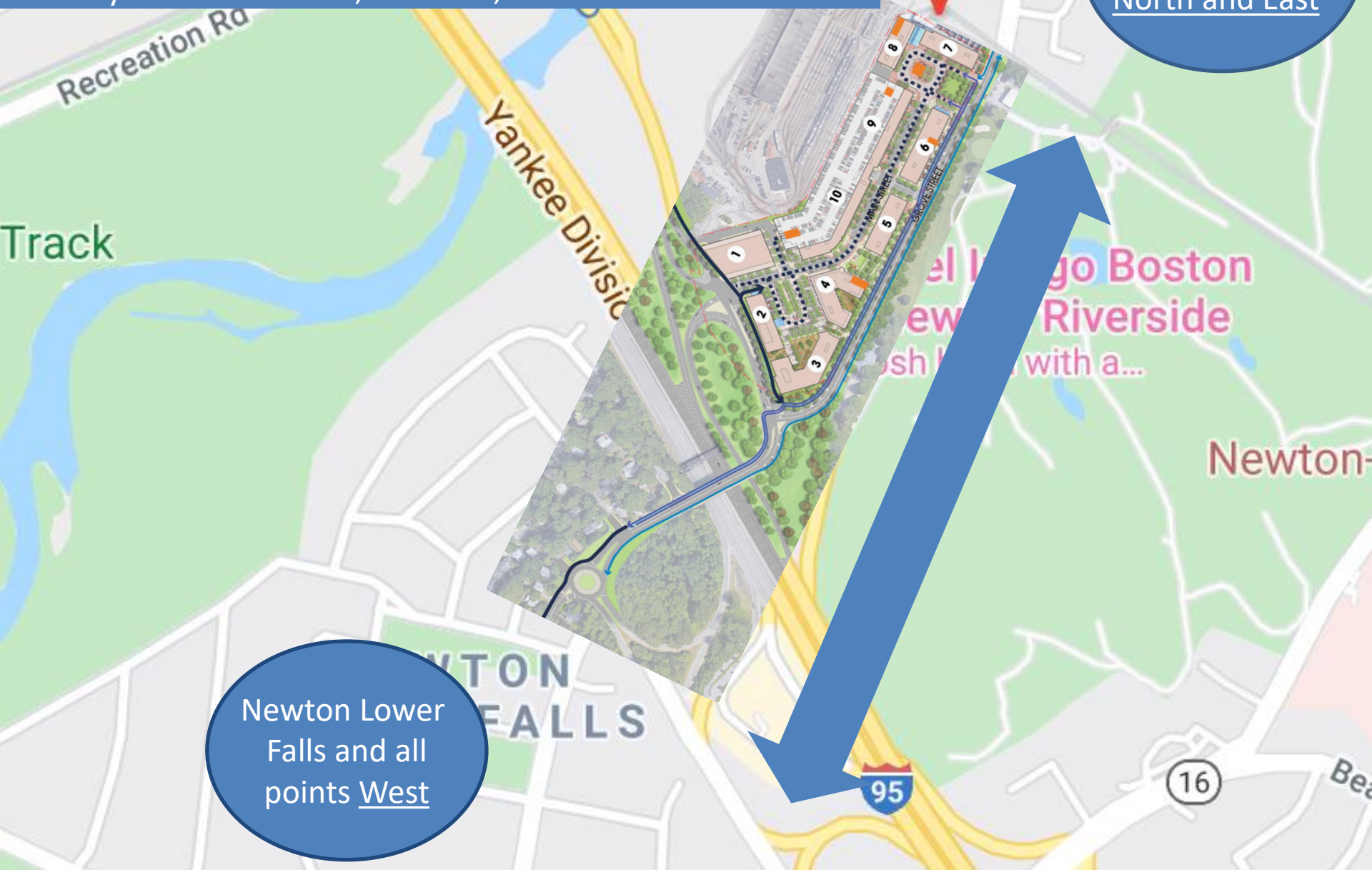
Who is Served – City Pref.

2 way raised bike lane , west side, thru roundabout .
1 way raised bike lane , east side, thru roundabout



River
9 min

Auburndale
and points
North and East



Newton Lower
Falls and all
points West

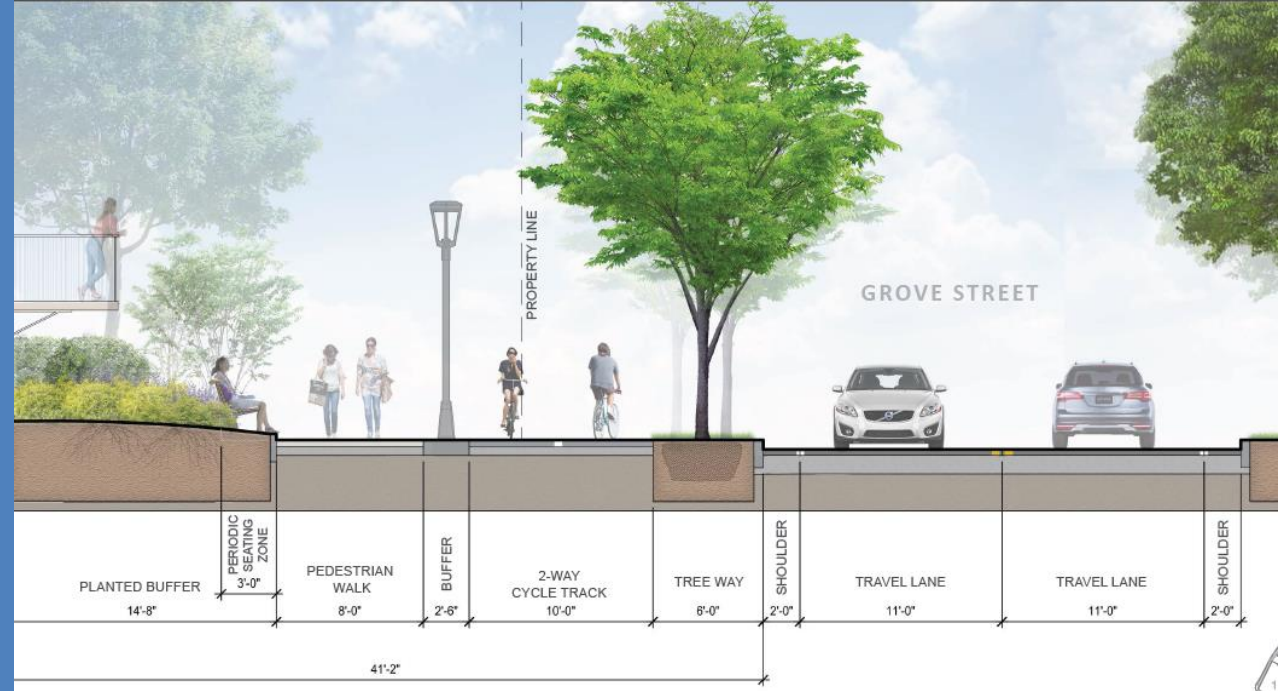
Bike Lane Should be Raised

- Result in 30-75% fewer crashes and/or injuries
- Dramatically increase ridership – up to 300%!
- Attract the 8-80 crowd
- 96% of users believe they increase safety

2 Ft vs Safety??

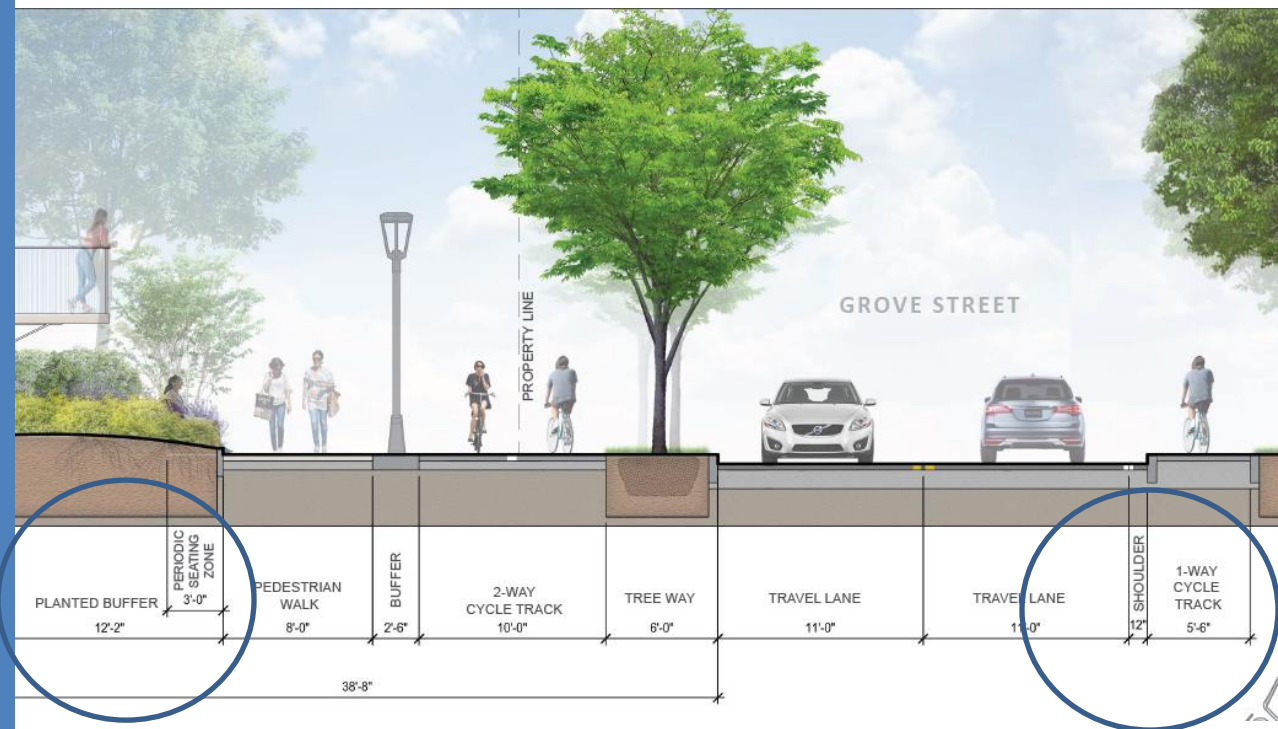
Initial Proposal

2 way raised bike lane, west
Painted or no bike lane, east side



City Request

2 way raised bike lane, west
Raised bike lane, east side



City Preference Raised, East Side, Thru Roundabout

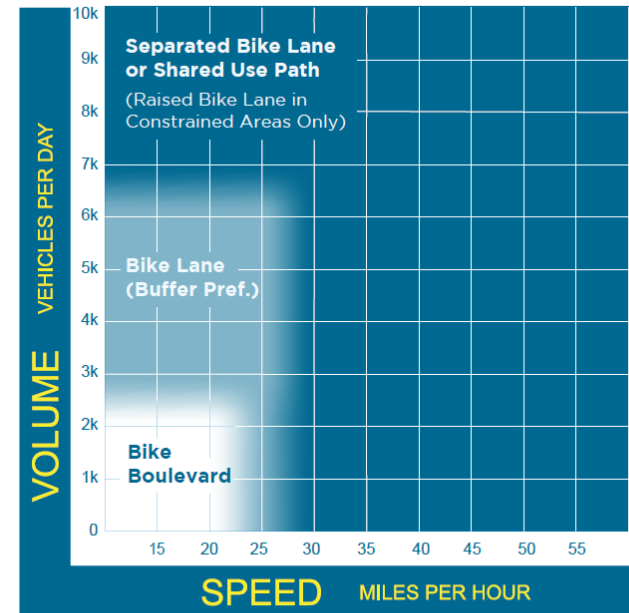
- Consistent with City policy

Some people are willing to bike in mixed traffic but most will not consider biking a viable transportation option unless they can make their entire trip along a “low-stress” route that is safe, comfortable and convenient – City of Newton Street Design Guide

- Consistent with MassDOT guidance

One way separated bike lanes in the direction of motorized travel... provide intuitive and direct connections with the surrounding transportation network, including simpler transitions to existing bike lanes and shared travel lanes – MassDOT Separated Bike Lane Planning and Design Guide, pg. 15.

Figure 4.2 Selecting a Low-Stress Bikeway



1 This figure assumes operating speeds are similar to posted speeds. If they differ, designers should use operating speed rather than posted speed.

2 Separated bike lanes or shared use paths recommended on any street with two or more travel lanes per direction.

City Preference Raised, East Side, Thru Roundabout

4.3.4 ROUNDABOUT DESIGN WITH SEPARATED BIKE LANES

When separated bike lanes are provided at roundabouts, they should be continuous around the intersection, parallel to the sidewalk (see [EXHIBIT 4S](#)). Separated bike lanes should generally follow the contour of the circular intersection. The design of the street crossings should include the following features (see [EXHIBIT 4T](#)):



Thank you

Riverside Development

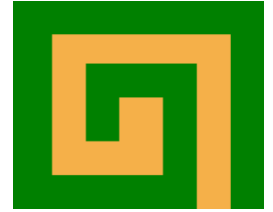
May 5, 2020

Land Use Committee

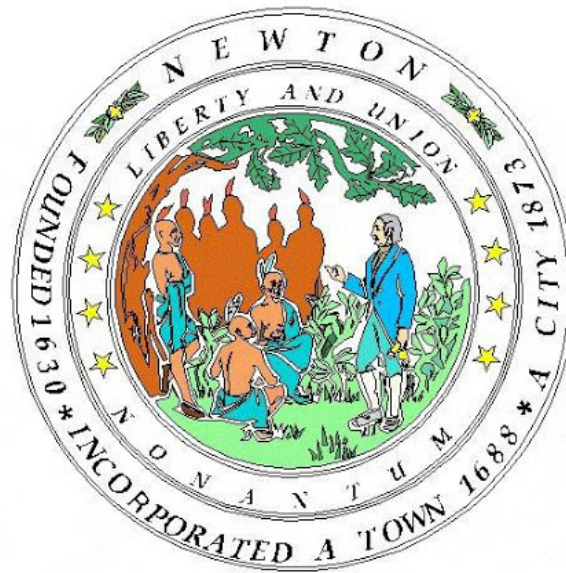
Nicole Freedman, Director of Transportation

Nfreedman@newtonma.gov

GREEN INTERNATIONAL AFFILIATES, INC.
CIVIL AND STRUCTURAL ENGINEERS



Transportation Peer Review
Riverside Station, Grove Street, Newton, MA



May 5, 2020



GROVE STREET EXISTING CONDITIONS



- ***Existing width is approximately 26 feet.***
 - *1 foot shoulder, 12 foot lanes in each direction, striping faded.*
- ***Grove Street is classified as an urban minor arterial with a weekday average daily traffic (ADT) of approximately 14,000 vehicles per day (vpd) and a projected ADT of approximately 17,000 vpd.***



LANE WIDTH CRITERIA - MASSDOT

Range of Travel Lane Widths (In Feet)

Area Type	Roadway Type			
	Freeways	Arterials ¹	Collectors ²	Local Roads
Rural Natural	12	11 to 12	10 to 12	9 to 12
Rural Developed	12	11 to 12	10 to 12	9 to 12
Rural Village	N/A	11 to 12	10 to 12	9 to 12
Suburban Low Density	12	11 to 12	10 to 12	9 to 12
Suburban High Density	12	11 to 12	10 to 12	9 to 12
Suburban Village/Town Center	N/A	11 to 12	10 to 12	9 to 12
Urban	12	11 to 12	10 to 12	9 to 12

MassDOT Guidelines on lane widths:

- **“Travel lanes narrower than 10 feet are only appropriate for local roadways and some minor collectors with very low traffic volumes and speeds.”**

The “usable” shoulder width for Arterials is 4’ min. However, due to the separate bicycle and pedestrian facilities, a usable shoulder should not be required with a design exception waiver for the portion under MassDOT jurisdiction.

Minimum Shoulder Width (in feet) to Provide Various Functions

Shoulder Function	Roadway Type	
	Arterials	Collectors
Drainage of Traveled Way	1.0	1.0
Lateral Support of Pavement	1.5	1.0
Encroachment of Wide Vehicles	2.0	2.0
Off-tracking of Wide Vehicles	2.0	2.0
Errant Vehicles	3.0	2.0
Bicycle and Pedestrian Use	4.0	4.0
Emergency Stopping	6.0	6.0
Emergency Travel	6.0	6.0
Mail Delivery and Garbage Pickup	6.0	6.0
Law Enforcement Operations	8.0	6.0
Large Vehicle Emergency Stopping	10.0	10.0
Occasional Travel/Detours	10.0	9.0
Highway Maintenance	8.0	8.0



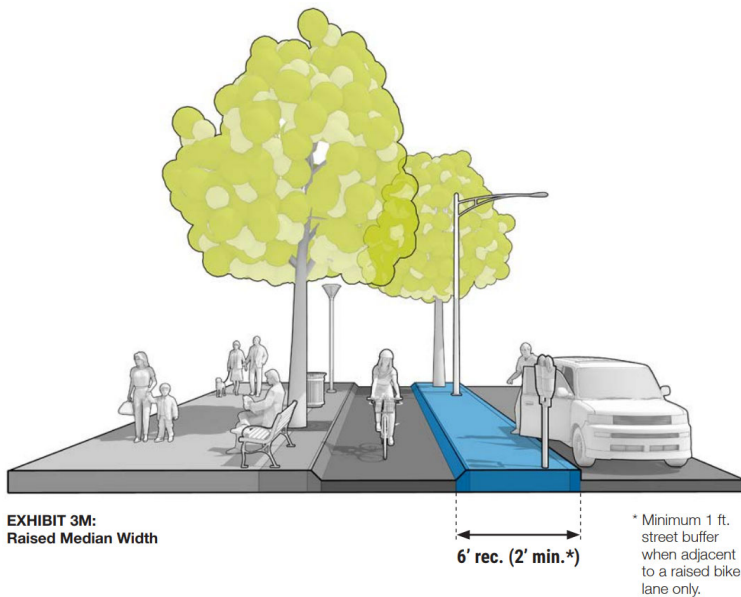
BIKE LANE CRITERIA - MASSDOT

For one-way separated bike lanes with low volumes of bicyclists (less than 150 per peak hour), the recommended width of the bike lane zone is 6.5 ft. This is the width needed to enable passing movements between bicyclists.

In constrained conditions where the recommended width cannot be achieved, the bike lane zone can be a minimum of 5 ft. wide. Where additional space is available, 6.5 ft. wide passing zones should be provided.

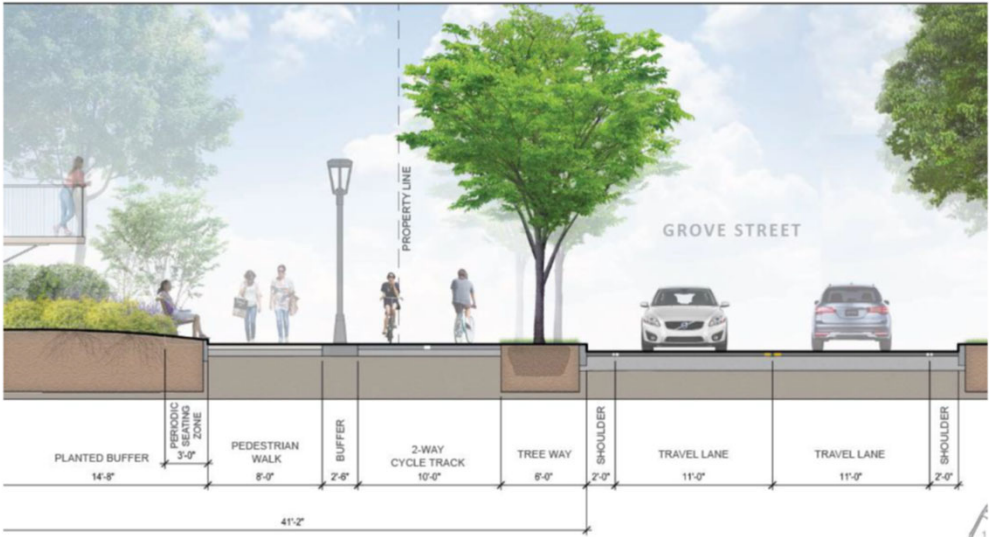
Beveled or short curbs (2-3 in.) are recommended for separated bike lanes <6.5'

Two-way bike lanes are wider than one-way bike lanes to reduce the risk of collisions between opposing directions of travel. For two-way bike lanes with low volumes of bicyclists (less than 150 per peak hour), the recommended width of the bike lane zone between two curbs is 10 ft.





GROVE STREET ALTERNATIVE - C



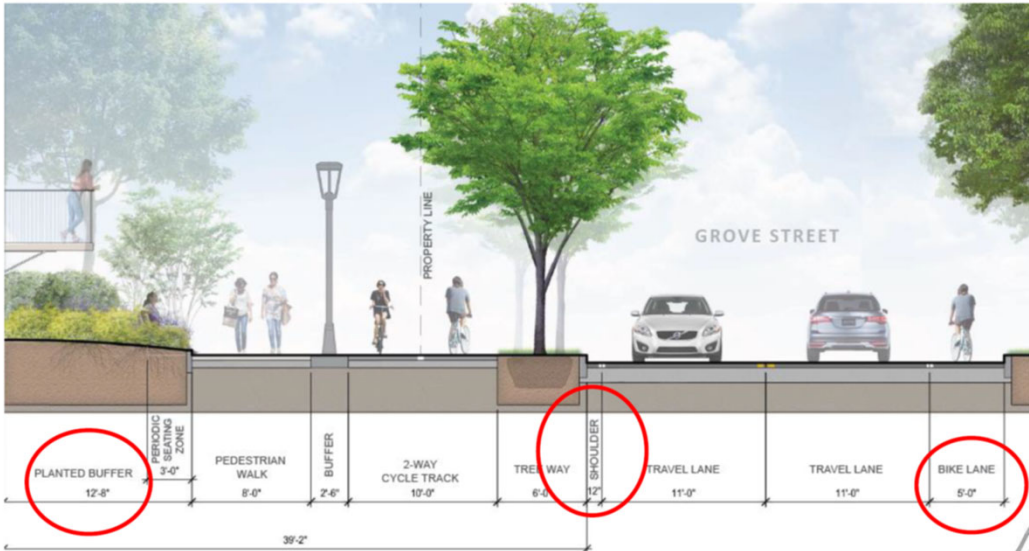
Grove Street section - similar to existing conditions (11+2 vs. 12+1).



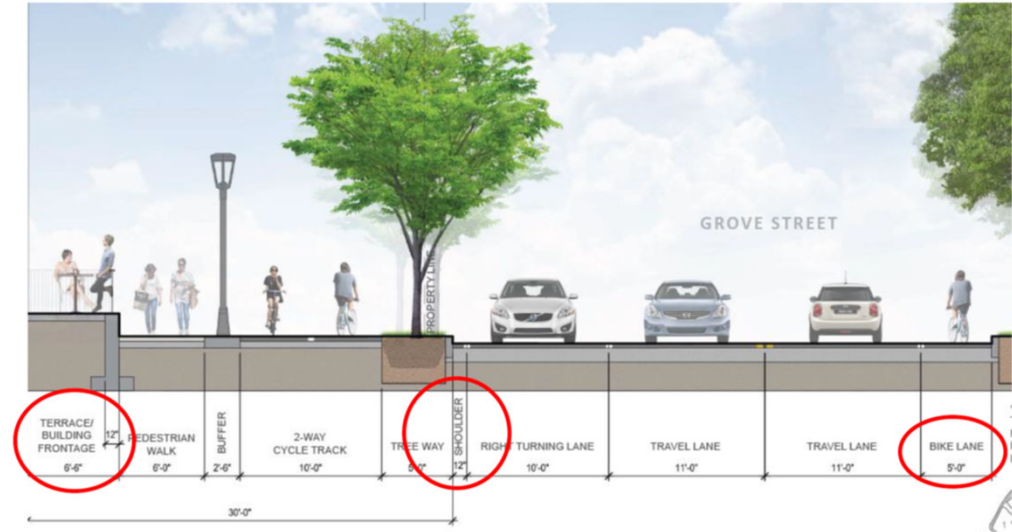
Grove Street section - 11' lanes, 10' turning lane, 1' shoulder.



GROVE STREET ALTERNATIVE - A



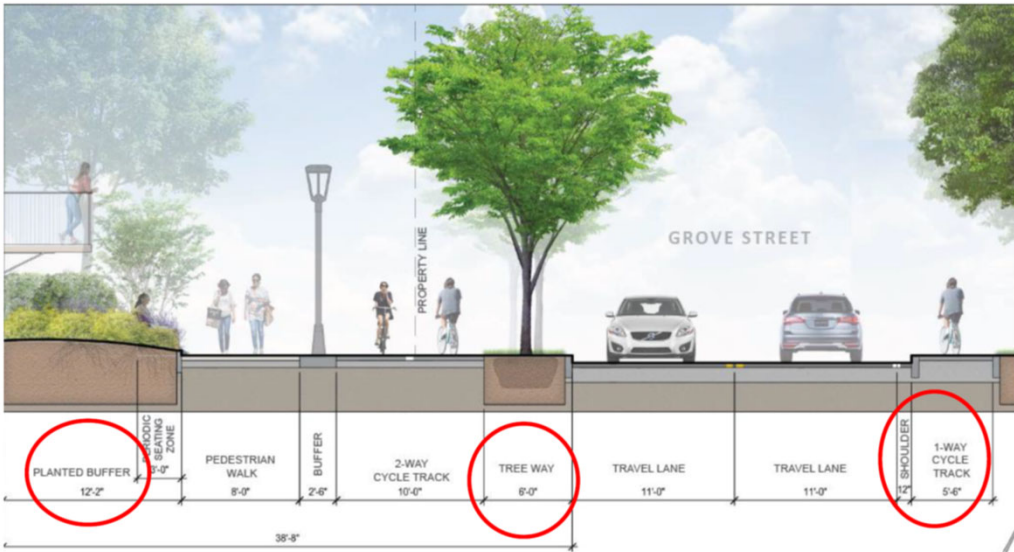
Grove Street section - 1' inside shoulder, 11' lanes, 5' bike outside shoulder.



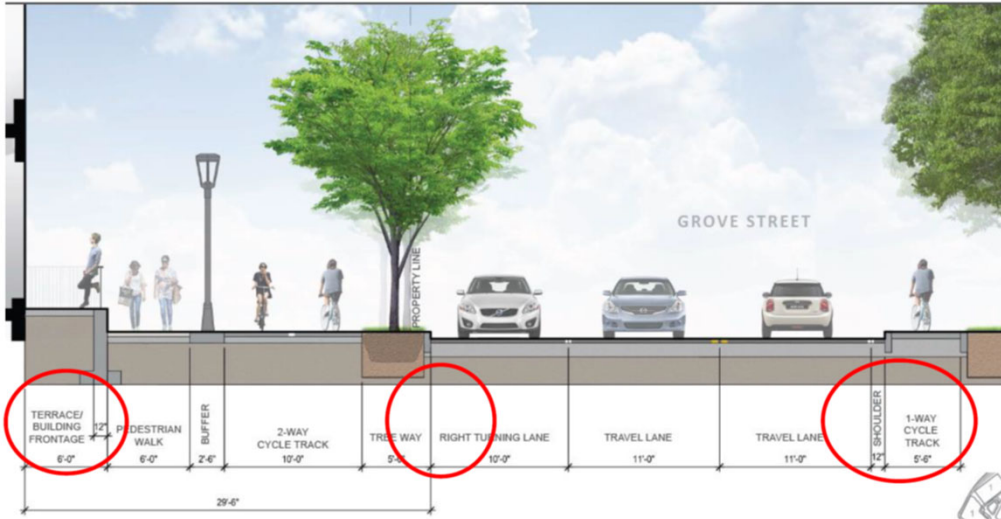
Grove Street section - 1' inside shoulder, 11' lanes, 10' turning lane, 5' bike outside shoulder.



GROVE STREET ALTERNATIVE - B



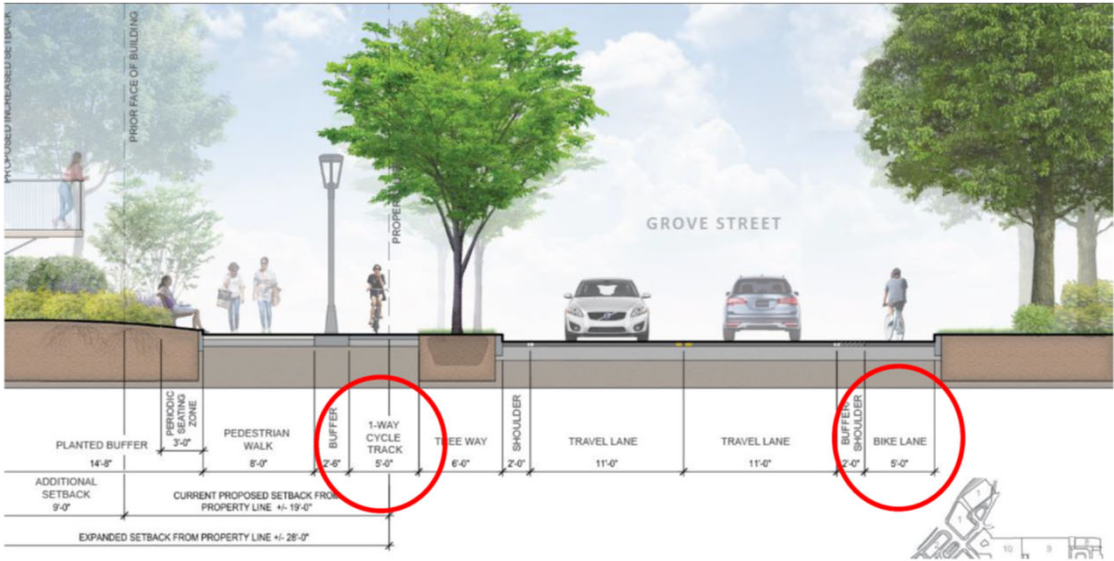
Grove Street section - 11' lanes, 1' outside shoulder, no inside shoulder



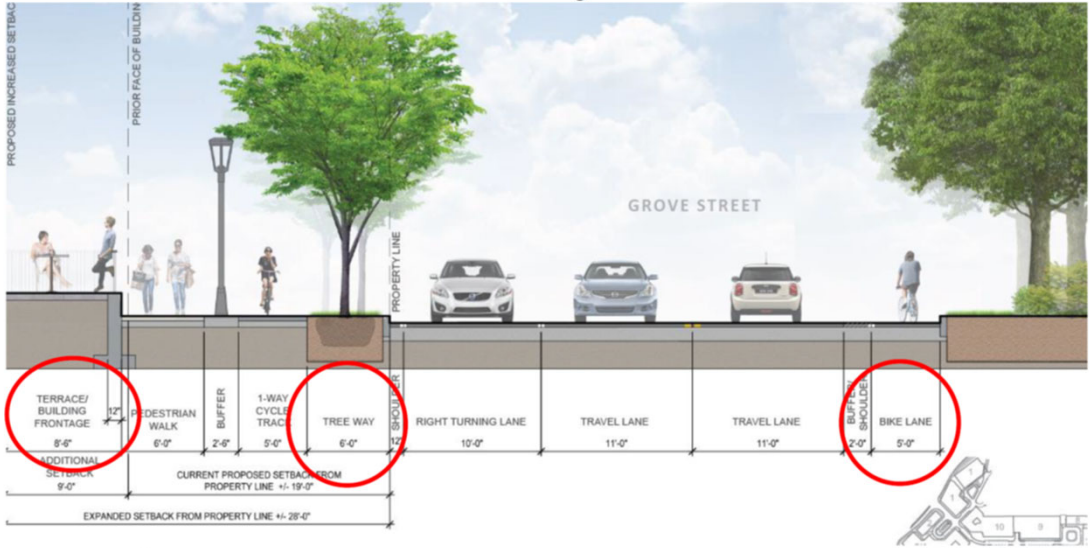
Grove Street section - 11' lanes, 10' turning lane, 1' outside shoulder, no inside shoulder.



GROVE STREET ALTERNATIVE - D



Grove Street section - 11' lanes, 2' shoulder/buffer, 5' bike lane.



Grove Street section - 11' lanes, 10' turning lane, 1' inside shoulder, 2' outside shoulder/buffer, 5' bike lane.



CHESTNUT STREET, NEWTON



- Minor Arterial, Scenic Roadway
- 24 foot width = 12 foot lanes no shoulder (=11+1)



WALNUT STREET, NEWTON



- **Minor Arterial**
- **32 foot width = 11 foot lanes w/ 5 foot shoulder (for bikes)**



BEACON STREET, NEWTON



- **Minor Arterial**
- **32 foot width = 11 foot lanes w/ 5' shoulder for bikes**



WOODLAND ROAD, NEWTON



- **Minor Collector**
- **20 foot width = 10 foot lanes w/ no shoulder or striping**



GROVE STREET – PEDESTRIAN CROSSINGS

Grove Street at Grove Street Extension



Commonwealth Avenue at Lexington Street



- Signalized crossing
- Refuge Islands must be at least 4' min width, 6' recommended.
- Pedestrians can cross in phases.



GROVE STREET – PEDESTRIAN CROSSINGS

Grove Street at MBTA Plaza

Grove Street Looking South towards Riverside – Visibility Limited



Grove Street Looking South towards Riverside – Approaching Crossing Location



Approximate Crosswalk Location



GROVE STREET – PEDESTRIAN CROSSINGS

Kimball Farms - Littleton

Littleton Road Looking East towards Kimball Farms = limited visibility



High Visibility Crossing



GREEN INTERNATIONAL AFFILIATES, INC.
CIVIL AND STRUCTURAL ENGINEERS

