RCIC

Rutherford Corridor Improvement Coalition

www.RCIC-Charlestown.org

March 13, 2018

Boston Metropolitan Planning Organization (MPO)
c/o Alexandra Kleyman AICP
TIP Manager
Transportation Building
10 Park Plaza, Suite 2150
Boston, MA 02116

Re: Request for Comment on Ten Year Transportation Improvement Plan: Deferment of Boston - Reconstruction of Rutherford Avenue, From City Square to Sullivan Square (FY2021 and FY2022) (606226)

Members of the Boston MPO,

We are submitting this letter to respectfully request that the above referenced project, the reconstruction of Rutherford Avenue from City Square to Sullivan Square, be deferred one year within the TIP plan to allow a more comprehensive examination of possible alternatives to take place. As you are aware, at the MPO's November 2017 meeting, members of RCIC provided an overview of neighborhood concerns about the City of Boston's preferred design, one which proposes to rebuild underpasses on Rutherford Avenue at Austin Street and at Sullivan Square at significant federal, state, and local cost. We presently have nearly 560 signatures from area residents and businesspersons who seek a solution to the Rutherford Corridor that will provide the greatest benefit for Charlestown residents and local businesses (see Attachment A). As mentioned in our October correspondence, in its most recent design process for this project, the City of Boston did not provide the community with a viable surface design for its consideration, nor has the City provided cost estimates by which an underpass design and a surface design can be compared.

Since the October meeting, a viable surface design for Austin Street has been prepared by Professor Peter Furth of Northeastern University. As can be seen from the attached materials (see Attachments B and C), not only is this design better than the underpass design for traffic movement, it offers tangible benefits to the neighborhood including a continuous linear park that relocates moving traffic away from nearby homes. This surface design has not been analyzed and compared to the underpass design by the City, and, importantly, no community meeting has been held to discuss the merits of each. (In addition, the City has revised its concept plans for Austin Street and Sullivan Square in significant ways which further diminish neighborhood benefits, as seen in drawings provided to two City Council members on February 22, 2018. The City has not yet presented those revisions to the community for review and discussion.)

The Rutherford Corridor Improvement Coalition believes it is inappropriate to proceed with an unduly expensive and perhaps flawed dual underpass design when a potentially less costly alternative, that provides safer walking and bicycling and comparable traffic operations may be feasible. Please note that Professor Furth is also preparing an improved underpass design for Sullivan Square that also warrants

review and consideration. In addition two graduate-level classes at Harvard University and MIT are reviewing the project from transportation, land use, and process perspectives and their analyses and insights will be available later this spring.

We strongly urge the MPO to defer the reconstruction of Rutherford Avenue from City Square to Sullivan Square for one year to provide time for a thorough examination of design alternatives and cost estimates for Austin Street and Sullivan Square, and to allow for full consideration by the MPO and the Charlestown community.

Sincerely,

Ivey St John for

the Rutherford Corridor Improvement Coalition (RCIC)

RCIC is a coalition of advocates supporting the rebuilding Rutherford Avenue & Sullivan Square to reflect goals and objectives of Imagine Boston 2030 and Go Boston 2030. We seek to return these streets to urban residential & commercial use, reflecting conditions in the other parts of Charlestown.

cc:

Boston City Councilors Lydia Edwards, Michelle Wu, and Ayanna Pressley
Chris Osgood, Chief of Streets, Boston
Gina Fiandaca, BTD Commissioner
Nathan Peyton, MassDOT
Danny Ryan, State Representative
Jon Lenicheck, Office of Representative Michael Capuano

Attachments:

A1 Surface Option Petition Signers (two 2017 petitions combined)
A2 May 2017 Petition to Mayor Martin Walsh & City staff
A3 October 2017 Petition to LMRWG & MPO
B A Viable Surface Alternative for Rutherford Avenue at Austin Street, Professor Peter Furth, Northeastern University, February 26, 2017
C The Underpass Option at Austin Street: Impacts and Comparison Against the 7-Lane Surface Option, Professor Peter Furth, Northeastern University, February 26, 2017
D RCIC letter to MPO, October 19, 2017
E RCIC presentation to MPO, November 14, 2017
F RCIC letter to MPO, June 15, 2017
G RCIC letter to LMRGW, October 2, 2017 (with attachments A-E)

Summary: 558 names, of which 498 are listed on the RCIC website.
http://www.rcic-charlestown.org/about-us.html

PETITION TO BOSTON MAYOR MARTIN WALSH & CITY STAFF
May 2017

Dear Mayor Walsh,

I am writing to express my support for the Surface Option for the redesign of Rutherford Avenue and Sullivan Square and my opposition to any underpasses. It is clear that Rutherford Avenue is not working well for the Charlestown neighborhood. It is far wider than necessary, noisy, polluting, dangerous to cross, and economically inefficient.

Rutherford Ave should become a vibrant, surface-level city street that works for everyone, not an intimidating highway that separates us from our neighbors.

I have studied the surface and underpass options carefully using resources provided by BTD and additional information shown on the updated website, www.rcic-charlestown.org. While I understand that more detailed decisions remain for the next phase of planning, I respectfully urge you to support the Surface Option as the conceptual basis for the designs for Rutherford Avenue.

Thank you for your attention.

PERSONAL RESPONSES FROM MAY 2017 PETITION SIGNERS

Highways move us backwards and benefit the few at the expense of the many. Greenways build communities and links between them.

As a resident and father of two young kids on Washington Street, just steps from Rutherford, I want Rutherford to be a vibrant city street with good walking/biking connections to North Point Park, Bunker Hill Community College T station, and more--not a noisy highway that separates us.

Don't let Wynn and irresponsible road planning hurt Charlestown. The surface option is what the neighborhood (the people who live here) want.

Respect Charlestown residents and fulfill the 2030 vision for Boston. That is what I expect from the Walsh administration.

Please do not throw out the Surface Plan, the focus of years of community meetings and thoughtful study. Its simple grid pattern facilitates a major transformation of Sullivan Square into an attractive people-centered place to live and work. Any underpass design, particularly the poorly conceived one proposed, will reduce the potential of the Square and the environmental benefits of the linear park along Rutherford Avenue.

Having lived 45 years in Charlestown and supported many of its changes, I believe in the importance of creating the improvements for Sullivan Square that the Surface Plan will bring.

Please do not abandon the Surface Option, which is what the residents of Charlestown have voted for. I understand that the casino adds a new challenge, but that is no reason to abandon the vision that we

chose, which is a boulevard that prioritizes neighborhood residents and not those driving through, and improves bike travel and green space for our community. Thank you.

My home abuts Rutherford Avenue, our plan has always been to continue to raise our family in Boston. We are invested in Boston Schools and the Boston community. We believe the Rutherford Ave project should put Boston families and outdoor pedestrian use before high speed traffic. Both my husband and I work in the Backbay and Fenway areas and ride our bikes or take public transportation. We expect our children to also commute on public transportation as they move from elementary schools to middle and high schools outside of Charlestown. Please make the decision that is best for Charlestown residents and not the surrounding neighborhoods who bypass our community.

We worked so hard on thi and thought we had a consensus, only to see it disappear

Moreover, the Surface Option as conceptualized earlier provides developable parcels at Sullivan Square that promise to create a vibrant, pedestrian-friendly, transit-oriented district.

I live a block off of Rutherford Ave and don't think that the scale and speed of the current roadway is consistent with the historic, residential neighborhood of Charlestown, especially from City Square to Austin St. This area is home to many families and children, and more sidewalk space, dedicated bike lanes, and foliage/landscaping would all help make this section of road more consistent with the adjacent Town Hill neighborhood.

The more traffic friendly you make this corridor, the more traffic this neighborhood will have to endure. Without this surface option, Rutherford Ave will continue to be the storage area for overflow traffic and our neighborhood will remain inundated with air and noise pollution with an insurmountable physical barrier running through it. We already suffer with the central artery, please do not continue to add insult to injury by refusing to return the Rutherford Ave corridor to the vision promised upon completion of the Central Artery North Area Project.

Please keep in mind what's best not only for traffic but for this neighborhood and pedestrians, who are so often forgotten in Boston. As someone who walks through Sullivan Square, I know all too well what a nightmare it is to get through on two feet. Not to mention how ugly it is.

It is clear to me that when you compare the surface option to the new tunnel option the tunnel option fails on so many points it should have never been explored at all. It will waste up to $50,000,000 on a tunnel situated in a flood plain and that they cannot afford to maintain. That money could be more wisely spent elsewhere. It sacrifices up to 50% of the land that would be available for development and the accompanying property taxes compared to the surface plan. It does nothing to alleviate traffic since the number of lanes leaving and entering Charlestown does not change. In fact it will create congestion at the merge and cause traffic to sit on Charlestown roads causing serious air pollution for the town. This tunnel plan is a dumb idea, and should be rejected. The tunnel idea is a dated mid 20th century idea and does not belong in the thinking of urban planners in the 21st century.

Boston is our amazing city and the surface option that extends magic of the "green way" . The surface option is something that will adding value to residents for generations. So much can be done in a creative long-lasting way on the Bunker Hill Community College side of our town by building the surface option.

Thank you for your attention.

My Federal Tax dollars pay for a highway that parallels New Rutherford. There is no reason New Rutherford should be a commuting corridor - that is exactly why we have I-93. My city tax dollars would pay for the upkeep of this road; and it is not my concern as a resident of Boston whether the commuters from Winchester can get to the casino in Everett fast enough after work. My concern is for the health, walkability, and tax burden for my neighborhood. I hope yours is as well.

Furthermore, as a resident who lives at the very intersection of Essex Street and Rutherford Avenue and it the parent of two small boys (ages 6 and 8), I am most concerned with the impact that these changes will have on the residents of Charlestown. My wife and I made the decision to stay in Charlestown and raise our family here in part due to the process of the eventual Rutherford work. We have enrolled our boys in BPS, and are committed to making Charlestown a family-friendly place to live. We hope that you and your administration will support the project that places the residents first and the passer-throughs as secondary.

I work in Charlestown, and feel that the residents here deserve the features that the surface option offers.

The Surface Option contains the minimum set of design concepts needed to make this area a walkable environment, which it is not now.

"After years of meetings that the community participated in and came to a decision to support the surface option that made this area more walkable and safer, the city seems to be flip flopping to please Trump pal Steve Wynn. I know he is throwing around cash to get the design changed to make it easier to drive to his casino, but we all have to live with the changes, he will just be cashing checks in Las Vegas. Jamaica Plain was lucky enough to get the Casey Overpass approved to be demolished and replaced with the surface option at the same time, but construction actually moved forward and is coming to completion. And guess what, its much improved for the neighborhood and the world hasn't imploded and traffic still flows.

We shouldn't have to destroy our city just because it benefits Trumps pals. Walsh should stand up to Wynn and stay with the surface option, or my family will not vote for him again.

I think the Surface Option is the best design for Charlestown residents and the City and is in keeping with the effort to make Boston a more pedestrian-friendly place.

Over the last 75 years, many sections of Boston have been slashed apart by major highways & roads. While people need to get through and around Boston, we should be making choices that support street level development and making our communities more livable, and not just treating certain areas as "fly over areas" for commuters to bypass.

Thank you for recognizing the need for change in our neighbourhood. Please consider our community and support our choice of the surface option

Thank you for your attention to this matter.

Safe crosswalks on Rutherford Avenue

I STRONGLY Support the Surface Option @ Sullivan Square ! Dodie

Please consider the fact that Charlestown has 3 bridges each with 2 lanes 2 ways. Keeping that structure throughout Rutherford Ave. will avoid "merging" which is what delays movement of automobiles. There are many, many reasons NOT to do the underpass, one being it was the choice of the majority of the Charlestown Community. Thank you.

I am in full support of the Surface Option for the redesign of Rutherford Avenue and Sullivan Square.
I understand that this might be the best option for the community.

I totally support this petition and a smaller street option for Rutherford.

Mayor Walsh is taking the residents of Charlestown for granted. Sullivan Square is a nightmare for motorists and pedestrians. The Mayor should make traffic enforcement laws a priority with police manpower controlling activity where no traffic signals are present. MBTA riders cannot predict when busses will arrive when the rotary has no control points. Fix it for the future!!

I was born and raised in Cambridge/Somerville and my husband used to joke that I might need a passport to cross the Gilmore Bridge, but in the few years since we have moved to Charlestown, we have made many friends in the neighborhood - old timers who tell us stories about what our street used to look like and young families who (like us) moved here to raise their kids in an urban environment that still feels like a close-knit community, steeped in history. The majority of these people share our vision of a lively, connected, walkable, and transit-oriented neighborhood. I hope the City will make its decision based on what is best for the people of Charlestown - not the cars and trucks that drive through. To make this decision based solely on vehicle capacity and ignore factors like cost, resiliency, pedestrian/bicycle safety and sound urban design would represent outdated, 1950s-style transportation planning and would be inconsistent with the City's stated planning goals.

"Mr Mayor I am 65 male.I love biking from Medford to Boston navy yard castle island JFK library.Going thru Sullivan Sq.is scary A protected lane is a must not painted green lanes.Hope to see under pass bridge under Rt 99 as they did in Summerville on rt.28 Thank You"

Rutherford Avenue is a blight on the edge of Charlestown. As currently configured, and in the underpass plan that is being proposed, the roadway inhibits the logical development of the street into a vibrant, connected part of the town. There is an opportunity for the City of Boston to implement a visionary solution to the real problem of excessive vehicle transport through the neighborhood. I urge the City to build the surface option and support the right of the Charlestown neighborhood to a 21st Century vision and realization of a pedestrian oriented, urban street plan that promotes stronger community and economic development, better air quality, and less traffic congestion along this corridor .

The Surface Option is the best long-term vision for this Rutherford Avenue which will help bring community together and integrate Charlestown into Boston proper.

Rather then further divide Charlestown with thru traffic of commuting suburbanites, our City and State need to take this rare opportunity to knit Charlestown back together again by undoing the underpasses for thru traffic inflicted on us the last century! Calmed traffic, green space and a safer historic community can result in this core part of Boston.

I frequently walk and bike around Sullivan Square and appreciate the surface-level option to create a safe walkable and bikeable neighborhood connection.

Any redesign of Rutherford Ave that occurs should serve to reconnect Charlestown with it's surroundings and create a vibrant, walkable, multi-modal corridor with the opportunity for green infrastructure that is designed to match the charming neighborhood feel that so much of Charlestown is known for. As someone who spends most of my time in Charlestown for work and commutes to my office on Sullivan Ave via the T, I feel very strongly that the surface lot option is far superior to the underpass option which would further disconnect Charlestown from it's surroundings and is in opposition to the vision of Imagine Boston.

The surface option is a superior alternative - providing opportunities for green space and decreasing unnecessary traffic through the neighborhood. Charlestown is a vibrant community where families are increasingly staying in the city and raising their children. Increased green space and reduced traffic will help this community continue to thrive.

I have lived in Charlestown and Somerville over the past 10 years and use Sullivan Square T stop daily. I have been dismayed at the lack of progress on this plan and improvements to a largely overlooked corner of Boston. With increasing development all around Sullivan Square, there is no more time to waste.

Our city streets should not be highways! City neighborhoods depend on our main streets serving local needs. Improved public transportation and appropriate highway ramps should be designed to reduce traffic on city streets.

Please consider the good people (and voters) of Charlestown, a community that desperately needs traffic relief! Thank you.

As a resident of Winter Hill in Somerville, I often bike to and from Sullivan Square to access the Orange Line. Traffic conditions for people walking and biking in Sullivan Square are unsafe as it is and the underpass option will only maintain the status quo. Please select the surface option to promote a safer and more sustainable Sullivan Square neighborhood.

I am an employee of a business on Rutherford Ave for the last 25 years.

The easiest way for me to visit my family in Charlestown goes around through Sullivan Square. My friends and myself have sadly called it the Circle of Death, due to the danger it poses to all road users. It is poorly design for pedestrians and cyclists, but also for motorists. The condensing of lanes from the highway is clunky and the circular path can be difficult to navigate (I've seen it many times first hand as a passenger). We need a better design for this area to ensure the safety of our road users.

I bike to Boston everyday would love a safer route from this side of Somerville into the City.

We need a real workable option that makes Sullivan Square safer for both my family, kids, and commuters walking from the station. The current option is unworkable and the current state is a mess. Rutherford Ave. has a real possibility to be a gem of Boston and Charlestown and not just a pass-through

for commuters speeding down it. It is time to consider an option that makes Charlestown a real neighborhood end to end.

We already did this! Give us the bike facilities the community fought for!

I live in East Cambridge but work in Boston and often go to Charlestown because my gym is there. The overpass needs to come down! Not least because this was already shown to be what people in Charlestown want. Frustrating for this to be reopened.

"If you build it, they will come." No truer words have been spoken. Build a high-volume traffic sewer and it will soon be filled with traffic. Let the casino customers take I93 and get off in Medford. Build the surface option here so we may reclaim our neighborhood and reconnect with the rest of Boston and our neighbors in Cambridge.

I support the surface option and would like to increase the feeling of community and pedestrian friendliness in Charlestown

Ion addition, the underpass design improves regional traffic flow by only 1% or2%. What are you and BTD sacrificing Mayor Menino's design which reunites to two sections of Charlestown and assures safe passage for pedestrians and cyclists through the traffic nightmare which is the current SS.

I am disappointed that the city continues to push the tunnel option despite wide spread Charlestown support for the surface option YEAR AFTER YEAR. A major concern is the tunnel option does not make Sullivan Square more accessible or safe for pedestrians. In addition to this, the tunnel option will be: expensive to build and maintain, include transition segments that preclude connectivity, are vulnerable to flooding, occupy area that could be used for green space and flood storage with pavement and preserve undesirable roadway capacity that will continue to draw regional traffic to Charlestown which should be using nearby highways. Traffic is already flooding our streets and we are an island with only three access points in and out. Charlestown is real community that will be strangled by traffic and pollution with the tunnel option. Please reconsider the surface option and save our community; listen to the people of Charlestown they are speaking loud and clear.

The surface option was approved to unite Charlestown. Put the traffic on I-93 and not through Charlestown!

"My 3 kids and kids/adults from our very popular Town Track Club need more free space to safely run (and bike). Last summer the program was the largest in the New England at the Usatf junior olympics. Largely because of kids coming from surrounding neighborhoods and schools to our track in Charlestown and our XC course in Paul Revere Park. There is grave concern for the health of our children. Research shows kids in our city are getting far less than the minimum required aerobic exercise.

The biggest barrier for principals and parents is the fear of how to get kids safely from point A to B - without being impeded by the major highways that wall us off. So instead of allowing kids to run/bike outdoors during/after school. Bike racks remain empty. We bus kids from one constricted indoor location to another. Just to go a mere half mile. This is a waste of time, money, and resources! Please allow the formerly agreed upon surface option to proceed. Its the one gem we deserve that mirrors our love of our city and the healthiest choice for all of us who our proud to call our city ""Home!"""

It is the City's responsibility to be forward-looking and seek the solution providing the best framework for the future. The surface option for Sullivan Square and Rutherford Ave offers better resilience, better development options and better pedestrian and bicycle connectivity than the underpass option. Please address vehicular traffic improvements in context with proper perspective of the future of this important urban place ... one which the City has recognized within "Imagine Boston 2030". Don't miss the opportunity to create the most responsible plan.

Surface option is the only way to achieve what Bostonians said they wanted in your 2030 report.

People should have more votes than cars...ie neighbors should have more votes than through traffic. Since my home faces onto Austin Street, close to its intersection with Rutherford Avenue, and since I am a frequent user of the T and a walker, I am particularly concerned about the future of Rutherford Avenue and the health of our community (as well as for the environment of all of Boston). The surface option for Rutherford Avenue and Sullivan Square will bring, among its other benefits, the addition of more trees (to fight climate change as well as enhance the neighborhood), improved connections to the T, and better facilities for bicyclists and pedestrians. It is thus the best solution to improve the quality of life for residents in Charlestown and its surrounding communities.

Let's construct the surface option that is consistent with the laudable GoBoston 2030 plan. It is unwise to build an underpass in a zone that will currently flood during category 2 hurricanes at high-tide right and that is predicted to flood monthly in only 30 years with Climate Change . The surface option is additionally a much better urban design and neighborhood street for the city.

This is a key bicycle connection from the north suburbs into Boston and the urban core. The surface route will serve all users much better than the existing configuration.

"The Charlestown community has participated in this process, spent untold hours, and enormous energy to consider the best option. Please listen to The People. The struggle for the community to be heard erodes our democracy, on the local, state and federal level. We seek a responsive, representative government. Thank you. "

I own two properties on Sullivan Square, 24 Cambridge Street and 40 Cambridge Street, and I am in strong opposition to the underpass option. The surface option will greatly enhance the neighborhood and make it far more pedestrian friendly. This is a major gateway into Boston and the City of Boston should treat it as such and invest the time, energy and money to make it the best that it can be. The surface option is the only option that will create a new and vibrant area for the whole community to enjoy.

Do not take away what we in Charlestown decided we wanted versus what Wynn would want.

This is the best option for access to transportation, parkland, additional housing. It is inline with complete streets and Vision Zero—both of which you have signed onto to. And is the only option that is "resilient" as water levels rise. It's a slam dunk. People friendly streets create vibrant and economically successful cities.

A surface option supports Vision Zero. Making Charlestown safer amd more accessible for residents, those exploring the historical sites of Charlestown who have to traverse Rutherford from the T stops,

Bunker Hill students accessing the community, and those who commute on foot or bike to Kendall Square who remain without public transportation options.

The Charlestown neighbors have been planning and meeting for years to come up with a functional surface option that satisfies people. It is a really bad sign for your administration not to support Boston residents on a project that is so important to them. Bodes poorly for other ongoing projects, and for your term as Mayor. It would be helpful if you cared enough about these issues to hire new and up-to-date staffing at Public Works and BTD. It is long past time!!!

We only have one chance to do infrastructure right. Everyone who lives in and around Boston has a stake in making the city more pedestrian friendly.

no underpass, put the roads on a traffic diet and increase walkability

Please reconnect our neighborhood to the city on a human scale. Our population will soon explode (One Charlestown) and we need a safe healthy way to access the city (for work, city services, and pleasure). Feeling very underrepresented at the city and state level at the moment (when your own state rep. disregards years of work and a hard won consensus, it is frustrating). And when your city agrees to increase density from 16,000 people to 23,000 without adding park space, schools, sidewalks, bus routes, or other infrastructure for those additional 7,000 neighbors, its frustrating. (I am not opposed to increased density - it is a city after all - I am opposed to poor planning.) At least let us keep the surface green space that you promised us before you increased our density. Makes no sense to increase density and reduce green space/bike paths at the same time.

Please keep the Surface option as originally planned.

My office (Appalachian Mountain Club) will be moving to Charlestown at the end of the summer. As a bike commuter, the safety of the streets I commute on is very important to me--Boston should be emphasizing and encouraging bike commuting. That is what the city should look like in the future. Bike commuters should not be afraid for their lives en route to their offices--that is the current situation at Sullivan Sq. (Not to mention connecting the Orange Line to the wider Boston community would be hugely beneficial for local communities and economies.)

My family and I would like to remain in Boston, and specifically our home in Charlestown, but the congestion and traffic in our backyard downgrades the quality of living.

This would be very important for my safety commuting to work in City Square and for the ease of life in the area. Right now it is dangerous and unpleasant to bike in the area and there is a lack of neighborhood feel.

We want this area to be walkable and safe for users. The surface option does that.

*"A few colleagues and I need to utilize this way on our bikes for a commute. Could we use cars? Sure. But we want 1.) Better health 2.) Better city life / living 3.) To be part of the solution to congestion and health-affecting local air pollution propagated by ""car culture."" More transit, safe streets for *all* modes of transit, and the correct long-term infrastructure is an investment in the present AND the future. Let's make Boston enviable. We don't have to reinvent the wheel here, but we are a hub of innovation and I think we can do even better.*

Four years ago I started a company that, so far, puts millions into the local economy - I really don't want to have to move it somewhere else. I sold my team on Boston being a smarter, more European-like way of life that still retains that American rugged work-ethic at the same time. A perfect hybrid. I was born and raised in the area, although I've now travelled all over. I want to be proud of my home region again. I think you, Mayor Walsh, can be part of our solution. Thank you for considering these heartfelt words. "

This was already the consensus of the majority of residents in Charlestown.

As a resident of East Somerville who uses Sullivan Station and shop in Charlestown, I strongly support the surface option because it is simpler, safer, provides needed green space and should make traffic flow much better. The tunnel option only replicates a very bad road configuration.

Charlestown needs to continue as a vibrant community with more pedestrian access and people space. This option supports that need.

I participated in the community planning process around the Sullivan Square the Rutherford Avenue redesign while a resident of Charlestown, and I, along with the majority of Charlestown residents, strongly supported the surface road option both at Sullivan Square and Rutherford Avenue. It is a travesty that after so much effort and a strong community planning process the City and BTD would throw away residents' input and preference for creating a safe walking and biking experience in these two areas in favor of allowing casino traffic to move freely through our neighborhood. Casino traffic should be routed to the highway, not through our town. I urge you to reject the underpass options in favor of human safety and creating a more pleasant Charlestown.

I live on the Somerville side of Sullivan Square, and walk and bike through Sullivan regularly. It's already a loud, dangerous, unsightly mess. On the other side of me is McGrath Highway, an underpass that Somerville is desperate to turn into a surface-level street because it divides neighborhoods and is scary to walk and bike under. But grounding an underpass is incredibly expensive. You have the opportunity to do the right thing from the start, and improve Sullivan for families, pedestrians, and neighborhoods. Please, don't make a future McGrath.

It does not make economic nor neighboorhood sense to have an underpass.

Surface Option! Surface Option! Surface Option! -- Looks to be the FORWARD-THINKING way. We THANK YOU for looking out for the People!

The surface option represents the preferred option of the residents of Charlestown during the previous 4 year design period. The surface option also provides more developable area.

Please make Rutherford Ave safe for pedestrians and cyclists as well as cars. People speed too fast and the concrete barriers are ugly and cut us off from the rest of the city. Please keep the surface option!

I am a Somerville resident, but I worked for 20 years in the North End, and I rode my bike to work. Whenever I could I rode down Main Street, Charlestowon, but sometimes I had to use Rutherford Ave, which was quicker, but ugly and dangerous. Rutherford Ave has potential to be a wonderful urban road-- I strongly oppose using underpasses, and I appreciate your work for Boston and Greater Boston residents.

I walk and bus through Sullivan multiple times a week and drive through there occasionally, it's a mess, it's dangerous for pedestrians and bicyclists especially. A community so close to a major transportation hub like Sullivan should be easily connected to it, and this is a chance to do that.

I regularly go to the Somerville side of Sullivan Square, and walk and bike through Sullivan. It's already a loud, dangerous, unsightly mess. McGrath Highway is an underpass that Somerville is desperate to turn into a surface-level street because it divides neighborhoods and is scary to walk and bike under. But grounding an underpass is incredibly expensive. You have the opportunity to do the right thing from the start, and improve Sullivan for families, pedestrians, and neighborhoods. Please, don't make a future McGrath."

After thorough review of all the proposals & supporting material, the Surface Option is the only "right" urban design option for Rutherford Ave & Sullivan Square. Please help the Charlestown neighborhood stay a neighborhood!

Bicycling and walking makes people healthier

Charlestown should not have to sacrifice beautification of Rutherford ave and proper bike lanes in order to accommodate the casino traffic that we did not want and had no voice in. If it cost more to make the traffic suitable for Wynn let him or Everett pay for it.

we will be prisoners of our success between the casino and development at sullivan, northstation, assembly square-we will be walled in without a wall, not tol forget I93N&S, I95N&S, Storrow DRive, and the new Charles One development. impossible to leave Charlestown now at peak traffic hours. We need help. Charlestown once had the worst respiratory problems and soon we will have that pollution again due to congestion. thank you.

Mayor Walsh: Rutherford Avenue serves suburbanites, not residents of Boston. Charlestown is the only neighborhood that has to cross a highway off ramp (Rutherford Avenue to the Gilmore Bridge) to get to the T station. Drivers take that turn going at high speed. I know of one case where an impatient driver pulled up on to the pedestrian platform because he didn't want to wait behind a car stopped at the light and almost mowed down two pedestrians. And Sullivan Square is dangerous to everyone, but more particularly Charlestown pedestrians, as well as a waste of valuable urban space. We are a one square mile community of less than 20,000 people. We need Rutherford Avenue to be part of our community for our economic health as well as neighborhood safety. The only way that will happen is if it becomes a neighborhood boulevard, with development on either side, rather than a highway. Charlestown is a neighborhood, not a highway pass through for suburbanites driving their cars into the city. Please, Mr Mayor: petition, pressure, cajole the State into finding solutions to stop cars from coming into Boston via Charlestown. This underpass is expensive and difficult to maintain over time because of the water table. It will eventually fail as the current one has. This is a waste of money and very harmful to Charlestown.

"I'm a walker, biker, and transit rider in Somerville. I would visit Charlestown and use Sullivan Station regularly if I could get there safely. The underpass option would be an incremental improvement over the existing setup, but would not significantly change the character of the area as a large interchange for cars. The surface option would.

Boston has said that they want to prioritize walkers and bikers over cars, but has not demonstrated that here. The decision to choose the underpass was based on traffic counts and intersection level of service,

not on walkability. It seems planners asked the question ""how do we build a neighborhood around a highway"" and not ""how do we move traffic through a neighborhood safely"".

At the meeting on 5/18/17, it was clear that induced demand was not taken into account in the decision to use the underpass. It was taken as a given that there would be lots of through traffic that we need to accommodate. But it's not a given. Making driving easy through Sullivan will encourage more through driving, and prioritizing walkers over cars will decrease traffic. We can choose.

I was told that moving traffic below would make the area more walkable but I disagree. There are more important things than traffic counts that determine walkability. The underpass option would include large stretches of uncrossable road and the unpleasant enviornment of a highway that I would not want to spend time near. The surface option's denser development, slower traffic, and more complete grid would be a much better place for walkers, with or without increased traffic and wait times.

Please revisit the assumption that traffic through Sullivan Square is inevitable, and appropriately weight pedestrian walkability over driver delay. Creating a walkable neighborhood will mean slowing down traffic, and that's okay."

I also want to encourage you to make bicycle and pedestrian friendliness a high priority in this project. My daily commute from East Somerville to the Charlestown Navy Yard would be greatly aided by a convenient and safe way to cross Sullivan Square on two wheels.

Boston should be a leader in urban development that fosters pedestrian and bike traffic, not car traffic. If we are to combat climate change, build strong communities, and decrease pollution in neighborhoods, we should be working to make infrastructure better for bikes and pedestrians. Not killing any cyclists, although a good goal to have, is a low bar. Let's look forward and plan for the future of fewer cars. Let's make Boston a beacon for carbon neutral transportation!

It is especially important that Rutherford Ave x Sullivan Square are super bike-ped friendly so that pedestrians and cyclists can easily (and will want to!) make this crossing to reach the Sullivan Sq T busway and subway, and the future GLX and Community Path extension down Washington Street in Somerville (.7 mi).

I ride my bicycle through Sullivan Square and Charlestown everyday in order to commute to my job in Boston. I'm very concerned about how unsafe these areas are for cyclists and pedestrians. I would like to see this area overhauled to make it more walkable, bikable, and livable. I don't believe that the two underpass options being proposed are in the best interests of the surrounding community and would very much like to see the city stick to the original surface design.

I risk my life riding through Sullivan Square on my way to work downtown every day. Please prioritize everyone's safety.

"Rutherford Ave is one of the options for my bike route into work every day. I generally choose not to go on it because it's packed with shattered glass and I don't feel safe with the passing traffic - even though the bike lane is wide cars travel super fast on that road. The ""circle of death"" hasn't really improved much even with the new additional bike lane. I still feel like I'm going to get hit any second by a car that doesn't expect me there. Any improvements along this stretch would be great - not only for cyclists, but for anyone living in Charlestown.

Don't make a decision based on the amount of people who drive cars today. Make the kind of decision that will encourage less people to drive cars tomorrow. Thanks."

Just because one of Trumps buddies thinks easy car access to his casino is more important than walkable, safe, vibrant neighborhoods doesnt mean Walsh should. While some people want to bring back the 1950s (in many ways, including prioritizing suburban car commuters over city residents lives, I and many others do not, and I will not vote for Walsh, and will work with others to do the same, if Walsh flips to the casino friendly tunnel option.

This is a unique opportunity for Boston and Charlestown to take liveability and quality of life to a new level. The world is changing fast and we need to take action planning for a world beyond single passenger vehicles.

PETITION TO LOWER MYSTIC REGIONAL WORKING GROUP &
METROPOLITAN PLANNING ORGANIZATION
October 2017

In 2016, approximately 3 years after the Surface Option was selected for Rutherford Avenue and Sullivan Square, Mayor Walsh and the Boston Transportation Department (BTD) re-opened the planning process and reintroduced the concept of underpasses at Sullivan Square and Austin Street. In May 2017, BTD announced it was now choosing to go with a plan that rebuilt underpasses at both locations at a cost yet to be determined. This decision was made despite the fact that outside experts at the Metropolitan Area Planning Council (MAPC) found a negligible difference between the Surface Option and the Underpass Option in terms of regional traffic.

We continue to support the Surface Option for Sullivan Square and Rutherford Avenue and concur with the letter submitted by the RCIC to the Lower Mystic Regional Working Group (LMRWG) dated October 2, 2017. We find that:

- The City's analysis was flawed in numerous technical respects;
- The City clearly focused the majority of its effort on the Underpass Option and did not meaningfully attempt to refine the Surface Option (which we recognize is needed);
- City data reveals that the difference in travel time from Sullivan Square to City Square between the two options is only 3 minutes in the year 2040 at the morning and afternoon peak, assuming all worst-case-scenarios (in terms of development, investment in mass transit, etc.). Given the potential margin for error, this is an unacceptably small gain for everything Charlestown must give up;
- The Underpass Option is not consistent with regional and local goals of promoting transit use, and pedestrian and bicycle activity;
- Any underpass will be expensive to build and maintain, vulnerable to flooding, occupy land area that could be used for green space and flood storage, and will reduce the space to be made available for new development (including affordable housing), pedestrians, and bicycles.
- The City was premature in selecting the Underpass Option when it did not fully explore the Surface Option and did not have information regarding the cost of both options.

We call on the LMRWG, MassDOT, the MPO, and Mayor Walsh to consider the technical issues identified by RCIC, and to undertake the alternatives analysis requested in the RCIC letter.

If you would like more information, please visit the Rutherford Corridor Improvement Coalition web site:

http://www.rcic-charlestown.org

Please indicate below if you are willing to have your name listed as a supporter on the RCIC web site - the more names we have listed, the more seriously agencies and elected officials will take our request.

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A Viable Surface Alternative for Rutherford Avenue at Austin Street

Peter Furth

Amelia (Yanran) Chen

Northeastern University

January 29, 2018; updated Feb 26, 2018 adding p.m. peak traffic analysis results

The City of Boston is planning now for a project intended to convert Rutherford Avenue in Charlestown from a wide highway into a boulevard with a linear park. Near the Austin Street intersection, the curb to curb width is 135 ft, including two surface roadways and a 6-lane underpass. This highway-style layout dates from the 1960s, when I-93 ended in Medford and dumped all its Boston-bound traffic onto Rutherford Ave. With completion of the Zakim Bridge in 2002, we have the opportunity to downsize Rutherford Ave.

A Greenway Vision

The vision first presented to the public around 2010 was a boulevard with a wide linear park on the neighborhood side that would buffer the neighborhood from traffic, add a much-needed recreation amenity, and fill in a missing link in the regional greenway network.

Underpass Option versus a Poisoned Surface Option

But city officials and others started worrying that the underpasses might still be needed, especially after the decision to build a casino in nearby Everett. So they had their engineering consultant create two options, one with a surface layout and one that retains the underpass at Austin Street.

In the underpass option, the number of lanes in the underpass is reduced from 6 to 3 (two lanes southbound, where traffic is heavier, and one northbound). However, because of needed surface roads, shoulders, and retaining structures, the curb-to-curb width in this option is 123 ft, only 12 ft narrower than the highway we have today. That leaves no space for the promised greenway; instead, for the majority of corridor, there is only a glorified sidewalk – a single path for pedestrians and bikes to share, with a narrow strip of grass on either side.

About 900 ft north of Austin Street, the proposed road shrinks to a 5+1-lane cross section (5 through lanes and a median that is sometimes used for a turning pocket); from that point north to where a new underpass at Sullivan Square begins, there is room for a linear park. However, that amounts to only 1/3 of the corridor. For 2/3 of the corridor, the underpass option completely undercuts the original vision and goals of the project.

The surface option they analyzed looks ideal – the road has a trim 4+1-lane cross section (2 lanes per direction plus a median / left turn lane), leaving 65 ft of parkland on the neighborhood side. But it's a poisoned option, because less than a minute of calculations will show that 4 through lanes could never carry the present traffic – much less future traffic – through the intersection at Austin Street.

Sure enough, the City's analysis of the surface option shows enormous delays and queues, because that option just doesn't have enough capacity. Does that mean an underpass must be needed? Of course not. With so much land available, the designers could have tried again, adding another lane or two, which would still have left ample space for a linear park. But they didn't; instead, the surface option was simply declared a failure, and in May of 2017, the City announced that it was going with the underpass option because only it could provide the needed traffic capacity.

Charlestown residents and advocates for walking, bicycling, and safer streets are dismayed to see the vision of human-scale boulevard with a continuous linear park summarily withdrawn. They are particularly angered that the underpass option was chosen without considering a *realistic* surface option. How can anybody – residents or City officials – know whether the underpass option is better if they haven't had a chance to compare it with a realistic surface option?

To help meet that need, we offer this analysis.

Projected Traffic Volume Scenarios

The City's consultant has done counts of existing traffic and has projected future demand accounting for expected casino traffic and other growth.

For the base scenario, we use their projections. However, there are two factors built into the projections that are questionable:

- One is a 6% inflation factor that inflates the peak hour flow rates into a still-higher flow rate representing the peak 15-minute period. While this is routinely a part of intersection capacity analysis, many planners believe that sizing roads for the busiest 15-minute period of the day is a poor tradeoff that results in overly wide and dangerous roads. In a thriving city like Boston, it is more appropriate to size roads for the average peak hour flow, even if that means there will be slightly worse congestion during the busiest 15 minute period.
- The other is a 5% increase in traffic volumes projected to materialize between 2030 and 2040. The 2030 volume estimates account for the casino and other expected development; this further 5% increase is questionable. Since 2008, there has been a trend of traffic volumes decreasing, not increasing, on roads in the inner parts of the Boston urban area. Changes in technology and auto ownership patterns are likely to make this trend even stronger. To lose parkland because of traffic projected to arise in the distant future is a tradeoff that seems hard to defend.

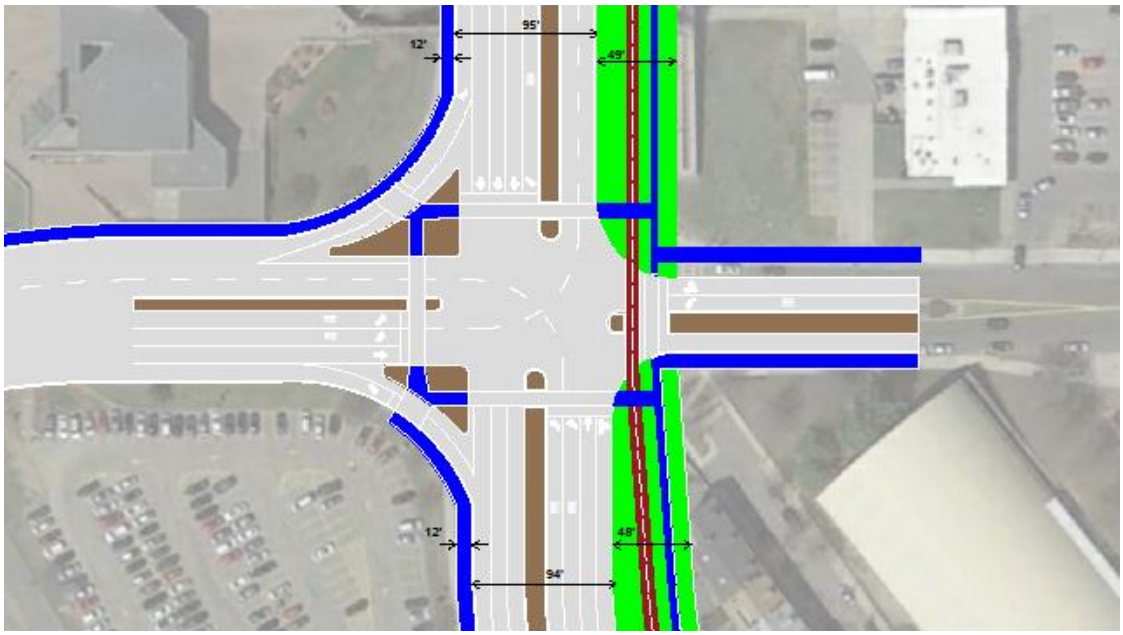
For now, we have only analyzed the base demand scenario. We hope to soon also offer an analysis of a demand scenario that omits these questionable inflation factors.

Alternative Layouts for a Surface Roadway

We have developed two surface alternatives for Rutherford Avenue at the Austin Street intersection: a 5+2-lane option and a 5+1-lane option, the difference being that the 5+2-lane option has dual left turn lanes for traffic turning left onto the Gilmore Bridge, while the 5+1-lane option has 1. The 5+2-lane

option is designed for the fully inflated volumes as projected in the City's study; the 5+1-lane option is for the uninflated volumes, as described earlier.

The 5+2-lane option is shown below. As shown in the sketch, it still leaves 48 to 49 ft on the neighborhood side for a linear park. In the two western corners, there are delta islands and slip lanes for right turns, because the very high right-turning volumes make it unsafe to allow right turns concurrently with a pedestrian crossing. However, the right turn slip lanes will not run "free;" they will be controlled by traffic signals.



5+2-Lane Surface Layout

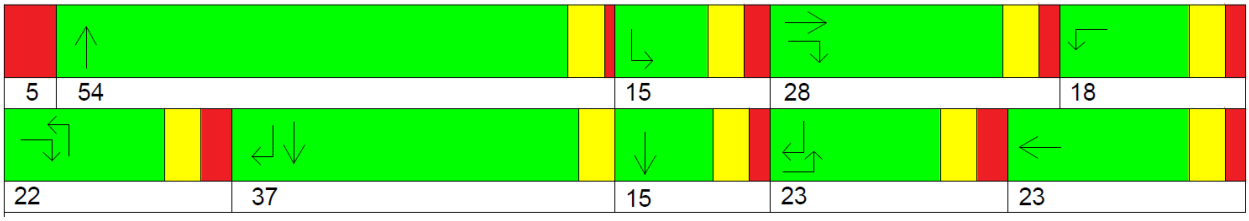
Signal Timing Design

A signal timing plan was designed using Synchro, a standard intersection analysis software. It uses a 120 s cycle (130 s in the p.m. peak) with protected-only left turns and no turn on red for the two heavy right turn movements onto and off of western leg (leading to Gilmore Bridge). It uses lead-lag phase sequencing, which improves service for the pedestrian crossings and slightly reduces the required length of some of the all-red clearance intervals. Minimum green periods are set long enough to permit pedestrian phases to be automatic.

The signal timing has multistage crossings; to complement it, the proposed layout has a 13-ft wide median for pedestrians who may have to wait in the middle. However, the pedestrian phases are coordinated so that pedestrians leaving at the right time in the cycle can cross without waiting at the median for more than a few seconds.

The traffic signals controlling the right turn slip lanes alternate twice per cycle between a right turn phase and a pedestrian phase. That means pedestrians there get two phases per cycle, which are coordinated with the other crosswalks so that most pedestrians don't have to wait on the delta islands at all.

Below is the signal timing plan for the dual-left alternative under the fully inflated demand scenario in the a.m. peak. A similar timing plan was developed for the p.m. peak.



Timing Plan for the Dual-Left Alternative with Full Projected Demand, a.m. Peak

Intersection Capacity and Pedestrian Delay Analysis

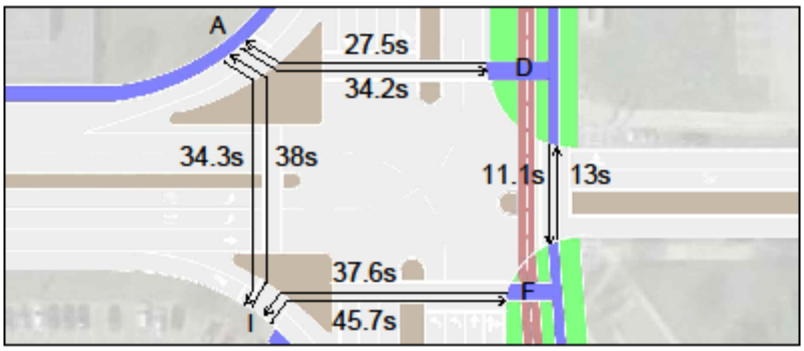
Intersection capacity analysis was done using Synchro. Pedestrian crossing delay was determined using the Northeastern University Ped/Bike Crossing Delay Calculator. Key results are given in the table below. For vehicular traffic, no approach has a volume / capacity ratio greater than 0.95; that is, there is enough capacity for every traffic movement. Average vehicular delay (48-50 s, resulting in Level of Service D) is a reasonable value for a busy urban intersection. Pedestrian delay, averaging 30 s, is also reasonable. "Average pedestrian delay" is a simple average over the 8 possible crossings (4 legs to be crossed in 2 directions each). Average delay by crossing is given in the figure that follows.

Maximum volume/capacity ratio	**a.m. peak 15 minutes**	**p.m. peak 15 minutes**
Maximum volume/capacity ratio	0.93	0.95
Average vehicular delay (s)	48	50
Level of Service	D	D
Pedestrians' average crossing delay (s)	30	*
Worst crossing delay (s)	45.7	*

Summary Performance Measures: 5+2-lane Surface Option with Fully Inflated Demand. (* = not yet analyzed)

Detailed results on pedestrian crossings are shown in the following figure. Crossing times shown are for full crossings, and include any waiting that pedestrians might have to do at an intermediate island.

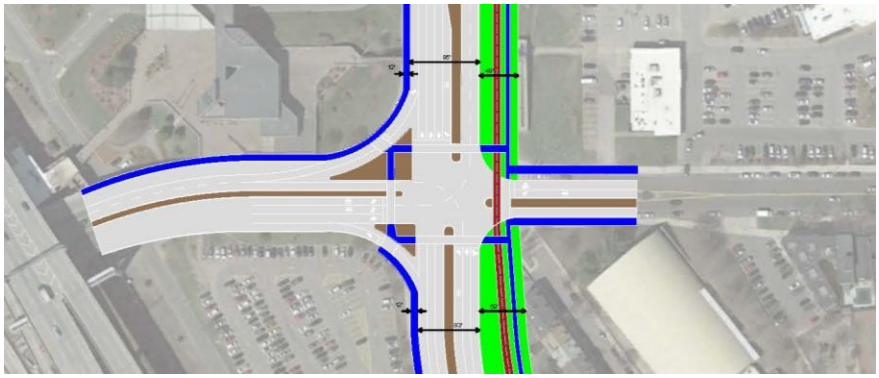
Calculating crossing delay is not a routine task in the industry. An appendix to this report shows the timing for all of the pedestrian phases in the a.m., and sample output from the program used to determine average pedestrian delay was calculated. The Synchro report showing vehicular performance measures is also provided in an appendix.



Crossing Delay for Each of the 8 Crossings, a.m. peak hour, 5+2-lane Surface Option

The 5+1-Lane Surface Option: A Smaller Footprint Intersection for Non-Inflated Demand Values

Omitting the questionable inflation factors mentioned earlier – and thus providing sufficient capacity for traffic projected in 2030 for the peak hour – it becomes possible to carry the traffic with a smaller footprint road, shown below. This option has only one left turn lane, and the linear park south of Austin Street is 11 ft wider. (North of Austin Street, the road footprint is unchanged.) In the a.m. peak, the most congested approach has a volume/capacity ratio of 0.94, and average delay is 52 s.



Smaller footprint layout that could be used if volumes with uninflated 2030 volumes

Conclusion

A surface option can, indeed, provide sufficient capacity for the projected traffic volumes while still leaving ample space for a linear park and offering reasonable service for crossing pedestrians.

This report is based on results for the a.m. peak. Because traffic volumes in the p.m. peak are less, the surface option will work then, too.

The table below compares how much space each option leaves for a linear park and green space on the neighborhood side of Rutherford Ave. The measurement is made just north of Austin Street, where the

right of way is 156 ft wide. The existing road has only a 10’ sidewalk on the neighborhood side. The underpass option leaves 21’ available on the neighborhood side; allowing 12’ for a paved shared use path, that leaves two 4.5 ft strips of grass on either side, or perhaps a 6 ft strip with trees on one side and 3-ft grass strip on the other. The 7-lane surface option leaves 49 ft for a linear park that can host separate walking and bicycling paths, rows of trees, and whatever else the neighborhood wants to put there.

	existing	underpass option	7-lane surface option
Road width, curb-to-curb	135 ft	123 ft	95 ft
Width on the neighborhood side from curb to edge of right-of-way, allowing for 12' path on Community College side	9 ft	21 ft	49 ft
green space on neighborhood side, allowing for 14' of combined sidewalk and path on the neighborhood side (ft)	0 ft	7 ft	35 ft

Right-of-Way Remaining for Green Space in Different Alternatives

The underpass option has been analyzed in a separate document, which also includes a more thorough comparison of impacts between the underpass option and the 7-lane surface option.

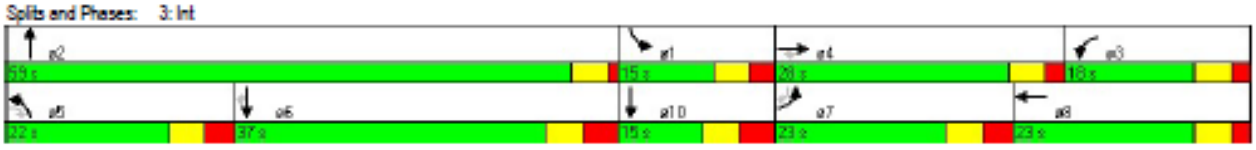
Appendix A: Synchro output for the 5+2-lane Surface Option

Intersection Capacity Analysis **a.m. peak** At grade concept
Rutherford Ave@Austin St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø10
Lane Configurations														
Volume (vph)	336	239	353	138	180	35	370	609	100	59	1801	630		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11		
Storage Length (ft)	220		0	0		0	220		0	120		0		
Storage Lanes	1		1	1		0	1		0	1		1		
Taper Length (ft)	25		25	25		25	25		25	25		25		
Lane Util. Factor	*0.97	1.00	1.00	1.00	1.00	1.00	0.97	*1.00	0.95	1.00	*1.00	1.00		
Frt			0.850		0.976			0.979				*0.920		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	3319	1801	1531	1711	1757	0	3319	3526	0	1711	5402	1657		
Flt Permitted	0.950			0.950			0.950			0.950				
Satd. Flow (perm)	3319	1801	1531	1711	1757	0	3319	3526	0	1711	5402	1657		
Right Turn on Red			No			No			No			No		
Satd. Flow (RTOR)														
Link Speed (mph)		30			30			30			30			
Link Distance (ft)		616			871			366			531			
Travel Time (s)		14.0			19.8			8.3			12.1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Adj. Flow (vph)	357	254	376	147	191	37	394	648	106	63	1916	670		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	357	254	376	147	228	0	394	754	0	63	1916	670		
Turn Type	Prot		custom	Prot			custom			Prot		custom		
Protected Phases	7	4		3	8		5	2		1	6 10		6	10
Permitted Phases			4 5				5					6 7		
Minimum Split (s)	11.0	23.5		12.0	24.0		11.0	23.0		11.0			23.0	23.0
Total Split (s)	23.0	28.0	50.0	18.0	23.0	0.0	22.0	59.0	0.0	15.0	52.0	60.0	37.0	15.0
Total Split (%)	19.2%	23.3%	41.7%	15.0%	19.2%	0.0%	18.3%	49.2%	0.0%	12.5%	43.3%	50.0%	31%	13%
Maximum Green (s)	16.5	22.5		12.5	17.5		15.5	54.5		9.0			30.0	8.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5			3.5	3.5
All-Red Time (s)	3.0	2.0		2.0	2.0		3.0	1.0		2.5			3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.5	-3.0		
Total Lost Time (s)	6.5	5.5	5.5	5.5	5.5	4.0	6.5	4.5	4.0	6.0	5.5	4.0		
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lead		Lag			Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes			Yes	
Walk Time (s)		5.0			5.0			5.0					5.0	5.0
Flash Dont Walk (s)		11.0			11.0			11.0					11.0	11.0
Pedestrian Calls (#/hr)		0			0			0					0	0
Act Effct Green (s)	16.5	22.5	39.0	12.5	17.5		15.5	54.5		9.0	46.5	52.0		
Actuated g/C Ratio	0.14	0.19	0.32	0.10	0.15		0.13	0.45		0.08	0.39	0.43		
v/c Ratio	0.78	0.75	0.76	0.83	0.89		0.92	0.47		0.49	0.92	0.93		
Control Delay	63.0	61.2	33.1	86.9	84.8		79.1	24.0		66.9	42.9	42.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Total Delay	63.0	61.2	33.1	86.9	84.8		79.1	24.0		66.9	42.9	42.4		
LOS	E	E	C	F	F		E	C		E	D	D		
Approach Delay		51.1			85.6			42.9			43.4			
Approach LOS		D			F			D			D			

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 47.8		Intersection LOS: D	
Intersection Capacity Utilization 86.5%		ICU Level of Service E	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 3: Int



p.m. peak

Intersection Capacity Analysis
Rutherford Ave@Austin St

At grade concept
PM Peak Hour

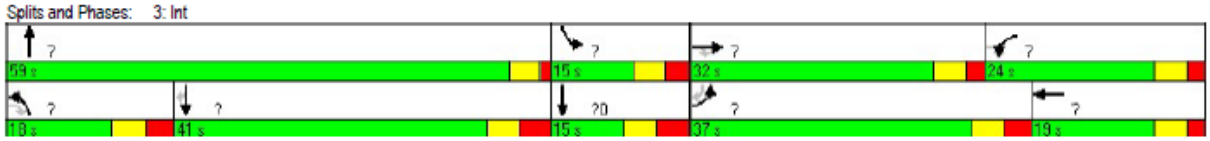
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	?	?0
Lane Configurations														
Volume (vph)	695	300	566	144	58	75	240	969	170	63	1879	490		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11		
Storage Length (ft)	220		0	0		0	220		0	120		0		
Storage Lanes	1		1	1		0	1		0	1		1		
Taper Length (ft)	25		25	25		25	25		25	25		25		
Lane Util. Factor	*0.97	1.00	1.00	1.00	1.00	1.00	0.97	*1.00	0.95	1.00	*1.00	1.00		
Frt			0.850		0.915			0.978				*0.920		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	3319	1801	1531	1711	1648	0	3319	3522	0	1711	5402	1657		
Flt Permitted	0.950			0.950			0.950			0.950				
Satd. Flow (perm)	3319	1801	1531	1711	1648	0	3319	3522	0	1711	5402	1657		
Right Turn on Red			No			No			No			No		
Satd. Flow (RTOR)														
Link Speed (mph)		30			30			30			30			
Link Distance (ft)		616			871			366			531			
Travel Time (s)		14.0			19.8			8.3			12.1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Adj. Flow (vph)	739	319	602	153	62	80	255	1031	181	67	1999	521		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	739	319	602	153	142	0	255	1212	0	67	1999	521		
Turn Type	Prot		custom	Prot			custom			Prot		custom		
Protected Phases	7	4		3	8		5	2		1	6 10		6	10
Permitted Phases			3 4 5				5					6 7		
Minimum Split (s)	11.0	23.5		12.0	24.0		11.0	23.0		11.0			23.0	23.0
Total Split (s)	37.0	32.0	74.0	24.0	19.0	0.0	18.0	59.0	0.0	15.0	56.0	78.0	41.0	15.0
Total Split (%)	28.5%	24.6%	56.9%	18.5%	14.6%	0.0%	13.8%	45.4%	0.0%	11.5%	43.1%	60.0%	32%	12%
Maximum Green (s)	30.5	26.5		18.5	13.5		11.5	54.5		9.0			34.0	8.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5			3.5	3.5
All-Red Time (s)	3.0	2.0		2.0	2.0		3.0	1.0		2.5			3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.5	-3.0		
Total Lost Time (s)	6.5	5.5	5.5	5.5	5.5	4.0	6.5	4.5	4.0	6.0	5.5	4.0		
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lead		Lag			Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes			Yes	
Walk Time (s)		5.0			5.0			5.0					5.0	5.0
Flash Dont Walk (s)		11.0			11.0			11.0					11.0	11.0
Pedestrian Calls (#/hr)		0			0			0					0	0
Act Effct Green (s)	30.5	26.5	68.5	18.5	13.5		11.5	54.5		9.0	50.5	70.0		
Actuated g/C Ratio	0.23	0.20	0.53	0.14	0.10		0.09	0.42		0.07	0.39	0.54		
v/c Ratio	0.95	0.87	0.75	0.63	0.83		0.87	0.82		0.57	0.95	0.58		
Control Delay	71.0	73.9	31.1	65.0	92.7		86.0	39.1		77.6	50.1	14.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Total Delay	71.0	73.9	31.1	65.0	92.7		86.0	39.1		77.6	50.1	14.6		
LOS	E	E	C	E	F		F	D		E	D	B		
Approach Delay		57.1			78.3			47.3			43.6			
Approach LOS		E			E			D			D			

Intersection Summary

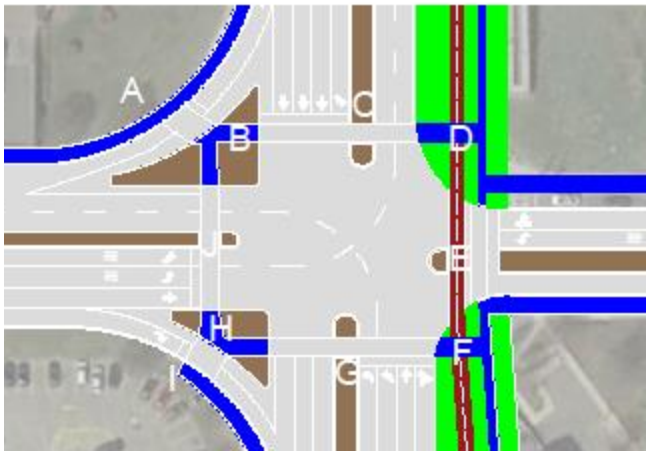
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 49.9		Intersection LOS: D	
Intersection Capacity Utilization 93.1%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 3: Int

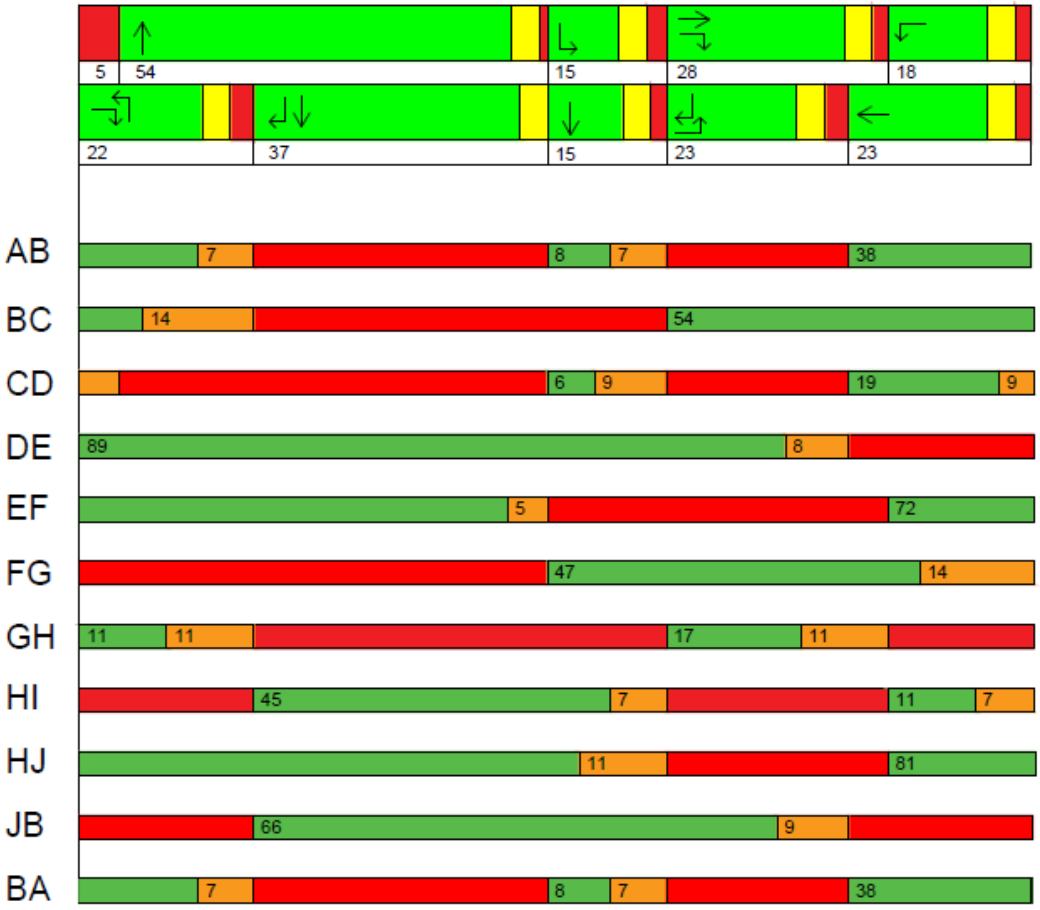


Appendix B: Pedestrian Phase Timing and Example Pedestrian Delay Calculation (a.m. peak)

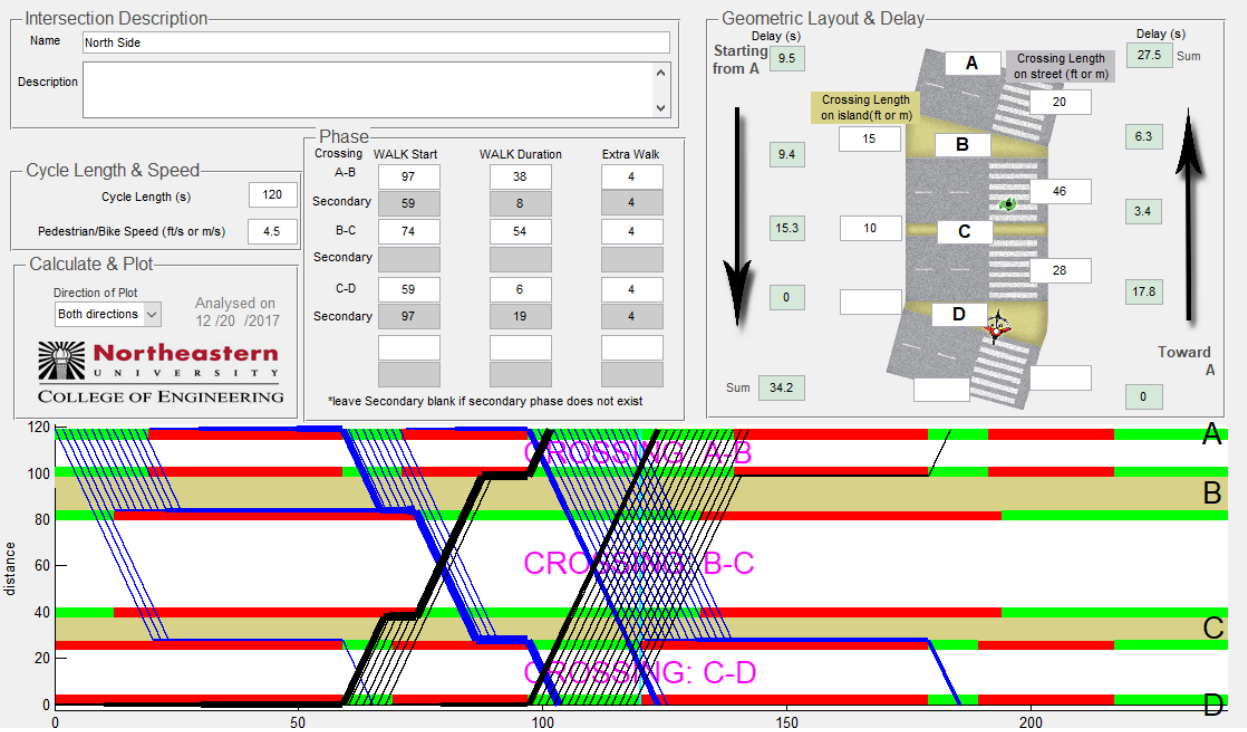


Above: Intersection layout with corners and islands labeled A, B, …, J

Below: Timing plan for each vehicular movement and each crosswalk



Average delay for all the crossings is shown in the body of the report. Here is an example output from the program used to determine pedestrian delay, applied to crossing the north leg of the intersection.



Report from the Northeastern University Ped/Bike Crossing Delay Calculator for the north leg crossing. When crossing from A-D, average delay is 34.2 s; crossing from D-A, average delay is 27.5 s. Blue lines indicate pedestrians walking from A toward D; black lines, pedestrians walking from D toward A.

The Underpass Option at Austin Street: Impacts and Comparison Against the 7-Lane Surface Option

An analysis of the City's proposed "Underpass Option" for the intersection of Rutherford Ave and Austin Street.

Peter Furth

Amelia (Yanran) Chen

Northeastern University

January 29, 2018

City officials have stressed that the underpass option is bound to be more pedestrian-friendly than a surface option because it removes so much traffic from the intersection. And it's natural to think that an underpass option must be better for cars. And some people worry that if there isn't an underpass, the neighborhood might be run over with traffic trying to avoid the congestion on Rutherford Ave.

However, an analysis of the underpass option reveals exactly the opposite:

- Three of its four pedestrian crossings are unsafe – that is, they involve conflicts with right turning traffic with traffic volumes nearly triple the limit allowed by MassDOT.
- While cars that can use the underpass will fly through unimpeded, the surface streets will face delays of 2 to 2.5 minutes, with queues on the Rutherford Ave surface roads growing to almost 500 ft in both directions.
- Far from protecting the neighborhood from cut-through traffic, the underpass option will actually create serious congestion that gives traffic heading to the Gilmore Bridge an incentive to cut through the neighborhood.

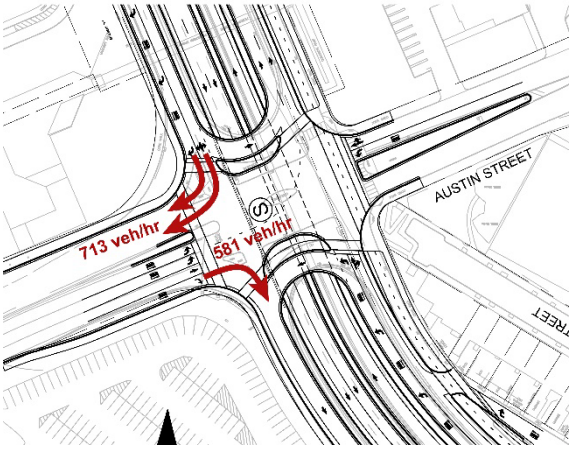
The layout for the City's underpass option can be found at the project website. The City provided us with their proposed signal timing plan and capacity / delay analysis made using Synchro.

For Pedestrians: Crossings with Unacceptable Right-Turn Conflicts

The layout of the underpass option (see figure below) looks pedestrian-friendly – there are crosswalks across all four legs of the intersection, there are no delta islands with slip lanes for right turning traffic, and the Austin Street crosswalks are drawn in a way that shows that pedestrians there will have simple, one-stage crossings.

But when one considers the interaction of traffic and crossing pedestrians, it turns out that three of the crossings are unsafe because they involve conflicts with unacceptably large volumes of right-turning traffic.

Consider first crossing Austin Street on the Gilmore Bridge side. The way the intersection is laid out, the only time its WALK interval could run is concurrently with the southbound traffic on Rutherford Ave. Concurrent pedestrian phases are normal and acceptable when the right-turning volume is small; MassDOT allows concurrent pedestrian phases when the right turning volume is up to 250 vehicles per hour. But the right-turning volume here is more than 700 vehicles per hour! And what's more, cars will be allowed to turn right from two lanes! Clearly, it would not be safe to have pedestrians cross in the face of this massive conflict.



Heavy right-turn flows that conflict with pedestrians in the Underpass Option

The southern crossing of the southbound surface road has the same kind of conflict. It will be concurrent with the eastbound traffic leaving the Gilmore Bridge, presenting a conflict with 310 vehicles per hour turning right in the a.m. peak, and 550 turning right in the p.m. peak, more than double the MassDOT limits for conflicting right turns.

One might ask, Couldn't there be an all-pedestrian phase? In principle, yes; but because the intersection in the underpass option is overcapacity already, adding an all-ped phase would result in such an enormous capacity shortfall that the intersection would be jammed in all four directions.

For the northern crossing of the southbound surface road, the conflict that makes the crossing unsafe is with right turns on red. Right turn on red can be a small, acceptable conflict when the right turn volume is low; but in this case, it's 710 vehicles per hour, turning from two lanes!

Again, one could ask, Couldn't they prohibit right turn on red? Yes, in principle – but, again, that would lead to unacceptable traffic performance because in the underpass option, the intersection design relies on right-turn-on-red to relieve congestion.

The table below compares average pedestrian delay in the underpass option versus the 7-lane surface option (a.m. peak period). Results are for a full crossing, not a single stage.

Average pedestrian delay for the underpass and 7-lane surface options (Rutherford Ave. at Austin Street, a.m. peak hour)

	underpass option	7-lane surface option
East leg, heading north	45 s	13 s
East leg, heading south	45 s	11 s
North leg, heading west	Not safe	28 s
North leg, heading east	Not safe	34 s
South leg, heading west	Not safe	38 s
South leg, heading east	Not safe	46 s
West leg, heading north	Not safe	38 s
West leg, heading south	Not safe	34 s

Other Ways the Underpass Option Fails to Serve Pedestrians

Consider other dimensions of pedestrian-friendliness – how does the underpass option measure up, compared to the 7-lane surface option?

1. Does the underpass option leave as much space for pedestrians walking in the linear park? Not at all. It leaves only 21 ft for a linear park, most which will be paved with a shared use path. Bikes and pedestrians will have to share a 12-ft path, instead of each having their own path, which is preferred. At the Austin Street intersection, pedestrians waiting at the light to cross Rutherford Ave will crowd the path, blocking people on foot or on bike who are trying to get by.

In contrast, the 7-lane surface option leaves 49 ft for a linear park – that's enough space for an 11 ft path for bikes, a 7 ft path for pedestrians, and 31 ft of green space separating them from the road and each other.

2. Does the underpass option mean a shorter signal cycle? Remarkably, while the underpass option has 40% less traffic to process through the intersection, it needs a longer cycle – 130 seconds, versus 120 seconds for the 7-lane surface option. So with an underpass, pedestrians (and motorists, too!) have to wait longer for the next cycle.

3. At least the underpass option doesn't have delta islands and slip lanes on the western corners. In drawings presented to the public, the underpass option indeed looks pedestrian-friendly because, unlike the surface option, it lacks delta islands with slip lanes for right-turning traffic in the two western corners of the intersection. But this is deceptive. The absence of those delta islands is exactly what forces the pedestrian phases to have unacceptable conflicts with heavy right turning traffic. As the underpass option is refined, expect those delta islands and slip lanes to be added – it's the only way to resolve the conflict between heavy right turns and pedestrians.

4. The 7-lane surface option has multistage crossings. Doesn't the underpass option avoid multistage crossings? No. The underpass layout presented to the public has 2-stage crossings across the north and south legs. And once they add the delta islands that are needed in the western corners, there will be 3-stage crossings. Across the east leg only, the underpass option offers a true single stage crossing, but

then so can the surface option – but in the surface option, pedestrian delay will be less because the signal cycle will be shorter and the WALK interval will be longer.

For Cars: Insufficient Traffic Capacity and Severe Congestion

For cars that can use the underpass, the underpass option offers an obvious advantage.

However, the majority of traffic will still have to pass through the intersection. Three traffic movements, affecting more than 1000 vehicles per hour, won't have enough capacity in the a.m. peak hour to keep up with demand (see table below), resulting in long delays and long queues. On Rutherford Ave's two surface roads, average delay will be more than 2.5 minutes and queues extend back nearly 500 ft (on average). Austin Street, leaving the neighborhood, will also be overcapacity, with 2 minute delays and queues longer than 200 ft. These long queues and delays will give drivers an incentive to find alternative routes, cutting through the neighborhood instead of using Rutherford Ave and Austin Street.

Traffic movements with capacity shortfalls in the underpass option (a.m. peak hour)

	a.m. peak hour volume	capacity shortfall	average delay	50th percentile queue length
Northbound surface road, left turn	370	18%	152 s	475 ft
Southbound surface road, thru & left	427	19%	152 s	472 ft
Westbound thru	209	5%	122 s	229 ft
Total	**1006**			

By comparison, in the 7-lane surface option, none of the traffic movements are overcapacity; each has at least 7% slack capacity.

The table below summarizes average vehicular delay for the two options in the morning peak. Averaging all vehicles together, the two options offer a similar level of service: 40 s of delay for one option, 48 s of delay for the other. In the surface option, average delay to thru traffic on Rutherford Ave. is not large – only about 40 s – and the most congested movement has an average delay of less than 90 s.

The underpass option, however, is a tale of two extremes, with zero delay for the two traffic movements that use the underpass and large delays for other traffic movements.

Vehicular delay for the two options

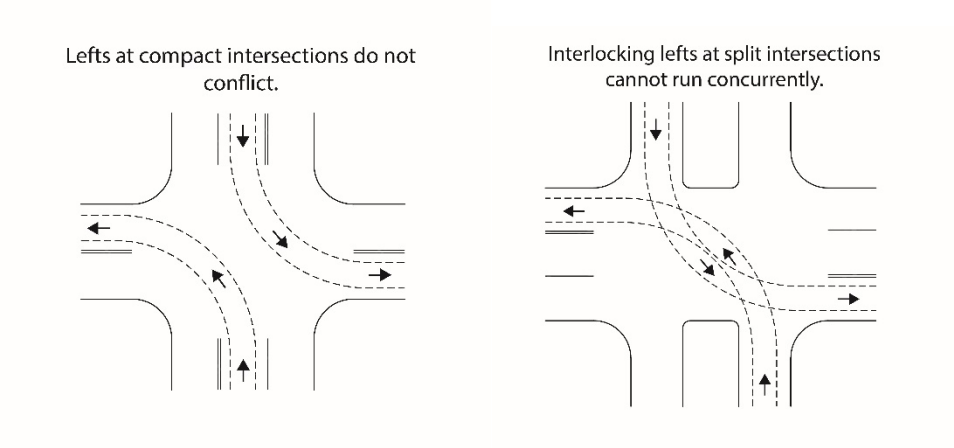
	underpass option	7-lane surface option
Thru traffic on Rutherford Ave		
- Southbound thru average delay (s)	0	43
- Northbound thru average delay (s)	0	24
All other movements		
- Average delay (s)	74	59
- Average delay for most congested movement (s)	152	87
Average delay, all traffic (s)	**40**	**48**

The Inherent Inefficiency of an Underpass Layout

The underpass option removes 40 percent of the traffic from the intersection, yet it performs poorly compared to a surface option. How can this be? It turns out that there are three aspects of an underpass that makes it an inherently inefficient solution.

First, ***the underpass consumes an inordinate amount of space, leaving insufficient space for the surface roads*****.** One might think that, because the City's underpass option cuts the number of travel lanes from 6 (existing) to 3 (proposed, with 2 lanes southbound and 1 lane northbound), the space consumed by the underpass will shrink a lot. But no – the overall space consumed by the underpass shrinks by only 10 ft, because an underpass – with unavoidably high speed traffic – requires wide shoulders, as well as space for structural walls. As a result, the surface roads are limited to 2 lanes each, which isn't enough to serve the heavy traffic trying to turn onto the Gilmore Bridge.

Second, ***an underpass creates a split intersection.*** The northbound and southbound surface roads will be separated from one another by about 60 ft. As a result, left turns cannot run concurrently, because they interlock, as illustrated in the figure below. The traffic signal plan is therefore forced to follow an arrangement called "split phasing," in which each of the four legs has a turn in sequence. Split phasing is both less flexible and less efficient than the normal phase sequence in which opposite directions (e.g., northbound and southbound) run concurrently. One can observe this inefficiency at other intersections with underpasses, such as Mass Ave @ Commonwealth Ave and Mass Ave @ Huntington Ave in Boston, where traffic on the surface roads is often backed up.



Split intersections result in interlocking lefts, which prevent left turns from running concurrently

Third, ***the underpass removes only through traffic, leaving all the turning traffic, which intersections can't process efficiently.*** Traffic signals can process thru traffic efficiently by spreading it over multiple lanes, running opposite directions concurrently, and running it concurrently with pedestrians. Turning traffic, in contrast, can be processed only at low capacity, can't run concurrently with most pedestrian crossings, and (due to the interlocking mentioned earlier) cannot run concurrently with each other.

It's understandable to expect that removing 40% of an intersection's traffic would make it more efficient. However, because the only traffic removed is through traffic, and because the remaining traffic has to be served with a split intersection and without the space it needs for turning lanes, the underpass option actually results in longer delays and longer queues than the surface option.

A Comparison of Impacts

At first glance, the prospect of making a lot of traffic "disappear" by putting it in an underpass seems to offer the promise of better service for everybody. However, it turns out that only underpass users will be better off; everybody else will be worse off, including both pedestrians, motorists who can't use the underpass, and local residents. Below is a list of important impacts, comparing the underpass option against the 7-lane surface option.

1. ***Space for a linear park.*** The surface option leaves 49 ft for a linear park – enough for a walking path, a bicycle path, and 30 feet of green space separating them from traffic and from each other. The underpass option leaves only enough only for a path that pedestrians and bikes have to share, with only a narrow strip of green space separating them from the road.
2. ***Traffic delay.*** Averaged over all vehicles, including those in the underpass, there is only an 8 s difference in average delay between the two alternatives. Of course, the underpass option offers an obvious advantage for long-distance through traffic using Rutherford Ave.; however, this advantage isn't large, because in the surface option, delay to Rutherford's through traffic is only about 40 s. Meanwhile, for traffic that has can't use the underpass, the underpass option has serious capacity shortfalls that affect more than 1000 cars per hour and that result in delays greater than 2.5 minutes and queues almost 500 ft long on Rutherford Ave.'s two surface roads. The surface option has no capacity shortfalls, no long queues, and no long delays.

3. ***Protecting the neighborhood from cut-through traffic by limiting traffic congestion.*** The underpass option results in serious congestion for traffic turning onto the Gilmore Bridge, with backups of almost 500 ft predicted on both surface roads. That will give traffic an incentive to divert to neighborhood streets. In the surface option, there is no such congestion. The delay to through traffic on Rutherford Ave is only 40 s, creating little incentive for people to divert to neighborhood streets.
4. ***Access into and out of the neighborhood.*** With the underpass option, turns into the neighborhood and the traffic movement leaving the neighborhood on Austin Street are overcapacity, with long queues and long delays, while in the 7-lane surface option, all traffic movements into and out of the neighborhood have sufficient capacity. And the surface option creates additional intersections where neighborhood traffic can turn left onto Rutherford Ave (Lynde Street and Baldwin Street), easing the pressure on Austin Street and eliminating the need for U-turns at Austin Street.
5. ***Pedestrian safety and convenience.*** With the underpass option, three out of the four legs of the intersection have crossings with unacceptably high right-turn conflicts, making them unsafe. At the same time, the long signal cycle results in long pedestrian delays. With the surface option, all pedestrian crossings are safe from heavy turn conflicts and pedestrian delays are reasonable. And for people walking along Rutherford Ave., the surface option gives them a path separate from bicycles and far removed from the streets, while the underpass option puts them in a path shared with bicycles and far closer to the street.
6. ***Flood control.*** The underpass option has far more impervious space than the surface option, increasing runoff that can lead to neighborhood flooding. During storm surges and heavy thunderstorms, the underpass is vulnerable to flooding.
7. ***Noise and air pollution.*** With the surface option, the neighborhood is buffered from the street by a wide linear park, with ample space for trees that help capture particulates. With the underpass option, that buffer is only 21 ft wide, with limited green space for vegetation.
8. ***Flexibility to adapt to future needs.*** The future is going to bring vast changes to transportation that are hard to predict. With a surface option, it would easy and relatively inexpensive to add an additional lane if traffic grows more than expected, and would likewise be easy to shrink the road if traffic grows less than expected, or if technology (connected vehicles, automated vehicles) makes traffic flow so much more efficient that fewer lanes needed. With an underpass option, the road layout is locked in – there is no room for further road expansion, nor would not be possible to shrink the road without getting rid of the underpass.
9. ***Cost.*** The underpass option costs a lot more than a surface option. In any comparison of impacts, one should consider the benefits that could be obtained if MassDOT could save millions of dollars on this project and invest them elsewhere.

The table below summarizes this impact comparison.

Another interesting comparison to make is against the existing situation. The Commonwealth and City are planning to spend around $150 million for this project – what will they get for it? The underpass option essentially changes nothing, except for adding about 10 ft of green space to the neighborhood side of Rutherford Ave and converting the sidewalk into a shared use path. And it fails to provide increased capacity for traffic turning onto the Gilmore Bridge.

By contrast, the surface option creates new value – a linear park with benefits to walking, bicycling, recreation, flood control, and a buffer against noise and air pollution in the neighborhood. The flexible layout of a surface option allows for expanded capacity for traffic turning onto the Gilmore Bridge. The more compact intersection layout will serve pedestrians better, and the more efficient traffic flow will ease access to and from the neighborhood and better protect it from cut-through traffic.

Alternatives comparison indicating the more favorable alternative by impact

	underpass option	7-lane surface option
Parkland		√
Delay to long distance, north-south commuters	√	
Delay to all other traffic		√
Protect neighborhood from cut-through traffic by preventing congestion		√
Neighborhood access		√
Pedestrian safety and convenience		√
Flood control and resilience		√
Noise and air pollution		√
Flexibility		√
Cost		√

In transportation planning, rarely is a comparison of alternatives this lopsided. The underpass scores better on only one impact: less delay to some long-distance commuters, and the amount – 40 seconds – is almost trivial. The 7-lane surface option is superior on all the other impacts, costing less and providing flexibility for the future, while giving the neighborhood and the Boston region something of lasting value.

Attachment D

www.RCIC-Charlestown.org

October 19, 2017

Stephanie Pollack, MassDOT Secretary and CEO
Members of the Metropolitan Planning Organization
Suite 2150
10 Park Plaza
Boston, MA 02116

Secretary Pollack and Members of the Metropolitan Planning Organization:

We are writing to express our concerns that in planning for Rutherford Avenue/Sullivan Square (RA/SS), the City of Boston has not used state-of-the art data and modeling tools, has not explored a surface option solution, and has prematurely moved toward selecting a preferred option without adequate financial analysis. On May 18, 2017 BTD presented a "preferred" design that effectively rebuilds the current underpasses at Sullivan Square (SS) and Austin Street, and continues to place regional traffic flow above our local quality of life. In addition, the selected option is inconsistent with the City's planning goals as stated in the GoBoston 2030 Vision and Action Plan, Imagine Boston 2030, and the Citywide Resilience Strategy, which all recognize the importance of and seek to implement multiple modes of travel. Hundreds of Charlestown residents have made clear their preference for open space along a narrowed Rutherford Avenue, and for the 2013 MAPC-funded Design Study concept for Sullivan Square.

The Transportation Improvement Program (TIP) for the region requires difficult decisions regarding included projects, given current funding constraints. It is imperative, therefore, that projects included be designed efficiently and cost-effectively, and consider capacity management/mobility, clean air/clean communities, transportation equity, and economic vitality. (FY2018-FY2022 Final TIP, pg. ES-5)

In addition to the attached Lower Mystic Regional Working Group (LMRWG) letter sent out recently, which we request you consider, we note several factors which fail to meet MPO goals:

- BTD's data indicates most intersections at Sullivan Square will be at LOS A during morning and afternoon peak traffic in its Underpass Option design, a roadway capacity inconsistent with MPO goal of capacity management, and which violates clean air/clean communities goals by encouraging an increase in driver use of the corridor.
- BTD failed to use contemporary traffic assumptions exhibited in studies of McGrath Boulevard, thus effectively estimating future demand too conservatively.
- BTD did not fully explore a Surface Option design which could provide reasonable levels of service in what is a dense urban setting. The cost of such an option remains undetermined. We believe the decision to proceed with an Underpass Option is premature and presents a substantial cost risk to the TIP.

Prior to any funding decision for the Rutherford Avenue/Sullivan Square (RA/SS) project, we urge MassDOT and the MPO to request the City of Boston to carry out further analysis including:

- Use of VSSIM software to model the project, incorporating the same demand assumptions used in the nearby McGrath Boulevard project (e.g., Peak Hour Factor (PHF) of 0.98), and by incorporating traffic demand management in the region as recommended by the LMRWG; these data should be accompanied by calculations of disappearing traffic, and by consideration of induced demand generated by the design options.
- Creating a Surface Option (S/O) concept design and cost estimate, offering reasonable levels of service for a dense urban setting like that at Sullivan Square/Austin Street, and by comparing the S/O cost to the cost of an Underpass Option.
- Producing a Traffic Impact and Analysis Study (TIAS), making public its assumptions for mode split and annual traffic growth.
- Generating and publishing calculations of pedestrian delay at each intersection.

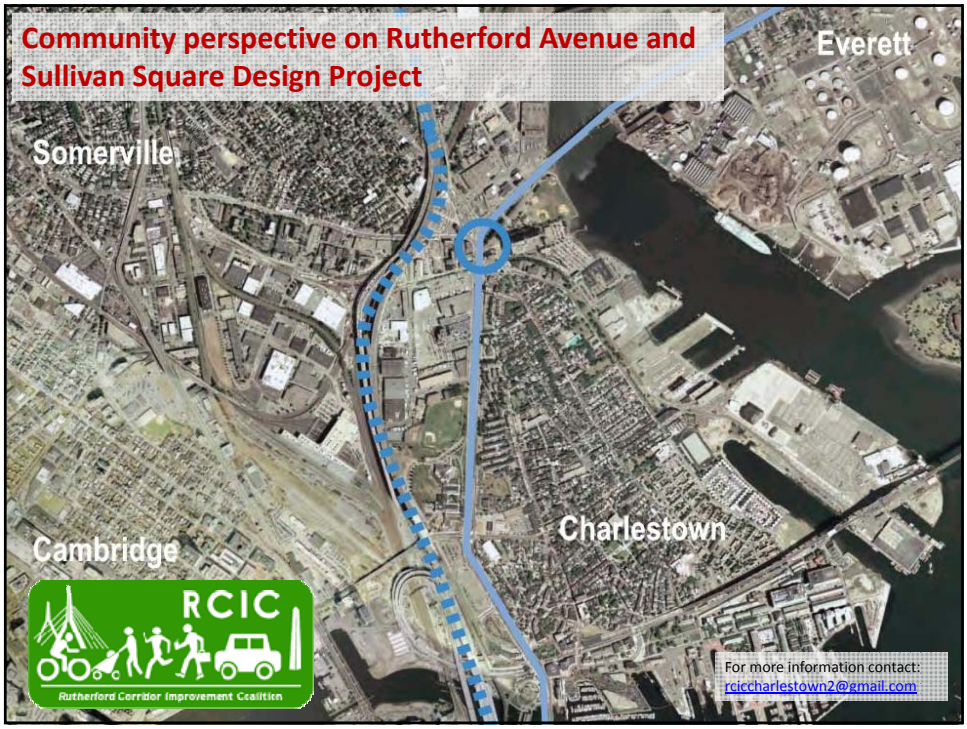
Finally, a surface design allows for significant development along Rutherford Avenue, and in a redesigned Sullivan Square. The current underpass design eliminates much of that potential. We urge MassDOT to require the City to calculate future revenue lost when comparing the Surface and Underpass Options (as is done in the State's I-Cubed program) and not just construction costs.; There are significant financial implications for loss of revenue if several of the RA/SS developable parcels are lost, revenues that cannot be replaced by highly unpredictable air right development over a relocated underpass.

In conclusion, Charlestown's long history of community engagement has contributed to superior designs which enhance our quality of life, and have lead to extraordinary redevelopment in the town. The suppressed Mystic Tobin Bridge connections and City Square Park are but two examples of this community engagement. We urge the MPO again to ask the City for further comprehensive analysis as we have described. Thank you very much for your attention and time.

Ivey St John for

the Rutherford Corridor Improvement Coalition (RCIC)

RCIC is a coalition of advocates supporting the rebuilding Rutherford Avenue & Sullivan Square to reflect goals and objectives of Imagine Boston 2030 and Go Boston 2030. We seek to return these streets to urban residential & commercial use, reflecting conditions in the other parts of Charlestown.


Community perspective on Rutherford Avenue and Sullivan Square Design Project
Everett
Somerville
Cambridge
Charlestown
RCIC
Rutherford Corridor Improvement Coalition
For more information contact:
rciccharlestown2@gmail.com


Rutherford Avenue and Sullivan Square today…
2

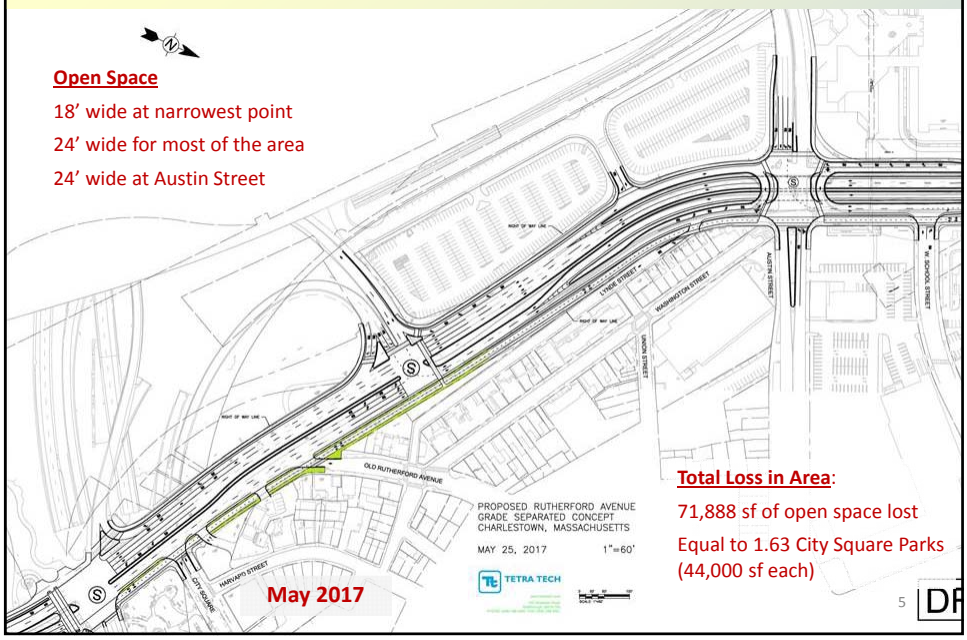
BTD's stated project goals

1. Create balanced streets
2. Enhance community connections
3. Improve pedestrian and bicycle environment
4. Create flexible framework for desirable redevelopment
5. Create attractive public open spaces
6. Establish community gateways
7. Ensure public/private coordination

3

City Square to Austin Street – Surface Option

City Square to Austin Street – Underpass Option



Open Space

18' wide at narrowest point

24' wide for most of the area

24' wide at Austin Street

Total Loss in Area:

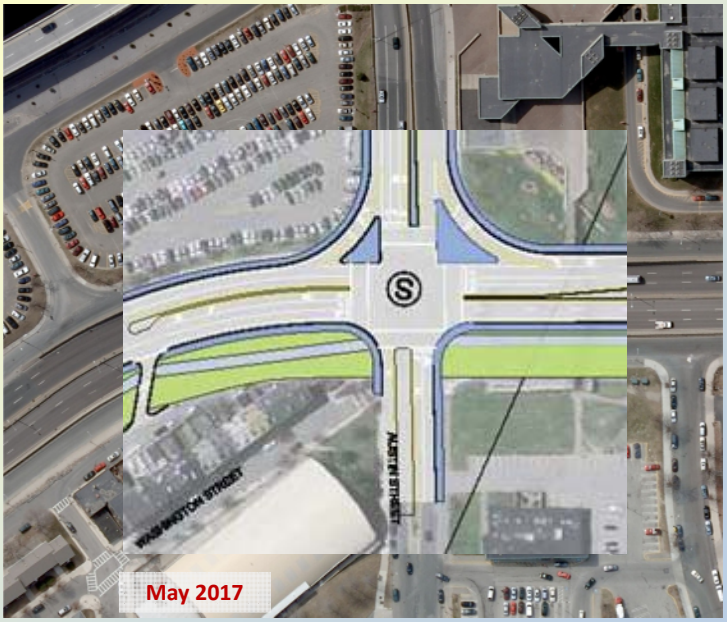
71,888 sf of open space lost

Equal to 1.63 City Square Parks (44,000 sf each)

May 2017

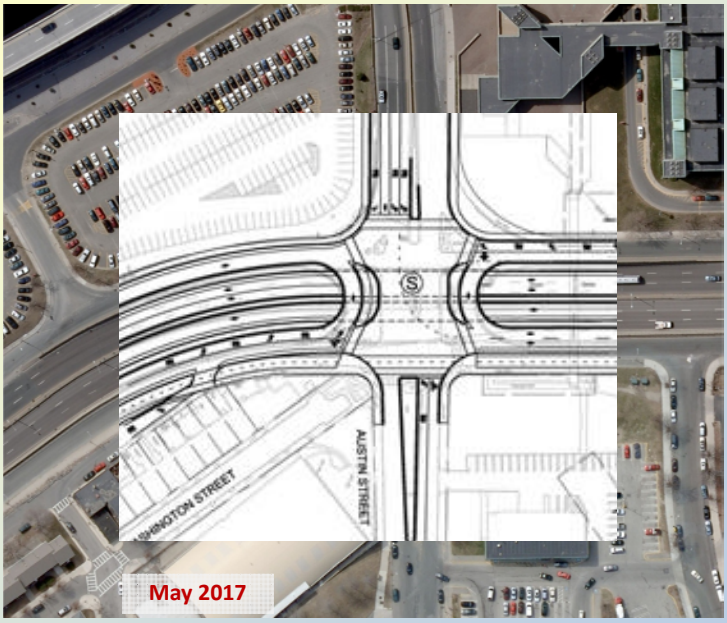
5

Austin Street – Surface Option



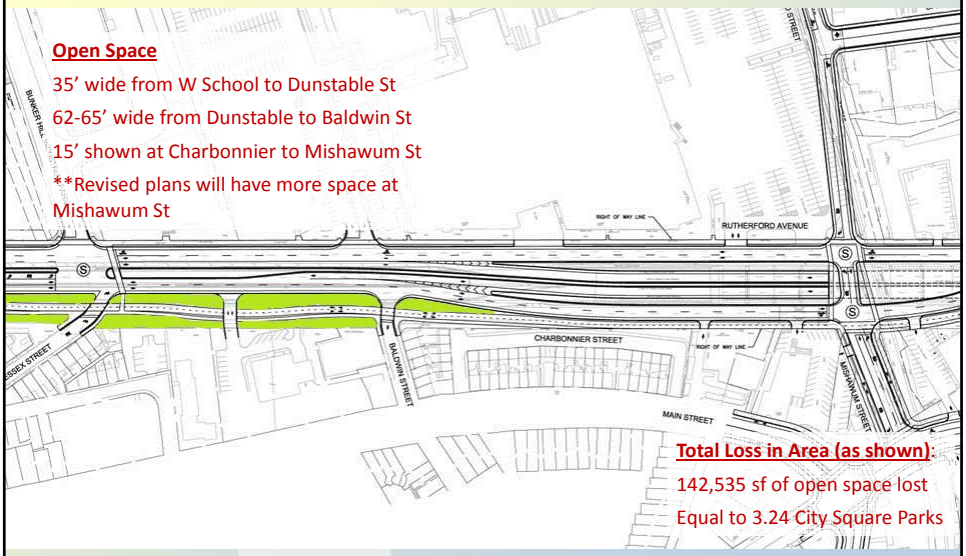
May 2017

Austin Street – Underpass Option



Essex to Mishawum Street – Surface Option

Essex to Mishawum Street – Underpass Option



Open Space

35’ wide from W School to Dunstable St

62-65’ wide from Dunstable to Baldwin St

15’ shown at Charbonnier to Mishawum St

**Revised plans will have more space at Mishawum St

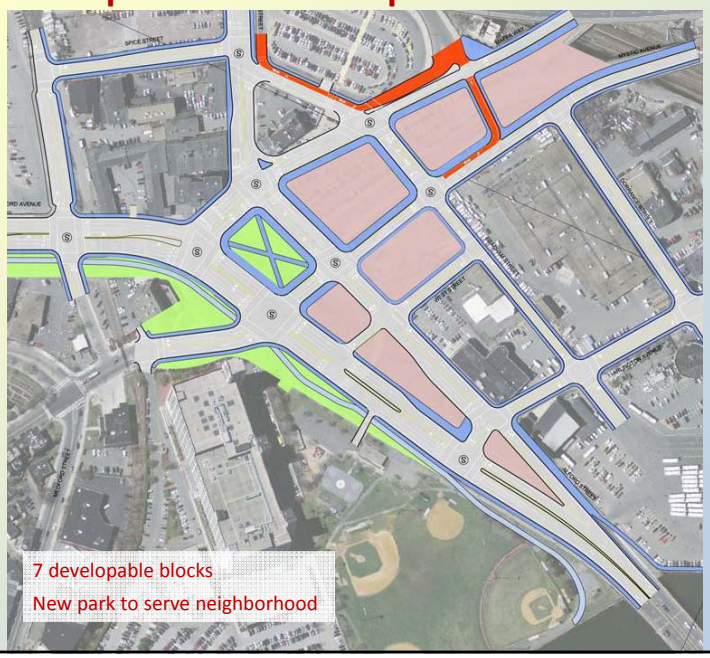
Total Loss in Area (as shown):

142,535 sf of open space lost

Equal to 3.24 City Square Parks

May 2017

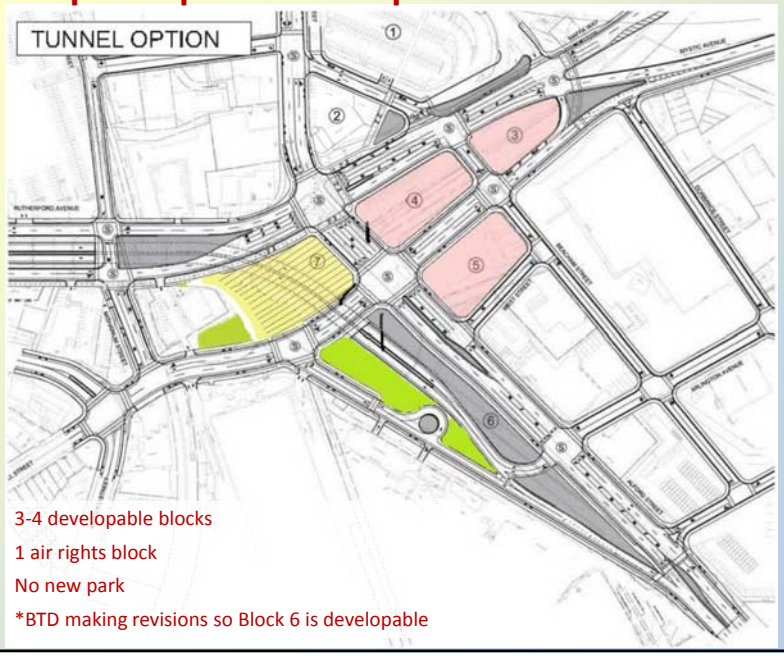
Sullivan Square – Surface Option



7 developable blocks

New park to serve neighborhood

Underpass Option Developable Sites



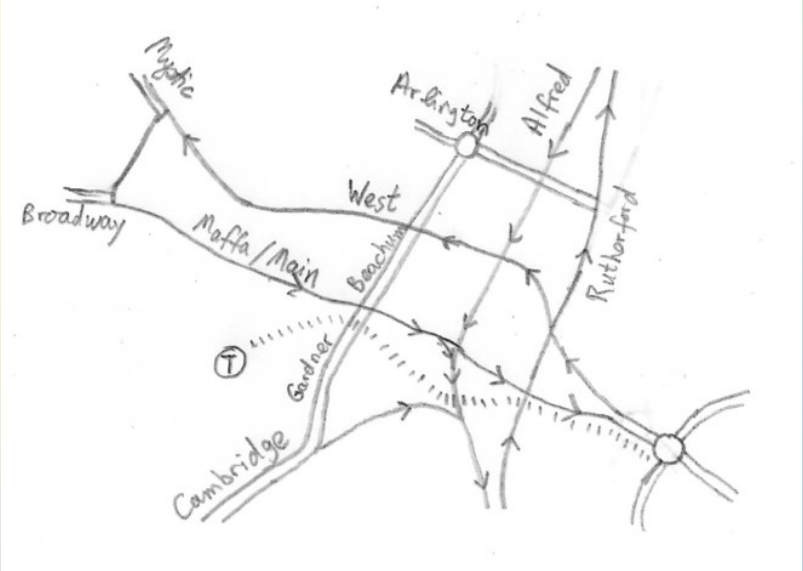
3-4 developable blocks

1 air rights block

No new park

*BTD making revisions so Block 6 is developable

One-way Grid Concept (RCIC proposal)



We petitioners believe that:

- The City of Boston has not completed its alternatives analysis. BTD has not:
  - Developed a surface alternative that works
  - Prepared cost estimates for comparison
  - Used state-of-the-art modeling software
  - Used same methodology as McGrath Blvd project
- Funding cannot proceed without full alternatives analysis

13

We further believe that:

- A surface solution:
  - Is feasible and will prove less costly in terms of construction and maintenance
  - Will facilitate development along the corridor, financially benefitting the Commonwealth
  - Is more environmentally resilient
- Community tradeoffs are too substantial for modest vehicular time savings in 2040
- The community should be provided with equal information for both alternatives, and be given time to develop a consensus solution

14

TODAY

TOMORROW?

Attachment F

Rutherford Corridor Improvement Coalition

www.RCIC-Charlestown.org

Sandy Johnston
UPWP Manager,
MPO Staff
Suite 2150
10 Park Plaza
Boston, MA 02116

REVISED 6/15/17

Dear Ms. Johnston:

As you know, transportation numbers can often be used to justify bad decisions and the role that CTPS plays in providing forecasts that are unbiased and data-driven, is critically important. That also means that the methodology that the agency uses is must be state-of-the art - if not better – so that the billions invested in transportation in the Boston metro-area are utilized for their highest benefit to transit riders, pedestrian, cyclists, and vehicle drivers.

We continue to struggle with the City of Boston's plans for Rutherford Avenue/Sullivan Square (RA/SS). The City has announced in May that its preferred design is to effectively rebuild the current underpasses at Sullivan Square (SS) and Austin Street, which is unfortunate, as it continues to place regional traffic above local needs. Hundreds of residents have made it clear that we seek to have a 50+-foot corridor of open space created along the neighborhood by narrowing Rutherford Avenue and moving the traffic away from century old residences toward the industrial/mixed-use parcels abutting I-93.

This green corridor would provide a transitional opportunity for multi-use paths and greater connection to the Sullivan Square and Community College MBTA stations. Data has shown that people are willing to walk farther to transit if they do so in a pleasant environment and we know that improved connectivity in Charlestown will improve pedestrian, cyclists and local transit use. In addition, the surface option redesign would provide many acres of developable land that can be used for transit-oriented development, further increasing transit ridership. The City's preferred design is a 1960's answer that not only anticipates that new development will rely on single car occupancy travel, it compels a local street to serve travelers who should remain on I-93 or the Tobin Bridge, at great cost to resident health and safety.

The RCIC urges the MPO to:

- Elevate pedestrians, cyclists, and transit riders in CTPS analyses so they receive equal treatment to vehicles; i.e., measure people-trips in lieu of vehicle trips. This would be consistent with the new USDOT congestion rule that counts persons rather than vehicles. Indeed, transportation analysis as a whole should conform to the new USDOT congestion rule requirements. We recommend that all projects at less than 25% design be re-analyzed using the new congestion rules and specifically request that CTPS reanalyze the surface and underpass options for Rutherford Avenue/Sullivan Square project using this framework.

- Incorporate strict transportation demand management requirements on analyses of all new developments, similar to those currently imposed on the Wynn Harbor Casino. In addition, the TDM requirements should require flex time and work at home regulations, and emphasize multi-passenger service to water and rapid transit points.
- Incorporate more frequent Orange Line service analysis (e.g. three minute headways).
- Develop a strong methodology to evaluate "disappearing traffic" as well as "induced demand". As we have seen, the gridlock that was anticipated in advance of construction on key bridges in the area, like the Longfellow Bridge and Mass Ave Bridge, never materialized. One of the Boston area's greatest assets is that travelers have choices on what mode they choose. All efforts should to encourage transit, cycling, and walking over vehicle travel.

Such a methodology used on each and every new development of more than four units will force collaborations and partnerships among developers, and will provide a substantial reduction in vehicle trips, making the City of Boston's preferred design immediately obsolete and inappropriate.

We ask that this request be filed with each transportation study, which considers vehicle trip generation and traffic studies.

In summary, Charlestown has a long history of making our transportation projects better for the community. That history is celebrated in the moving inscriptions at City Square which compare what might have been to what we have today, which works for the community. We ask that respect be paid to this tradition of serving the community while meeting transportation needs.

Thank you very much,

Monica Lamboy Elizabeth Levin Nathan Blanchet Robert Pelychaty

David Yashar Rachel Brown MB Flanders Ivey St John

Rutherford Corridor Improvement Coalition (RCIC) Working Group

RCIC is a coalition of advocates who support rebuilding Rutherford Avenue and Sullivan Square in a design reflecting the goals and objective of Boston 2030 and Go Boston 2030. We seek to return these streets to urban residential and commercial use in keeping with other parts of Charlestown.

Attachment G

Rutherford Corridor Improvement Coalition
www.RCIC-Charlestown.org

October 2, 2017

Lower Mystic Regional Working Group
c/o Massachusetts Department of Transportation
10 Park Plaza, Room 4160
Boston, MA 02116

Re: Impact of BTD's Rutherford Avenue / Sullivan Square Redesign on Regional Traffic

Dear Members:

The Lower Mystic Regional Working Group (LMRWG) is commended for identifying alternatives designed to enhance and increase use of transit services, expand walking and bicycling opportunities, and establish transportation demand management (TDM) programs as mechanisms to reduce traffic in the region and along the Rutherford Avenue/Sullivan Square (RA/SS) corridor. The alternatives identified are very effective strategies to reduce the use of single occupancy vehicles, and mitigate the impact of future residential and commercial growth.

However, for the LMRWG's efforts to be successful, the underlying road network must be designed with the same goals in mind. Unfortunately, the Boston Transportation Department's (BTD) current design for the RA/SS corridor appears to make accommodating single occupancy vehicle use as its highest priority, in contrast to the GoBoston 2030 Vision and Action Plan, Imagine Boston 2030, and the Citywide Resilience Strategy, which all recognize the importance of and seek to implement multiple modes of travel.

BTD's preferred design for the corridor, unveiled on May 18, 2017, does not prioritize pedestrian and bicycle access to Charlestown's two T Stations, and does not promote alternative strategies for moving people through the corridor. In addition, it fails to fully accommodate transit oriented development in the RA/SS area, as envisioned in the 2013 MAPC-funded Sullivan Square Disposition Study. We fear that BTD started with an end goal in mind, which Mayor Walsh appeared to hint at when he joined Charlestown residents at a community gathering this summer.

We write now to articulate our concern that Underpass Option fails to align with the Working Group's goals and alternatives. We are hopeful the Group will encourage BTD to reassess and improve the preferred design, in light of a MAPC representative's observation on September 25th that there is no measurable difference in regional traffic flow between the Surface and Underpass options. This indicates local conditions, such as quality of life, should receive predominant weight in the design outcome.

We believe surface alternatives do exist and should be explored. We have, therefore, attached Exhibits A and B. The first addresses concerns about BTD's designs for Rutherford Avenue and Sullivan Square,

and the second includes suggestions for further study by the Lower Mystic Regional Working Group, in coordination with the City of Boston.

We strongly believe it is in the interests of the Commonwealth, the City of Boston, and the Charlestown neighborhood to examine significantly more effectively options for the RA/SS area. We urge the LMRWG to take a close look at our suggestions.

Thank you for your consideration.

Nate & Gitte Blanchet
Washington Street

Amy Branger & Andrew Klein
Tremont Street

Pam Daley
First Avenue, Charlestown

H David & Liz Hennessey
Monument Square

Kate Kennan & Chris Mian
Rutherford Ave, Charlestown

Monica Lamboy
Pearl Street, Charlestown

Elizabeth & Chuck Levin
Bunker Hill Street, Charlestown

Robert Pelechaty
Washington Street

Ivey St. John
First Avenue, Charlestown

Emma & David Yashar,
Union Street, Charlestown

ccs:

Stephanie Pollack, Secretary, MassDOT
Jay Ash, Secretary, EOHED
Matthew Beaton, Secretary, EOEA
David Mohler, MassDOT and Eric Bourassa, MAPC, MPO Co-Chairs
Congressman Michael Capuano
Mayor Martin Walsh, Boston
Mayor Carlo DeMaria, Everett
Mayor Joseph Curtatone, Somerville
Marc Draisen, Executive Director, MAPC
Rick Dimino, A Better City
Mary Skelton Roberts and Lisa Jacobson, Barr Foundation
Becca Wolfson, Boston Cyclists Union
Rafael Mares, Vice President, Conservation Law Foundation
Stacey Thompson, LivableStreets
Chris Dempsey, Transportation for Massachusetts (T4MA)
Wendy Landsman, WalkBoston

EXHIBIT A

Shortcomings in BTD's designs about which we are concerned include:

1. The Underpass Option design has excess capacity that will draw vehicles to the area. In BTD's analysis, of the 14 intersections north of Chelsea Street, 8 intersections at the AM peak and 9 PM peak will operate at LOS A or B, levels that fail to reflect a typical urban environment. Off peak conditions will allow for speeding. (See Attachments A and B).

2. In accounting for changing driving patterns, BTD used a Peak Hour Factor (PHF) of 0.94, and not the MassDOT standard of 0.92, and should be complimented for doing so. However, the McGrath Boulevard project ultimately used a PHF of 0.98, (after receipt of feedback from stakeholders) due to high levels of predicted congestion. BTD should have done the same with the Sullivan Square traffic model as high levels of congestion leads to less "peakiness" and a PHF closer to 1.0.

3. BTD should account for "disappearing traffic" in the same way the McGrath Boulevard project accounted for disappearing traffic (aka "Traffic Evaporation"). The Embarcadero Project in San Francisco was used as a model for that project.

4. Data we received from BTD was generated by Synchro modeling software that has limitations for large projects with complex geometry such as at Sullivan Square. VSSIM modeling includes allowing drivers to make alternate routes decisions in the face of congestion, whereas Synchro modeling does not. Given the complexity of Sullivan Square, we would recommend a VISSIM model be used to evaluate alternatives.

5. BTD has not differentiated between "big LOS F" and "small LOS F", as MassDOT did for the McGrath project. Instead, it should allow for "small LOS F". Indeed, from an efficiency perspective, LOS E is the most efficient use of roadway space and that approach should be included for this project.

6. BTD projected exceedingly large traffic volumes to and from the now vacant area around the intersection of Arlington and Beachum. This suggests that they anticipated new development in this area, but input the new development into standard "trip generation" factors to determine that 500 cars per hour would be coming from and going there.

   The Arlington/Beachum Street area will be a transit oriented development, with fewer than standard vehicle trips. Experience in Kendall Square reveals that with strong TDM, total trips will not increase due to a combination of low-auto use in new development and increasing transit and bicycle use. It appears that the traffic volumes BTD is analyzing are unnecessarily pessimistic.

7. BTD did not adequately study Sullivan Square surface alternatives that could distribute traffic via a series of multi-lane roads. Instead, BTD inefficiently increased lanes on only two roadways - Maffa Way and Rutherford Avenue - to address its demand calculations, while keeping the other roadways constrained. This drives a poor LOS when one 6-7 lane roadway intersects with a second 6-7 lane roadway, and both roads allow left turns. It appears BTD did not study other surface configurations, such as one-way couplets, in a search for ways to distribute the traffic.

8. BTD's recent design for the Rutherford Avenue and Austin Street intersection does not appear to have had significant study, despite the fact that this intersection was the subject of much controversy and discussion in 2012 and 2013, when Mayor Menino supported the Surface Option design, and it was included in the State's the 10 year TIP plan.

   BTD's design for RA reduces the stacking capacity for southbound vehicles turning onto the Gilmore Bridge, while the Menino-approved version had two right turning lanes adjacent to the Bunker Hill Community College, thus separating the turning lanes from the southbound through-lanes to downtown. The current BTD design has 3 surface lanes along the length of Rutherford Ave, with one lane converting into the right turn lane onto the Gilmore Bridge. If the turn lane backs up, which it regularly does, vehicles will begin stacking in the right through lane – a very unsafe situation. As designed by BTD, this intersection has a LOS of F. In addition, no data has been provided that supports the need for an underpass north and southbound at Austin Street.

9. BTD's presentation on May 18th, on page 16, showed only an AM peak delay of 3.2 minutes and a PM peak delay of only 2.7 minutes along the entire length of the study area in 2040 between the surface design and the underpass design. Those figures are from studies prepared by the Working Group.

10. BTD has not shown cost estimates as yet for the Underpass Option and has provided no comparison to the cost of the Surface Option. Those figures are critical to an informed design decision.

11. Significant community benefits can be found in the 2013 Surface Option approved design and in BTD's current 2017 Surface Option, including greatly expanded green space along the entire length of Rutherford Avenue, from the North Washington Street Bridge to the Mystic River. These designs allow for a generous shared use path, an adjacent sidewalk, and significant amounts of green space which provide excellent access to the T Stations.

    The width of the shared use path is critically important to encouraging neighborhood residents and workers to use transit. Studies have shown that people are willing to walk much farther in a pleasant environment than in an uncomfortable environment. Section drawings reveal that the Surface Option moves vehicles at least 50+ feet away from neighborhood homes, and perhaps as much as 65 feet away. In contrast, the Underpass Option is highly constrained at key locations such as Mishawum Street, near the Sullivan Square T Station and Austin Street near the Community College Station.

    The constraints near Sullivan Square occur at a location where: 1) multiple pedestrians and cyclists will likely be waiting to cross Rutherford Avenue or Maffa Way to get to the T Station, 2) pedestrians and cyclists are not protected from moving traffic since the existing parking lane is being eliminated, and 3) they will be next to the open underpass – a location likely to ice over easily. Although both alternatives improve the conditions that exist today, an opportunity to dramatically transform access to the T Stations will largely be missed with the Underpass Option. (See Attachments D and E.)

12. BTD's current Sullivan Square Underpass design virtually eliminates several development parcels, which were developed in the Disposition Study of 2013. These parcels were designed to greatly enhance biking and pedestrian access to the T station and as effective people movers to various destinations. BTD indicates that some blocks shown on the Underpass Option will be available for

air rights development, but in most circumstances that type of development is cost prohibitive. In the meantime, large open cuts will exist above the underpass areas in a location that is intended to be pedestrian friendly.

13. Although investigation into the impact of sea level rise is underway and suggests that the addition of berms in the area can address potential overflows of the Mystic River, severe rain storms present a threat that a berm cannot address. The recent lessons of Houston, west Florida, and Puerto Rico show how quickly intense rainfall can flood an area. Closer to home, in July 2010, a rapid rainstorm caused more than 15 feet of water to flood into the McGrath Underpass to Assembly Row, requiring the rescue of a trapped driver by an off duty firefighter (see photo[1]). The Rutherford Avenue corridor – the site of the former Lowell Canal - has a high water table, making inadvisable a sub-surface construction intended to move large numbers of people.

McGrath Underpass Rescue, July 10, 2010

14. A Surface Option offers flexibility in the event of extraordinary traffic volumes generated by sporting events at the Garden, concerts at the future casino, and other large public gatherings. Specifically: a) contemporary traffic signals can be programmed to change signal timing automatically to alleviate heavy demand in a particular direction; b) a Surface Option can be designed to allow center lane direction to be changed by the police in order to allow large volumes of traffic to exit an area to rapidly; and, c) Instituting parallel parking in Sullivan Square area, would allow eliminating it at times when event traffic would be anticipated. Electronic traffic meters have the ability to communicate with parkers, informing when vehicles must be removed or be towed. This flexibility is impossible in an Underpass Option.

[1] Retrieved from http://www.pictureboston.com/blog/tag/flash-flooding/, October 1, 2017.

EXHIBIT B

Based on the concerns above, we would like to respectfully request that the LMRWG perform further analysis of transportation alternatives so that the design for Sullivan Square and Rutherford Avenue reflects its regional goals of mitigating and reducing traffic, and reflects strategies that move people instead of just vehicles. We specifically request that the working group analyze:

1. At least two additional surface design alternatives at Sullivan Square:

    a) A two-way grid concept with expanded capacity at streets other than Maffa Way and Rutherford Avenue and reductions in left turn movements– In BTD's Underpass Option, Rutherford Avenue flows directly into Maffa Way, thereby eliminating a left turn. A similar shift should be considered in the Surface Option.
    b) A one-way grid concept - In this alternative, vehicles would be dispersed through a north-south one-way couplet (Rutherford Avenue and Alford Street) and an east-west one-way couplet (Maffa Way and Main Street), with expanded capacity at nearby streets. (Attachment F)

2. At least four additional surface design alternatives at Austin Street:

    a) Elimination of the underpasses, yet inclusion of effective stacking capacity for southbound vehicles turning right onto the Gilmore Bridge. In concert with this alternative analysis, the timing of the light at the bridge and McGrath Highway should be studied to understand whether or not the phasing should be changed because of the narrowing of McGrath Boulevard.

    b) Inclusion of elements of Continuous Flow Intersection – In this type of intersection, vehicles turning left do so several hundred feet before the intersection. We suggest this study for vehicles traveling from Cambridge into Charlestown on the Gilmore Bridge who then turn left (northbound) on Rutherford Avenue. A visual depiction of a continuous flow intersection can be found at https://www.youtube.com/watch?v=E-gpAnP0nrU.

    c) Inclusion of a Michigan left - In this type of intersection, the left turn is moved up half a block. It is our understanding that this design was used in the Casey overpass project.

    d) Southbound underpass only at Austin Street – if Alternatives A-C above are not viable for Austin Street, a southbound underpass could be studied.

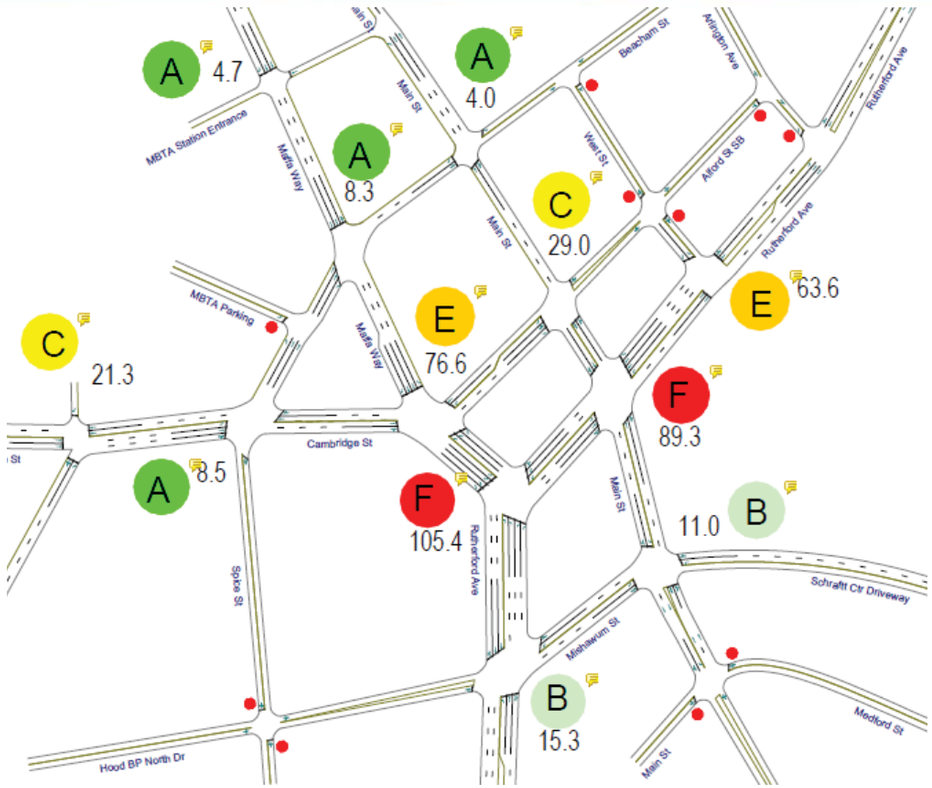
    In addition, we would like to suggest that VSSIM modeling software be used for alternatives analysis. Given the number of roadways and alternatives, and the neighborhood's desire to prevent cut through traffic, modeling software that accounts for driver choices seems wise.

    We also believe a Peak Hour Factor (PHF) of 0.98 should be used, as it was for the McGrath Boulevard study.

    We hope that BTD will prepare a Traffic Impact and Analysis Study (TIAS) and make public its assumptions for mode split and annual traffic growth. It would appropriate for the public to have a chance to examine and comment upon the City's estimates of future traffic growth.

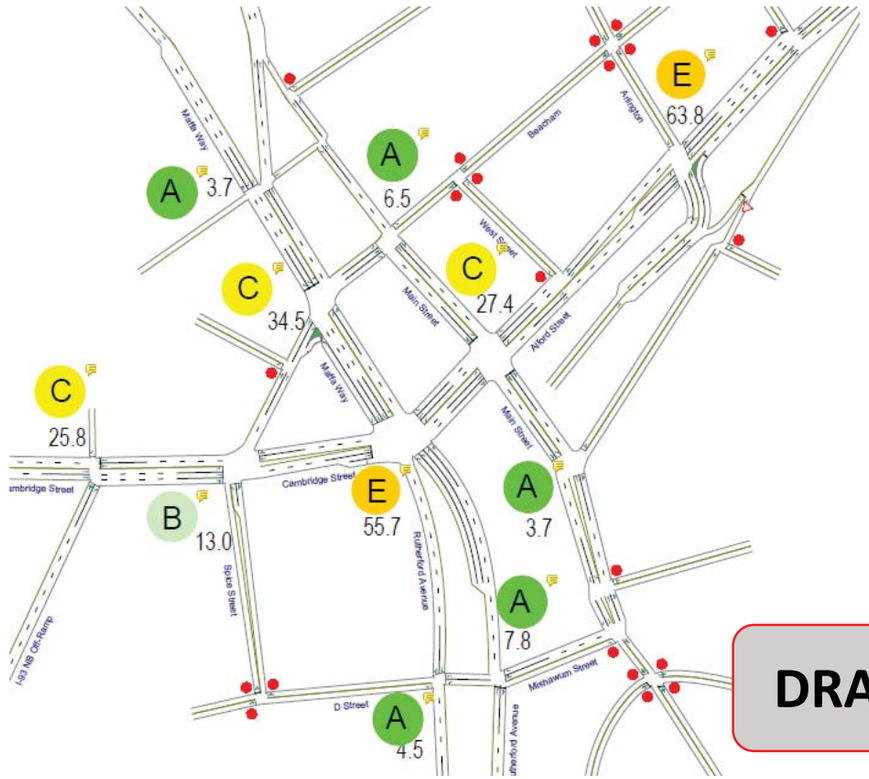
We also hope that the LMRWG and/or BTD will model and publish anticipated pedestrian delays at all intersections in the RA/SS study area for each of the roadway alternatives. In light of Charlestown's proximity to the Bunker Hill Community College and the Sullivan Square T Stations, and the LMRWG's goal of increasing transit use, it seems wise to focus on ensuring pedestrian and biking experience is enhanced and successful.

TRAFFIC ANALYSIS RESULTS – AM Peak - Tt



AT-GRADE CONCEPT

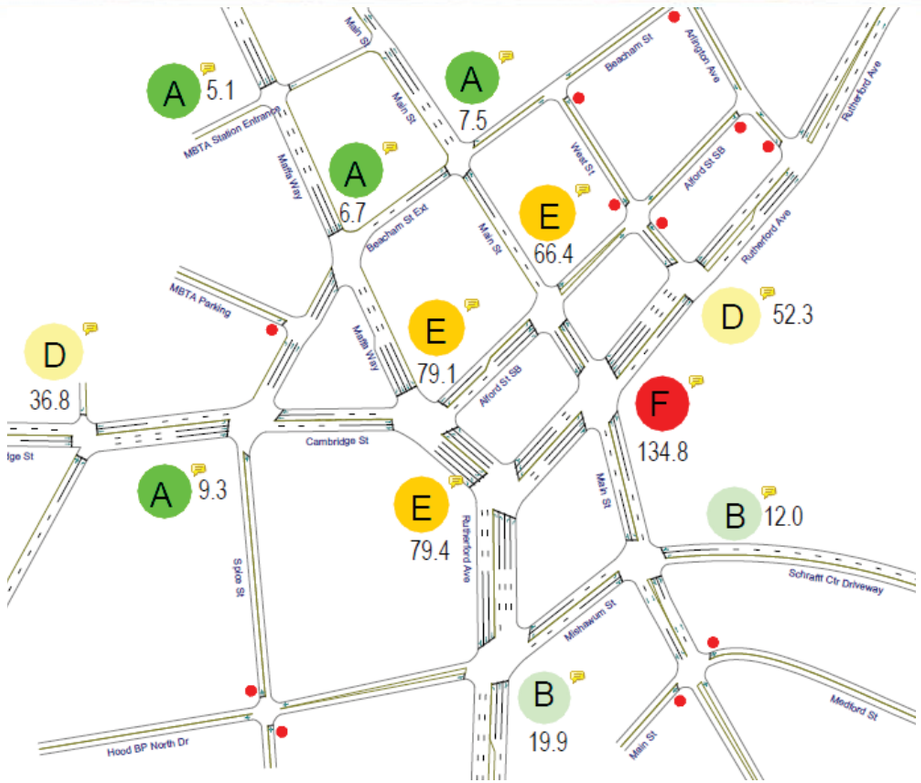
SYNCHRO Performance Measures



UNDERPASS CONCEPT

DRAFT

TRAFFIC ANALYSIS RESULTS – PM Peak - Tt



DRAFT

AT-GRADE CONCEPT

SYNCHRO Performance Measures

UNDERPASS CONCEPT

LOWER MYSTIC WORKING GROUP

LOWER MYSTIC REGIONAL WORKING GROUP

MassDOT | CTPS | MAPC | City of Boston | City of Everett | City of Somerville

CTPS Model Output - January 23, 2017 - Surface vs. Underpass

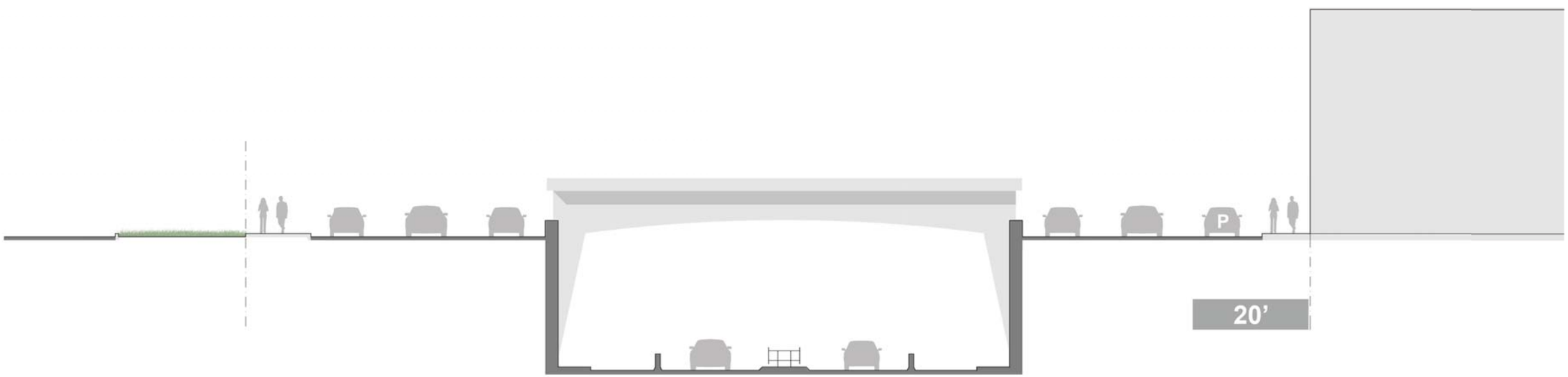
Regional Location			AM Peak Hour Delay (Seconds)			PM Peak Hour Delay (Seconds)		
INT #	Intersection	City	2040 Surface	2040 Underpass	More Favorable	2040 Surface	2040 Underpass	More Favorable
32	Sullivan Square (Route 99 @ Mystic/Main/Cambridge)	Charlestown	106	65	Underpass	52	33	Underpass
31	Rutherford Ave @ Austin St/Gilmore Bridge	Charlestown	95	38	Underpass	115	67	Underpass
30	Rutherford Ave @ Rt 1 Ramps	Charlestown	75	31	Underpass	42	23	Underpass
29	City Square (Chelsea St @ Rutherford/No. Washington)	Charlestown	73	41	Underpass	92	51	Underpass
56	Main @ Austin St	Charlestown	36	18	Underpass	82	46	Underpass

Source: Lower Mystic Regional Working Group Final Presenation 1-23-2017

SYNCHRO Performance Measures

ATTACHMENT D

Rutherford Ave. Cross Section:
Existing at Mishawum St.



RCIC
Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:

Underpass Option at Mishawum St.

RCIC

Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:

Surface Option at Mishawum St.

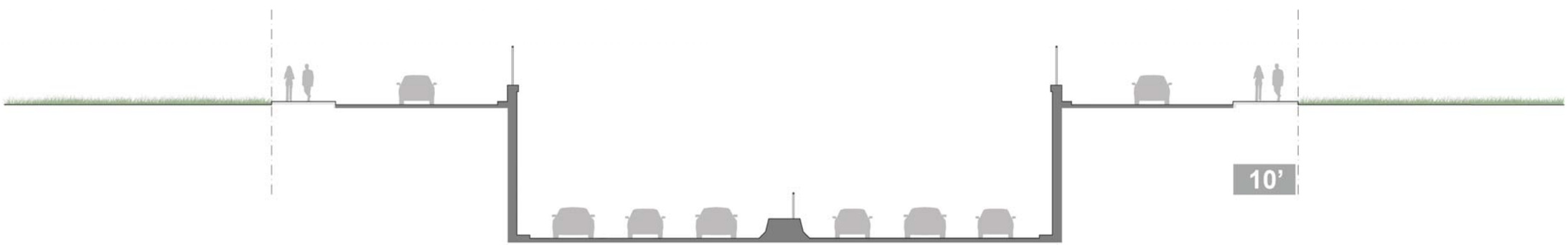
RCIC

Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:
Surface Option at Mishawum St.

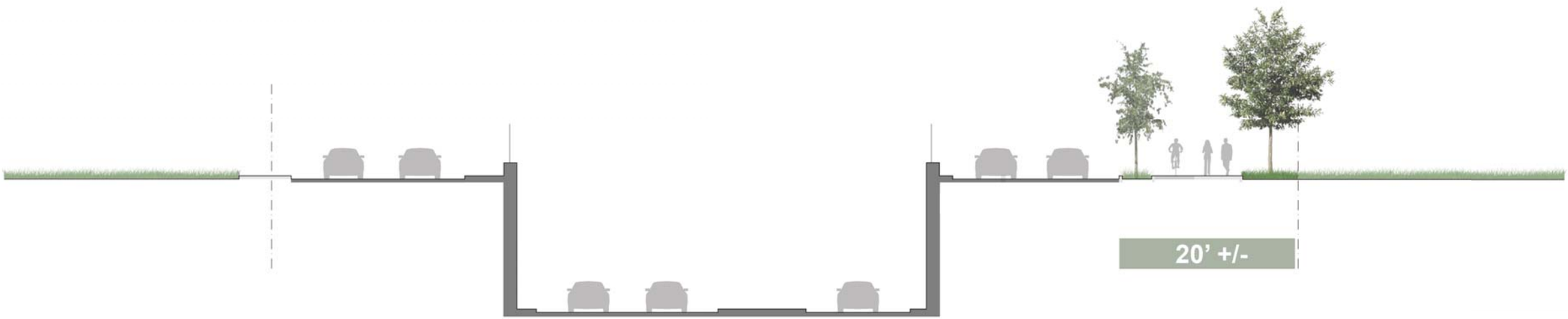
RCIC
Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:
Existing at Austin St.



Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:
Underpass Option at Austin St.



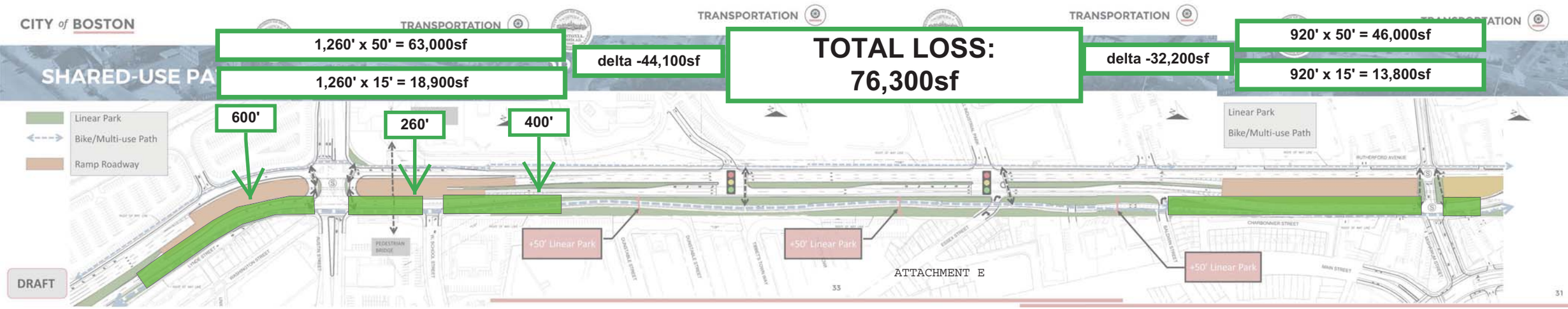
RCIC
Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:
Surface Option at Austin St.

RCIC
Rutherford Corridor Improvement Coalition

Rutherford Ave. Cross Section:
Surface Option at Austin St.

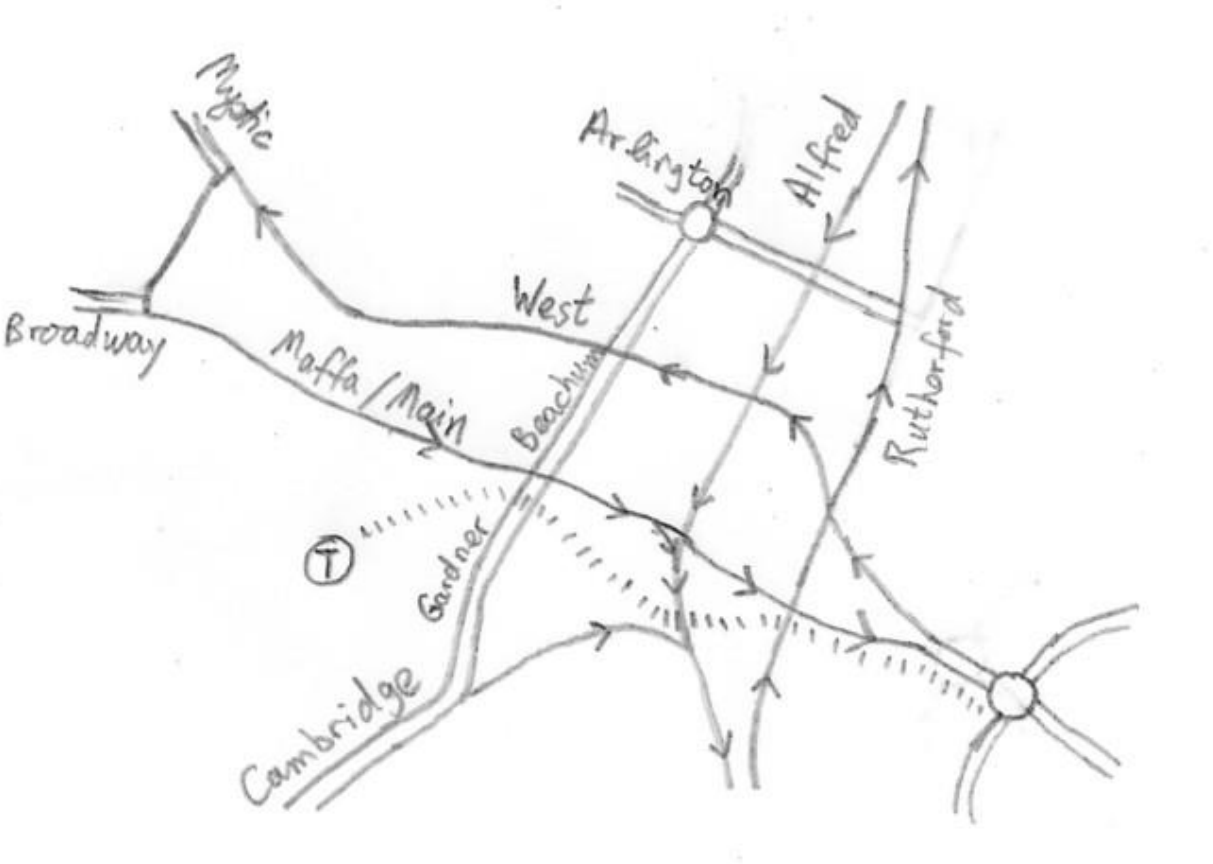
RCIC
Rutherford Corridor Improvement Coalition



Overlay and calculations prepared by RCIC.

Concept Plan for Sullivan Square as a One-Way Grid

Peter Furth, 6/5/17



Single lines represent one-way streets (which may have multiple lanes); double lines represent two-way streets; and the line with dashes is the walking path from the neighborhood to the T station.

Traffic analysis would be needed to determine how many travel lanes are needed on each road but my guess is as follows:

- Alford and Rutherford: 3 lanes each
- Maffa/Main and West: 2 lanes each (possibly 3 on some blocks)
- Gardner / Beachum: 1 lane per direction (and thus 2 lanes)
- Arlington: 1 lane per direction (and thus 2 lanes)

The key to a one-way grid plan with close intersection spacing is to have a short signal cycle. That, in turn, requires that all the signalized intersections split time only two ways, i.e., one phase for the N-S street, one for the E-W street, with concurrent pedestrian crossings and no left turn phases or all-pedestrian phases. To accommodate pedestrian crossings, the minimum cycle length would be 44 s (22 s per street); to have additional capacity and to account for imbalance in demand, a longer cycle length

will be desirable. I assume 65 s, which would allow one street to have a split as great as 43 s while the other has a split of 22 s.

The blocks surrounded by one-way streets have a circumference of roughly 1300 ft. With a cycle length of 65 s, that allows for traffic progression (green wave) in all four directions (N, S, E, W) at a speed of 20 ft/s, which is 13 mph, a speed that represents a very good balance between the needs of traffic (a short cycle combined with a green wave at 13 mph will give cars very good service) and the needs of pedestrian safety.

(This, by the way, is essentially how downtown Portland, Oregon's traffic circulation works: a one-way grid with square blocks spaced 275 ft on center, giving a block circumference of 900 ft. Signals have 2 phases, with a 70 s cycle, resulting in a progression speed of 900 / 70 = 13 ft/s or 9 mph.)

Traffic analysis would have to be done to confirm whether turn volumes at each intersection are indeed low enough to permit concurrent pedestrian crossings. In my preliminary scan, I preview that one location (Alford @ Maffa/Main) will have so great a right-turn volume that concurrent pedestrians would not be safe. In the concept sketch, I deal with that right-turn conflict by routing pedestrians to cross instead at a crosswalk about 180 ft south of it, where Cambridge St meets Alfred. The resulting pedestrian detour is part of the path indicated in the figure from the Charlestown neighborhood to the T station.

The concept plan includes two roundabouts, both intended to have a single circulating lane. A roundabout intersection at Arlington and Beachum will help preventing backups onto Alford Street. The other roundabout, at the entry to Charlestown where Main / Bunker Hill / Medford meet, is not critical to the success of the one-way grid, though it would reduce delay for cars and pedestrians and would probably help limit backups to Rutherford Ave.