

Grounding McGrath:

Determining the Future of the Route 28 Corridor

Final Report

Grounding McGrath Report | December 2013

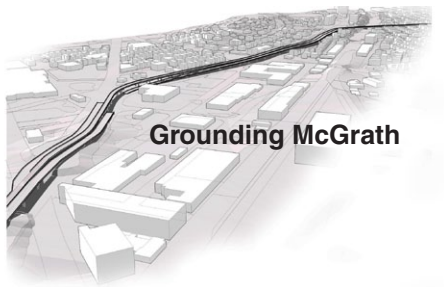
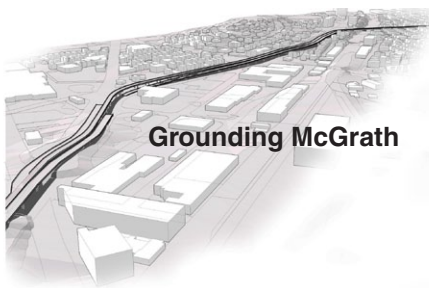


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EXECUTIVE SUMMARY

Introduction

The infrastructure of the McGrath corridor (Route 28 from Mystic Avenue/Interstate 93- to the Cambridge city line) is antiquated. Some of the structures that carry traffic through the corridor are physically deteriorated, and the corridor's configuration represents an outdated approach to road building that emphasizes auto mobility without due consideration for either community impacts or access by other transportation modes.

Built in the early 1950's, the McGrath corridor's viaduct structures pre-date not only the Big Dig, but also the original construction of the Interstate 93 elevated viaduct through Somerville and Cambridge. This study is titled "Grounding McGrath" in recognition of the figurative need to "ground" the McGrath corridor in the reality of today's uses and community vision for the future, as well as the literal plan to bring the main elevated structure to grade level.

MassDOT initiated the Grounding McGrath – Determining the Future of the Route 28 Corridor Study (Grounding McGrath) in order to address a number of issues and objectives, including:

- Two of the five structures comprising the McGrath corridor study area – the McCarthy Viaduct and Gilman Street Bridge – were identified for repairs or replacement under MassDOT's Accelerated Bridge Program (ABP).
- The City of Somerville has continually expressed interest in removing the McCarthy Viaduct, and has undertaken a planning effort for the Inner Belt and Brickbottom Districts.
- The extension of the MBTA Green Line (GLX) to Somerville and Medford, which has entered the design/construction stage, will significantly enhance public transit access and capacity to the corridor.
- MassDOT's policies – including the GreenDOT Policy, the Mode Shift Goal, the Healthy Transportation Policy Directive, and the Complete Streets design approach – call for promoting healthy, multi-modal transportation choice. These policies strongly support the surrounding neighborhood's desire to improve multi-modal transportation in the McGrath corridor, including the planning and design for the Somerville Community Path.

- MassDOT must consider not only construction costs, but also long-term maintenance costs of elevated structures, and is re-evaluating whether it is necessary or appropriate to rebuild certain deteriorating overpasses throughout the Commonwealth.

This study is about not only improving transportation infrastructure, but also community connectivity, accessibility in all transportation modes, economic development, and addressing safety deficiencies. The Grounding McGrath effort goes well beyond a technical challenge, as it requires a multi-faceted approach to invite community engagement and evaluate potential strategies in order to achieve a broad range of desired outcomes.

The result of the Grounding McGrath study is a series of recommendations that are informed by the full range of corridor priorities, consistent with comprehensive data analysis, and supported by MassDOT, the Federal Highway Administration, corridor stakeholders, and the community as a whole. This report documents the process that has been undertaken, including civic engagement, establishment of goals and metrics, data collection and analysis, alternatives development and analysis, and recommendations. The recommendations of this study are grouped into short-, medium- and long-term improvements, along with an outline of the steps that will be necessary and the parties responsible for advancing these improvements through the project development process to implementation.

The study process builds on and integrates the work of the MassDOT project team, within the context of community input and other ongoing efforts. All steps were completed in consultation with the Working Group (see below), and results have been presented to the general public at advertised public informational meetings.

Study Area

The study area for the Grounding McGrath study is the Route 28 corridor from Broadway in Somerville in the north to Land Boulevard in Cambridge in the south (see Figure ES- 1). It comprises McGrath Highway and Monsignor O'Brien Highway. McGrath Highway runs from the junction with Mystic Avenue/Interstate 93 to the north (beyond which Route 28 is named the Fellsway) to the municipal boundary with Cambridge to the south. Route 28 is Monsignor O'Brien Highway through Cambridge to the municipal boundary with Boston. For purposes of this study, the entire length of Route 28 within the study area is generally referred to as the “McGrath corridor.” Figure ES- 2 shows the study area, while Figure ES- 3 shows the central portion of the corridor (focus area) from an oblique angle to better represent the varying elevated structures.

The bridges and other structures that carry the McGrath corridor, as shown in Figure ES- 4, are the “Gilman Street Bridge,” which carries the McGrath corridor over Gilman Street in Somerville; the Lowell Line Bridge, which carries McGrath over the MBTA Lowell Commuter Rail Line; the “McCarthy Viaduct” that carries McGrath over Washington Street and extends to carry McGrath southbound over the Medford Street/Somerville Avenue intersection; and the “Squire’s Bridge”, which carries Route 28 over the MBTA Fitchburg Commuter Rail Line.

Working Group

MassDOT’s work on this project has been supplemented by a project Working Group, whose members include elected officials, state agencies, local advocacy groups, municipal officials, planning organizations and architects. Members represented and reported back to their constituencies and provided input on the process and the work of the project team. The Working Group met seven times throughout the project, providing feedback and guidance on the study’s process, concepts, analysis and recommendations:

- June 29, 2011
- August 3, 2011
- December 12, 2011
- March 7, 2012
- September 27, 2012
- February 13, 2013
- April 25, 2013

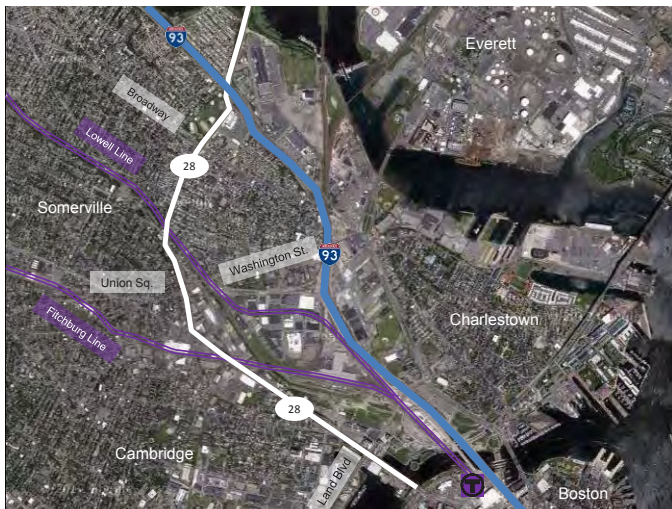


Figure ES-1: Route 28

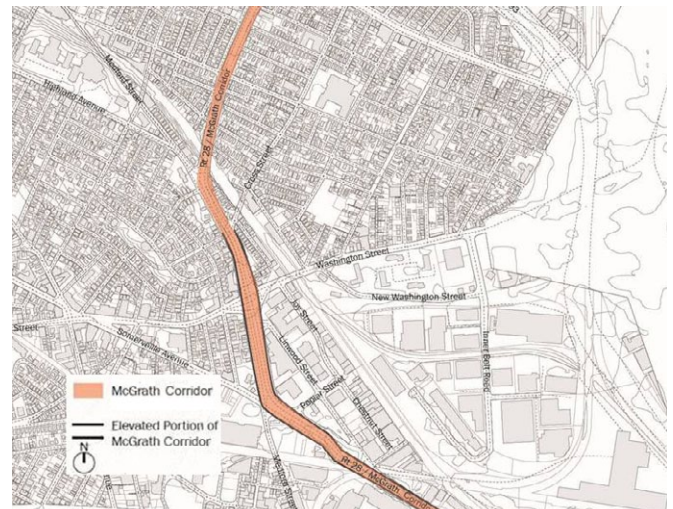
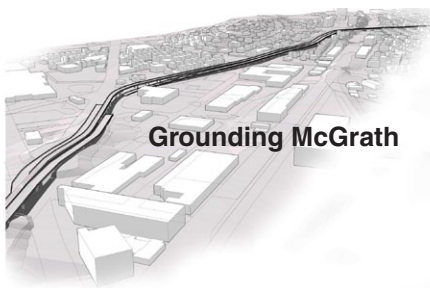


Figure ES-2: Study Area



Grounding McGrath

Study Approach and Goals

The following defined Goals and Objectives were developed as part of the public involvement process:

1. Improve Access and Mobility
Move people efficiently by all modes along and across the corridor, on all local and regional desire lines
 - » Improve regional and local travel time
 - » Improve health of residents
 - » Facilitate multi-modal transportation opportunities
2. Promote Connectivity
Improve the cohesion of abutting neighborhoods for the sake of community, place-making and economic development
 - » Identify new connections
 - » Improve urban form/places
 - » Improve access to open space
 - » Support and/or generate economic development

3. Improve and Balance Functionality
Ensure cost-effective and efficient use of many modes
 - » Enhance safety for all modes
 - » Maintain regional travel capacity
 - » Limit impacts on surrounding roadways
4. Provide Accountability
Advance a design that is sensitive to the needs and desires of stakeholders
 - » Share benefits and burdens of changes
 - » Limit impact to environment
 - » Ensure long-term corridor maintainability

These goals and objectives are measured through the use of related evaluation criteria, which are discussed in more detail in Chapter 5.



Figure ES-3: Focus Area

Existing Conditions and Key Issues

The study began with a thorough examination of existing conditions, including transportation conditions in all modes, land use, and economic development issues. Through the interdisciplinary Existing Conditions analysis, the Grounding McGrath study identified the critical issues and opportunities that drove the development of alternatives, and form the quantitative and qualitative basis upon which to measure the alternatives to the Goals and Objectives. The issues and opportunities presented below represent a distilled version of the larger trends, immediate needs, overall constraints and/or driving forces that were accounted for in the alternatives development and analysis tasks.

Structures

- Two structures on the McGrath corridor are currently slated for or are undergoing repair and/or rehabilitation.
 - » The Gilman Street Bridge is being replaced under MassDOT's Accelerated Bridge Program (ABP). This replacement is currently under design.
 - » The McCarthy Viaduct is currently undergoing a short-term repair and rehabilitation project to address pressing structural and safety issues. The scope of this project has been minimized in recognition of the decision to ultimately dismantle the structure, but it is a substantial project nonetheless due to the scale of the structure and the nature of the problems. MassDOT is also undertaking interim improvements to multi-modal access and safety in and across the McGrath corridor as part of the viaduct repair project.

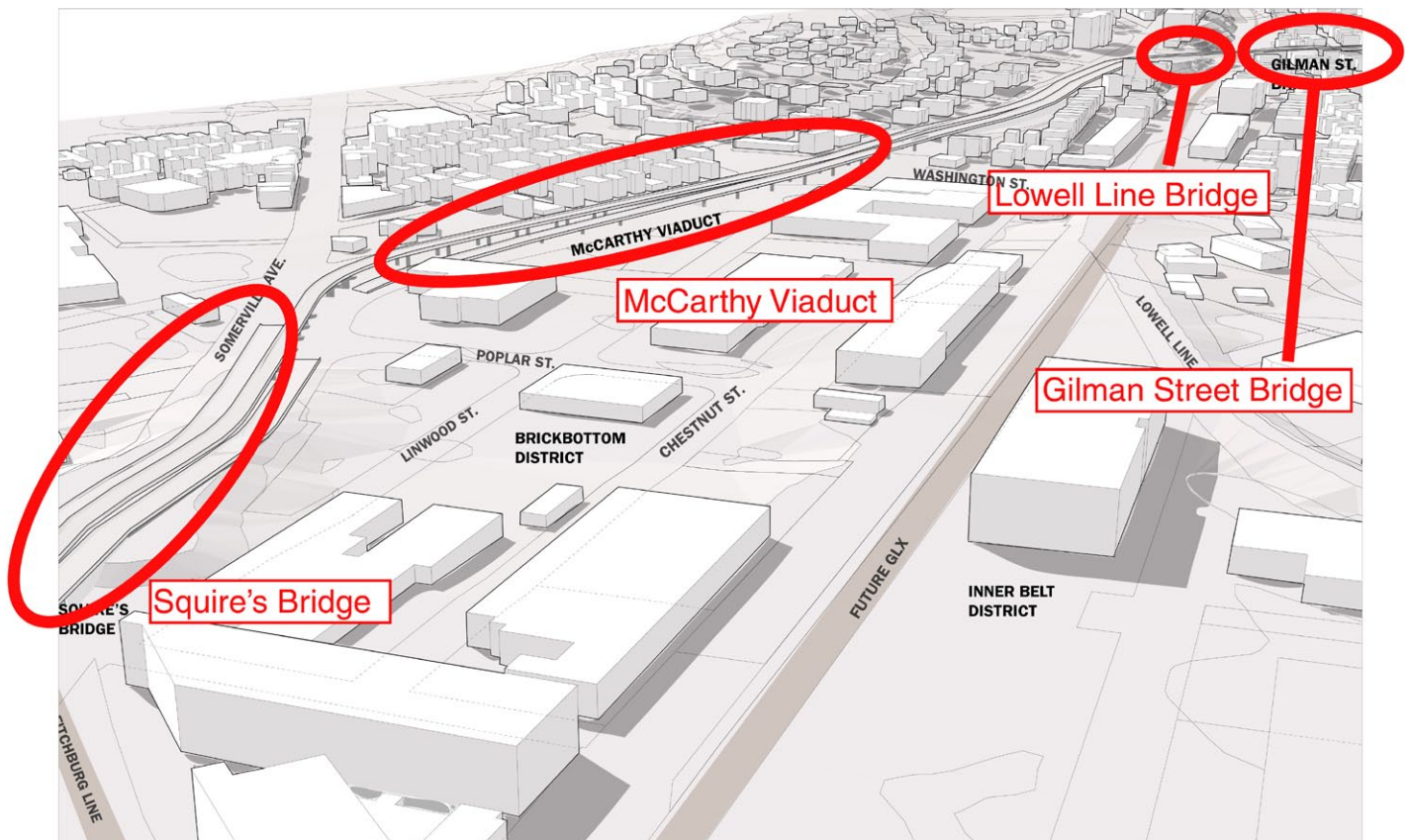
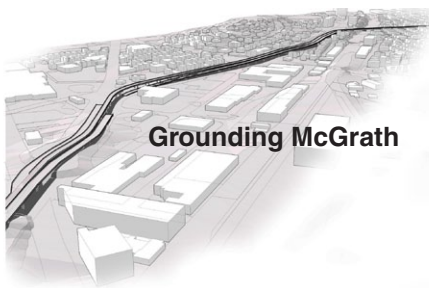


Figure ES-4: Bridges and Structures of Route 28



- The three structures not slated for repair (the Squire's Bridge, the Lowell Line Bridge, and the Otis Street pedestrian bridge) have condition ratings of Fair or Satisfactory. These three structures have isolated areas with deterioration, but do not currently require any repairs in the short-term.
- Due to clearance requirements by the MBTA, there are two "fixed points" in the study area: (1) the truss bridge over the Lowell Line and (2) the Squire's Bridge over the MBTA Fitchburg Commuter Rail Line. Grade separation of roadway and railroad must be maintained in order to avoid creation of a new railroad grade crossing, and the clearance provided at these locations cannot be reduced.
- Roadway design standards for maximum roadway gradient limit the distance required to bring the McGrath corridor to grade from these two fixed points. This distance will be dependent on the design speed for the road, and whether pedestrian routes along McGrath will follow the traffic alignment.
- Changes to the McGrath corridor provide opportunity to improve the cost-effectiveness of infrastructure. The McGrath corridor is carried by approximately 1,500 feet of bridge structures and 258 feet of tunnel. The cost of maintaining these structures is a significant factor for the corridor.
 - » This is exacerbated by the age of these bridges. They are decades old and have structural elements that increase corrosion rates. Deck joints, which expose steel beams to water and de-icing salts, are one example.
 - » New structures would be required to carry the McGrath corridor from the fixed points to grade in the study focus area. New construction technologies available today could reduce future maintenance costs for these structures.

Pedestrians and Bicyclists

- The Somerville Community Path is being planned and designed through this area as part of the GLX project.
- The existing McGrath corridor is a pedestrian barrier. There are few crosswalks provided across the McGrath corridor, with an average of over ¼ mile between crossings. Even where pedestrian crossings exist, they are difficult, confusing, long, and uninviting.
- A high volume of pedestrians cross the McGrath

corridor at the existing crosswalks, showing very strong pedestrian desire lines, including connections to and from the bus stop on Washington Street under the McCarthy Viaduct.

- Bicycling is allowed on the McGrath corridor, including on the elevated portions. However, this may be unclear to bicyclists, there are no bicycle lanes, and motor vehicle traffic is high volume and high speed. As a result, bicycle volumes are comparatively low.

Transit

- The MBTA's Green Line serves the southeastern corner of the study area, with Lechmere as the current end of the line. Lechmere Station also functions as a bus hub for routes 69, 80, 87 and 88.
- The planned GLX through the McGrath corridor will greatly enhance transit access and capacity in the corridor. This may provide an opportunity for mode shift to transit, decreased local traffic demand, and enhanced economic development.
- Two MBTA commuter rail lines (Fitchburg and Lowell) from North Station pass through the corridor, but do not have station stops in Somerville. While the lines do not service Somerville, the elevated roadway structures over the rail lines are necessary.
- Eleven MBTA bus routes operate in, across, or around the McGrath corridor, including routes CT2, 69, 80, 86, 87, 88, 89, 90, 91, 95, and 101. These are primarily east-west routes, providing an opportunity to improve coordination of fixed route service and headways with the planning for the McGrath corridor.
- There are no bus routes that provide a consistent and complete connection along the McGrath corridor from Broadway to the MBTA Lechmere Station.
- There are no bus routes that use the McCarthy Viaduct. Buses use the surface streets to the extent possible, and must use the Squire's Bridge and the bridge over the Lowell Line.
- Union Square and the adjacent corridor neighborhoods all have direct bus service, but the Inner Belt and Brickbottom areas are only served on their periphery, along Washington Street and the McGrath corridor.

- Bus stops on the routes that bisect the corridor (Broadway, Washington Street) are close to the McGrath corridor and have challenging pedestrian crossings.
- Bus routes CT2, 80, 86, 87, 88, and 91 travel along portions of the McGrath corridor and could be affected by the project. Daily boardings in the corridor are approximately 1,315 passenger trips; total daily boardings on these routes are 17,428 passenger trips.

Demographics and Land Use

- The study area population of 56,560 grew by 3.6 percent from 1990-2010, while the population in Somerville decreased by one percent during the same period. The population in the study area is undergoing an increase in ethnic diversity, as well as an overall decrease in average age, with the percentage of children and elderly shrinking.
- Housing and commercial prices in the corridor vary widely, but have high points which represent levels at which redevelopment of existing properties and in some places, new construction can be supported.
- High housing demand and increasing home prices, in Somerville in general and in the McGrath corridor may also support significant redevelopment and some new construction.
- The area has seen more development interest based on the pending GLX project. Decisions about neighborhood character are important, and should be supported by plans for the McGrath corridor.

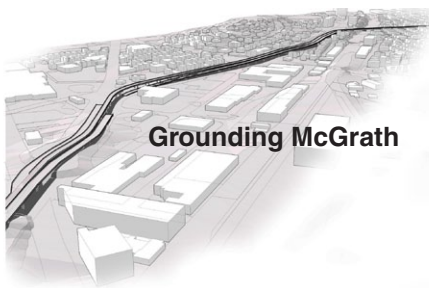
Environmental

- There are approximately fifteen small parks, playgrounds, and recreation areas along the McGrath corridor or in the immediate study area. Connections to these areas should be enhanced through the McGrath alternatives.
- During significant storm events, the Millers River and storm sewers in the area can flood lower portions of the study area, especially near the Somerville Avenue and Poplar Street intersections with the McGrath corridor.
- There are no DEP designated wetlands in the study area.

- Planning for the McGrath corridor should consider historically significant areas and neighborhoods, including the Prospect Hill area in Somerville and the Union Railway Car Barn in Cambridge, as well as three National Register Districts: East Cambridge, Winter Street, and Charles River Basin.
- There are a few DEP oil or hazardous materials sites with Activity and Use Limitation (AUL) along the corridor or immediately adjacent to the McGrath corridor:
 - » Opposite Foss Park
 - » Across the highway from Rufo Road
 - » To the east of Water Street
- In addition, there are several sites in the immediate study area in the Brickbottom and Inner Belt areas, south of the Fitchburg Commuter Rail Line and opposite Foss Park.
- Residents of neighborhoods abutting the McGrath corridor, like neighborhoods adjacent to other congested high-volume roadways, are at higher risk for respiratory diseases and other health risks due to the vehicle-related emissions from heavy traffic volumes than are residents of other neighborhoods.
- The presence of the elevated structure influences how noise pollution from traffic affects the adjacent neighborhood.

Vehicular Traffic

- There is an imbalanced directional split in vehicular traffic volumes: Typically, the peak period in the morning mirrors the afternoon reverse movement. However, southbound volumes are 12 percent higher on the McCarthy Viaduct and 19 percent higher on Monsignor O'Brien Highway in Cambridge in the AM peak than are the northbound volumes in the PM peak. This indicates that drivers may seek alternative routes in the PM.
- There are more than 900 vehicles that use Medford Street southbound (at Somerville Avenue) during the morning peak period. This serves as an alternative access point from the McGrath corridor to reach points in East Cambridge.
- Traffic volumes in the McGrath corridor are highest between Washington Street and Medford/Highland Avenue.
- There are substantial volumes (more than 1,000 vehicles during peak periods) on major cross streets



with the McGrath corridor, such as Broadway, Medford Street/Highland Avenue, Washington Street, Somerville Avenue/Medford Street, Third Street, and Land Boulevard. With the exception of Washington Street, these intersections are already at-grade. Some at-grade intersections with the McGrath corridor that experience long queues and high delay during peak periods include:

- » Broadway: This intersection operates at LOS D during the morning peak period, and degrades to LOS E in the evening peak with long queues and high delays for the northbound and southbound left-turn movements.
 - » Medford/Highland: During the morning peak period, this intersection has a high volume of eastbound traffic turning right and a high volume of southbound through volumes that result in vehicle delay and an overall LOS F.
 - » Land Boulevard: During both the morning and evening peak periods, this intersection experiences long queues and high delay, particularly northbound left turns, southbound left-turns, and westbound movements.
- The elevated sections of the McGrath corridor over east-west cross-streets generally experience free-flow conditions for the mainline of the McGrath corridor, while the surface roads below experience some delay. The queues from the Washington Street intersection spill back onto the mainline of the McGrath corridor, which causes further delay. This situation is complicated by driver confusion regarding appropriate use of lanes in the vicinity of Washington Street under the McCarthy Viaduct.
 - Based on the CTPS License Plate Survey, only 10 percent of vehicles observed in the AM period use the McGrath corridor segment from the Otis Street pedestrian bridge to the Museum of Science. About 39 percent of vehicles observed exited at Washington Street, indicating the McGrath corridor is used more for access to and from destinations in Somerville and Cambridge than as a through route to Boston. This pattern is expected to continue because the highest percentage of population and employment growth predicted in the corridor is in the focus area adjacent to future development of the Inner Belt/Brickbottom area, as well as

Cambridge destinations such as Kendall Square and NorthPoint.

- Approximately 17 percent of the reported crashes from 2006-2008 involved pedestrians or cyclists (according to the Somerville Police Department).

Future Year Projections

The study also looked at the expected changes in population and other demographic characteristics between 2011 and 2035 and how those changes will impact transportation in the McGrath corridor. The purpose of this analysis is to evaluate transportation issues that are expected to arise in the McGrath corridor and to establish a baseline against which to compare proposed alternatives.

Conditions in the study area have been forecasted to the horizon year of 2035, consistent with the Boston Metropolitan Planning Organization (MPO)'s Regional Transportation Plan (RTP) and the regional travel demand model managed by the Central Transportation Planning Staff (CTPS). The CTPS regional travel demand model is used to understand peak period travel demand under the existing conditions, a future "No Build" condition in the horizon year of 2035, and also for the various alternatives in the future horizon year.

The No Build analysis establishes a future baseline against which to compare proposed alternatives. In addition to the existing conditions analysis, the following key issues and opportunities from the No Build informed the development of the alternatives:

- Population and employment growth in the Inner Belt/Brickbottom area of Somerville is expected to more than double from 2009 to 2035. This growth is expected to have a significant impact on the trips projected to and from that area in the form of new transit, automobile, and non-motorized (bicycle and pedestrian) trips.
- The regional travel demand model assumes planned transit projects such as the GLX and Assembly Square Orange Line Station are in place. As a result, there is projected to be an increase in transit mode share in the corridor for the future year of 2035 of approximately 5 percent in the AM peak

period, and about 3 percent increase in transit share in the PM peak period.

- Based on the outputs from the regional travel demand model, automobile trips along the McGrath corridor are expected to increase in the range of 7.5 percent to 12.5 percent between 2011 and 2035, depending on the segment of the corridor.
- There are some improvements in level of service (LOS) for intersections in 2035 compared to existing conditions. This is primarily due to assumed optimization of traffic signals in 2035. Intersections with the McGrath corridor projected to improve in overall LOS include:
 - » Broadway (PM peak)
 - » Cambridge Street/East Street (AM peak)
 - » Land Boulevard/Austin Street (AM and PM peak)
- Intersections with the McGrath corridor projected to experience a worsening in overall LOS include:
 - » Broadway (AM peak)
 - » Pearl Street (AM peak)
 - » Medford Street/Highland Avenue (PM peak)
 - » Somerville Avenue/Medford Street (PM peak)

Alternatives Development

Based on the existing conditions analysis, the key issues, and input from the Working Group, the Grounding McGrath project team initiated the alternatives development process. This process began with a broad range of high-level, conceptual approaches to the ultimate configuration of the corridor, organized into four general "families" of alternatives:

Keep It:	No Build with structural improvements required for comparison (Future No-Build Conditions)
Move It:	Change the alignment of the McGrath corridor
Bring It Down:	At-grade roadway
Partial Grounding:	A combination of Keep It and Bring It Down options

It was the strongly-held position among members of the Working Group and the surrounding community that only the "Bring It Down" options could fully accomplish the overall goals of the study. In consultation with the Working Group, the community, and the City of Somerville, MassDOT concurred with this position, and the project team advanced the alternatives development process with an exclusive focus on grounded alternatives.

The "Bring It Down" conceptual approach was developed into more specific alternatives focusing on the following configurations:

- Signalized Rotaries
- Median U-turns
- Access Roads
- Boulevard

These four surface roadway concepts were refined into three alternatives for analysis using the regional travel demand model, and for thorough evaluation relative to the criteria developed for Grounding McGrath.

Alternatives Analysis

1. The **Boulevard Alternative** (see Figure ES- 5) features general purpose lanes, three in each direction, on the McGrath corridor between Medford Street to the north and Poplar Street to the south. Left-turns are prohibited from McGrath at Washington Street, both northbound and southbound; these connections can be satisfied at the McGrath Highway/Somerville Avenue/Medford Street/Poplar Street intersection. Poplar Street is realigned slightly north of its current location.
2. The **Hybrid U-Turn/Rotary Alternative** (see Figure ES- 6) combines two initial alternatives and features a rotary at the McGrath corridor/Somerville Avenue/Medford Street/Poplar Street intersection, with the McGrath mainline passing through the rotary. Left-turns are prohibited from McGrath at Washington Street, both northbound and southbound; these connections can be satisfied at signalized U-turn intersections located north and south of Washington Street.

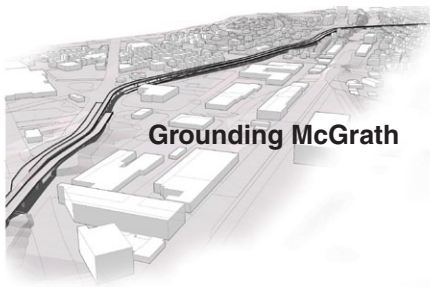


Figure ES-5: Boulevard Alternative



Figure ES-6: U-Turn/Rotary Hybrid Alternative

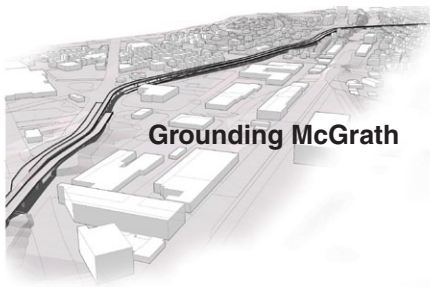


Figure ES-7: Linwood Access Road Alternative

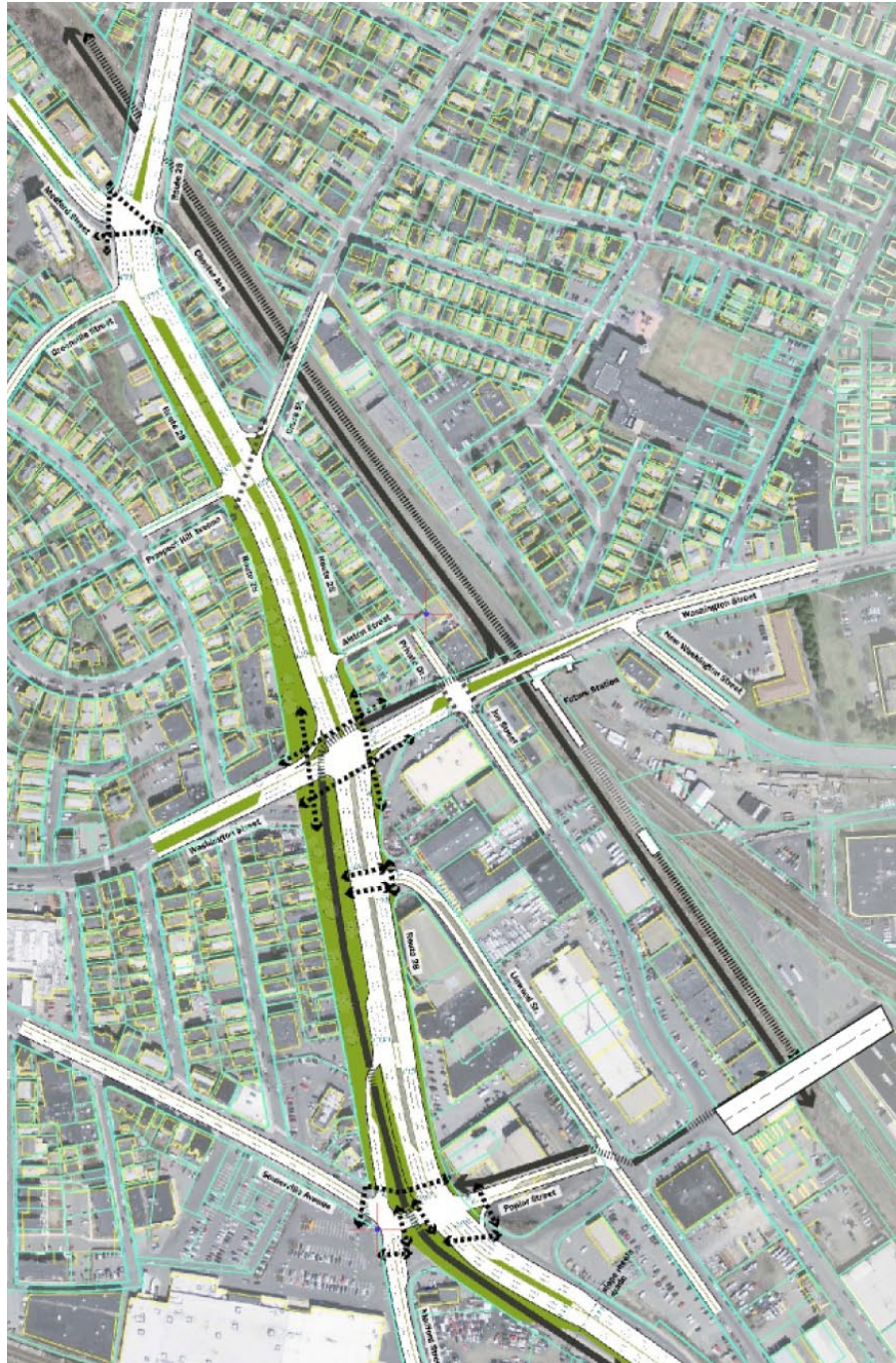
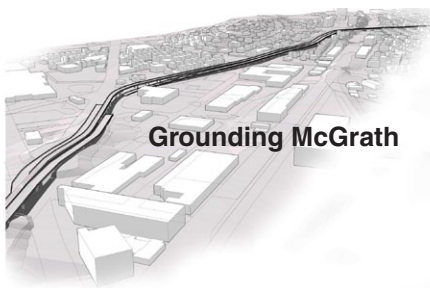


Figure ES-8: IBBB Alternative



3. The **Access Road Alternative** (see Figure ES- 7) features two lanes on the McGrath corridor in each direction for the major north/south travel, while cross street traffic is connected via a circulating access road (with signal control). The access roads allow two-lane access to/from the McGrath corridor/ Somerville Avenue/Medford Street/Poplar Street intersection. This alternative provides northbound access to Union Square via Linwood Street. Southbound access from Union Square is provided via Somerville Avenue.
4. A fourth alternative, which is essentially the **Boulevard Alternative** with a new roadway connection through **Inner Belt** (see Figure ES- 8), was developed by the City of Somerville through its Inner Belt/Brickbottom (IBBB) Study process. This alternative includes a multimodal bridge connection from Inner Belt across the Fitchburg Line tracks connecting through NorthPoint to the McGrath corridor in Cambridge. It also includes an extension of Poplar Street under the future GLX tracks to connect Brickbottom and Inner Belt. This fourth alternative was evaluated by CTPS as part of the IBBB Study, and the outputs were shared with the Grounding McGrath project team.

The at-grade connections achieved by these four alternatives provide an opportunity for a Complete Streets approach that allows for enhanced pedestrian connections, urban design improvements, and a reclaimed right-of-way for other uses. Specifically, the value and importance of a shared-use path that would serve both regional and local bicycling and walking connectivity was recognized. For this primary reason, a shared-use path through the focus area corridor, as well as connections to and from the path, was consistently maintained throughout the alternatives development and analysis processes.

Through collaboration with the study Working Group, MassDOT developed evaluation criteria and metrics for its analysis. The detailed Evaluation Matrix presented in Chapter 5 was prepared as a tool for comparing the developed alternatives and the No Build conditions. The Evaluation Matrix does not establish any preference or weighting of the importance of one objective to another. These preferences are part of the community and

Working Group discussions. Through the use of the these metrics, all of the proposed scenarios -- Boulevard, Access Road, Hybrid U-turn/ Rotary and Boulevard & Inner Belt Road, and the 2035 No Build -- were quantitatively scored relative to the No Build alternative for the Future Year 2035 based on their ability to meet each of the set criteria.

As a result of the analysis, the study provides several broad conclusions:

- Build alternatives show an improvement over the No Build scenario for most categories of the evaluation criteria.
- Build alternatives have similarities in achieving the project's goals.
- Build alternatives have challenges and traffic implications.
- Build alternatives improve community character and provide environmental, public health and Environmental Justice benefits.
- Build alternatives provide new real estate development opportunities.
- Build alternatives have lower 75-year life-cycle costs for the focus area than the No Build alternative.

With the implementation of reduced capacity and the speed changes due to potential congestion for the modeled alternatives, the CTPS regional travel demand model indicated a significant reduction in volumes along the McGrath corridor for all alternatives. Assuming this reduction in traffic volumes and the attendant diversion of traffic (to other modes, other routes, or other travel time periods) is deemed acceptable, the implementation of a narrower north/south cross section appears to be feasible.

However, it should be noted that this feasibility is based on the assumption that a significant number of vehicles that currently travel along the McGrath corridor will not do so in the future. Many of the travelers that would have been in these vehicles are expected to shift to other modes or displace to other travel times, but other travelers would remain in motor vehicles and divert to other routes; the potential impact of those diverted trips should be considered by the affected communities. Additionally, vehicular movements that are currently grade separated with free-flow movement will be more

challenging to process at the new at-grade signals along the corridor due to the delay inherent in the operations of signalized intersections.

For each of the Build alternatives, the Grounding McGrath study identified traffic, operational, and other potential issues that have not been resolved. For example, further study of traffic diversion to other streets in the network, and the resulting capacity issues at other key intersections outside the study corridor, will be required.

Through the study's public outreach process, preference for the criteria related to livability, multimodal transportation, connectivity, community development, and placemaking were expressed, and were also given priority by Working Group members in evaluating their preference for a long-term alternative.

What is the Health Impact Assessment? (HIA)

Formed in 2009 as a provision of the Transportation Reform Legislation that created MassDOT, the Massachusetts Healthy Transportation Compact (HTC) is an inter-agency initiative designed to foster transportation decisions that balance the needs of all users, expand mobility, improve public health, support a cleaner environment and create stronger communities. The directives of the HTC include establishing methods to use Health Impact Assessments (HIAs) to determine the effects of transportation projects on public health and vulnerable populations, and providing transportation planners and engineers, public health administrators and developers with tools to assess public health issues in transportation. The Massachusetts Department of Public Health (MDPH) received a grant to conduct a pilot HIA of an active MassDOT transportation planning study. MassDOT worked closely with MDPH in the selection of the Grounding McGrath Study as a pilot HIA project.

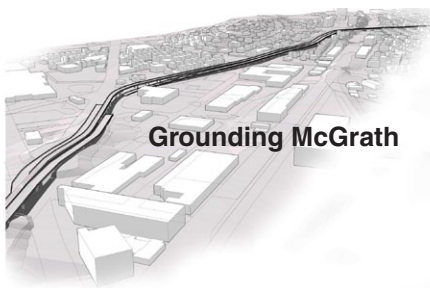
On April 4, 2013, MDPH released the draft HIA for the Grounding McGrath study on its website for public comment. Based on the data reviewed for the HIA, MDPH concluded that all four study alternatives would provide public health benefits to the community. However, the Boulevard and the Inner Belt Alternatives were identified as offering the greatest opportunities for mobility and access in the corridor.

Recommendations and Next Steps

In the context of MassDOT's current policies and programs, including GreenDOT, which seeks to triple the travel mode share of non-automobile use; the Complete Streets approach to roadway design; and the Healthy Transportation Compact, MassDOT recommends moving forward with the Boulevard Alternative (see Figure ES- 9 and Figure ES- 10).

This alternative would provide the following benefits:

- Provide a Complete Streets design for the McGrath corridor by incorporating access for all modes and for users of a diverse range of ages and abilities.
- Improve traffic operations at seven of fifteen intersections compared to the No Build due to refined signal timing and reduced volumes.
- Reduce roadway width and congestion through management of circulation and turning movements.
- Improve multi-modal access to Union Square and Brickbottom via the McGrath corridor, Somerville Avenue, and Poplar Street.
- Provide at-grade intersections that are more intuitive for wayfinding.
- Create enhanced pedestrian access across the corridor.
- Allow the reclamation of the right-of-way for other uses.
- Provide for urban design and community character improvements.
- Provide an opportunity for compliance with the Americans with Disabilities Act of 1990 and the Massachusetts Architectural Access Board by being rigorously designed to current accessibility and mobility standards and regulations.



MassDOT and the project team presented this recommended alternative at a public meeting on May 15, 2013. Those in attendance were generally supportive of MassDOT's efforts to remove the existing barrier created by an elevated highway and incorporate transit and non-motorized modes of travel. However, many Working Group members and other attendees also voiced comments, concerns, and preferences regarding the preferred alternative. MassDOT recognizes these concerns, and takes this feedback from the Working Group and the community very seriously. The following are the principal issues raised about the preferred alternative, and responses to those issues:

Roadway Cross-Section

- **Public Comments.** A preference for further reduction of vehicular capacity, and an exploration of a Boulevard option with four travel lanes (two in each direction). Many participants expressed this preference, and it is the comment that would have the greatest effect on the overall design and function of the preferred alternative, and is discussed further below.
- **MassDOT Response.** It is understandable that the Grounding McGrath study participants favor an alternative that emphasizes minimizing local impacts. MassDOT, however, must also consider the impacts of the corridor design on roadway users in all modes. While MassDOT feels that the Six-Lane Boulevard Alternative was developed, refined, and analyzed as a design approach that appropriately balances regional mobility with multi-modal accessibility and neighborhood livability, MassDOT is willing to give consideration to a four-lane design for the McGrath corridor, as discussed further below. A four-lane design may result in reduced motor vehicle demand and volumes in the corridor; however, this would be due to increased congestion and delay, which would also be experienced by residents of neighborhoods abutting the corridor.

Functional Classification of the McGrath Corridor

- **Public Comments.** A preference for creating a more "livable community" by designing a local roadway, rather than an arterial.
- **MassDOT Response.** MassDOT strongly supports a McGrath corridor design that helps to create a livable community in the area, and multi-modal transportation corridors both along the McGrath corridor and Washington Street. Relative to the question of a local roadway versus an arterial roadway, these are technical "functional classes" of roadway. An arterial is a higher-volume roadway that is used largely for longer trips, while a local roadway is the "lowest" class of roadway, and is used principally for access to and from adjacent land uses. The McGrath corridor is currently a principal arterial, the "highest" class of roadway aside from interstate highways. It currently serves important regional connections for Medford, Somerville, Cambridge, and Boston, and MassDOT believes it should continue to do so, even in a lower-volume, lower-speed, and more neighborhood-friendly at-grade configuration.

Multi-Modal Facility Design

- **Public Comments.** A desire for more clearly-defined pedestrian and bicycle facilities.
- **MassDOT Response.** Each Build alternative includes comprehensive and thorough consideration and accommodation of pedestrian and bicycle facilities. Such facilities are provided in the designs of all the Build alternatives. The designs of the Boulevard Alternative are appropriate for the purposes of a planning study, but they are still conceptual. The level of definition of accommodation for all modes is still fairly general, and will become more clearly defined as the corridor design advances through an open and public process.

Circulation and Turn Restrictions

- Public Comments. Concerns about the impact of circulation management and turn restrictions on local access.
- MassDOT Response. Turn lanes require widening a roadway. They also reduce operational efficiency by requiring the addition of more phases to a traffic signal cycle, which increases congestion. The preliminary concept for the Boulevard Alternative proposes the elimination of northbound and southbound left turns at Washington Street; these turning movements have relatively low volumes, and the connections that they provide can also be satisfied at adjacent intersections (via northbound left turns at Somerville Avenue and southbound left turns at Poplar Street). Including left turns from McGrath at Washington Street would also reduce the operational efficiency of the intersection and the corridor in a manner that would make a four-lane boulevard cross-section even more difficult to achieve. Even though these turn restrictions would make local access more circuitous for neighborhood residents, it is more likely to help achieve the goals of a narrower, more livable McGrath corridor.

Based on the study analysis and the feedback received at the May 15, 2013 public meeting, MassDOT recommends advancing the Six-Lane Boulevard Alternative into the environmental review process. MassDOT also recommends consideration of a Four-Lane Boulevard “Road Diet” sub-option that further reduces roadway scale. This sub-option would require additional analysis through the environmental process, comparable to what was completed for the six-lane option for the Grounding McGrath study.

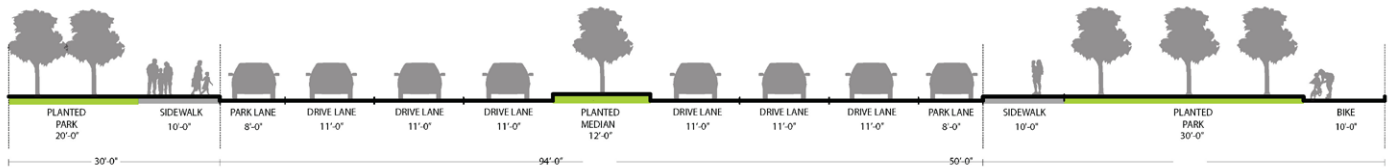
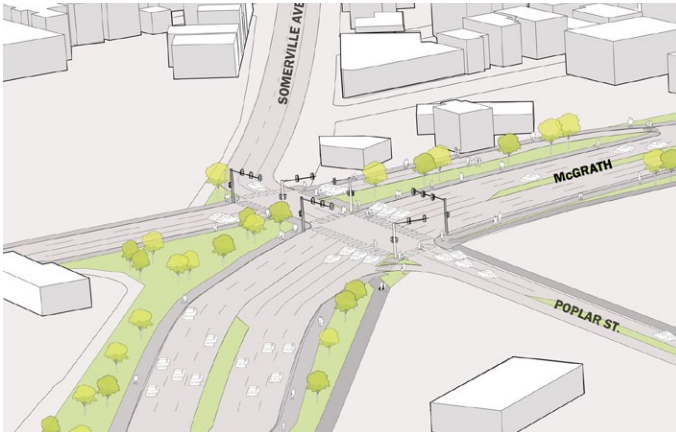


Figure ES-9: Boulevard Recommended Alternative

Somerville Avenue Intersection



Washington Street Intersection

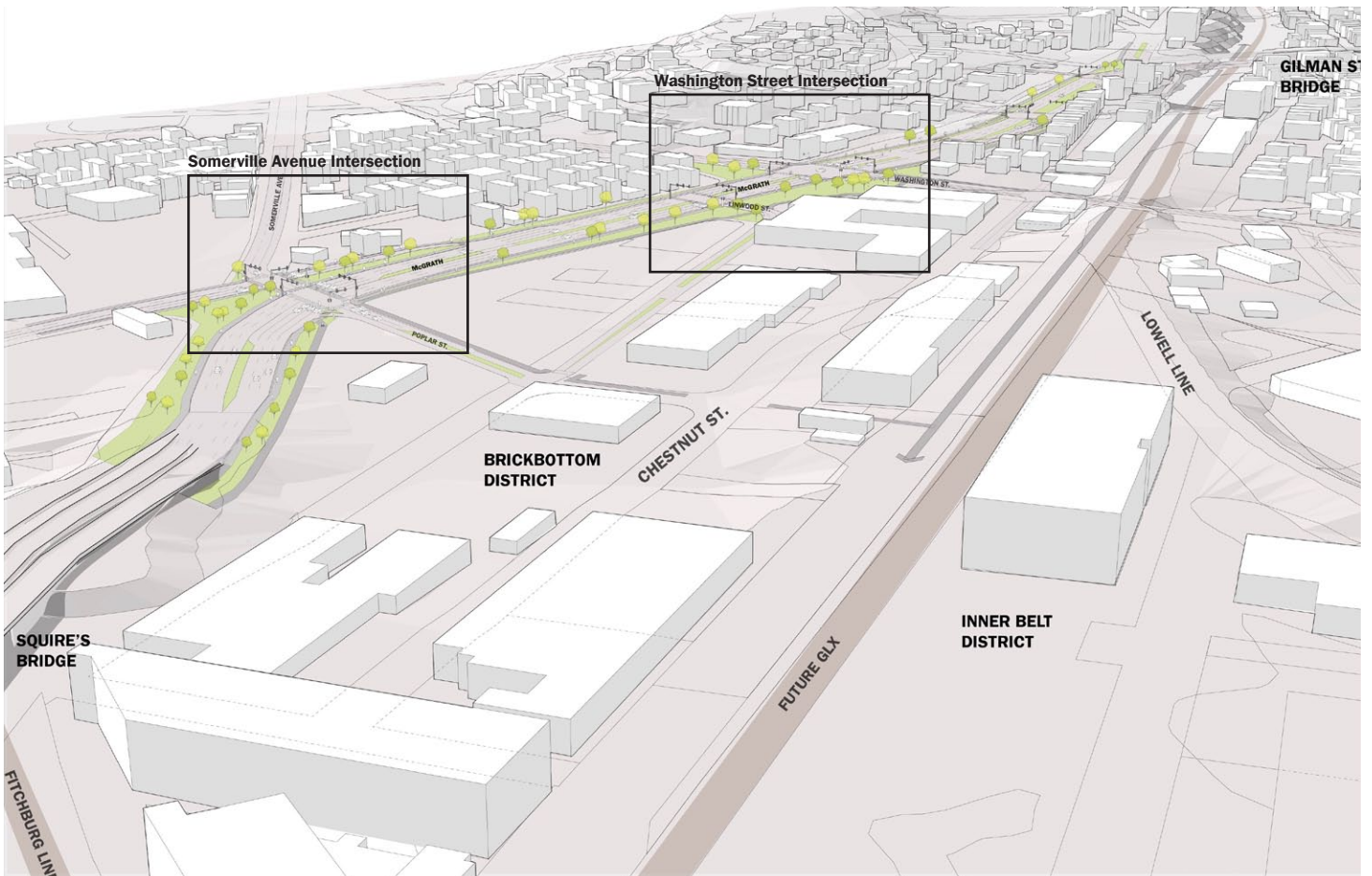
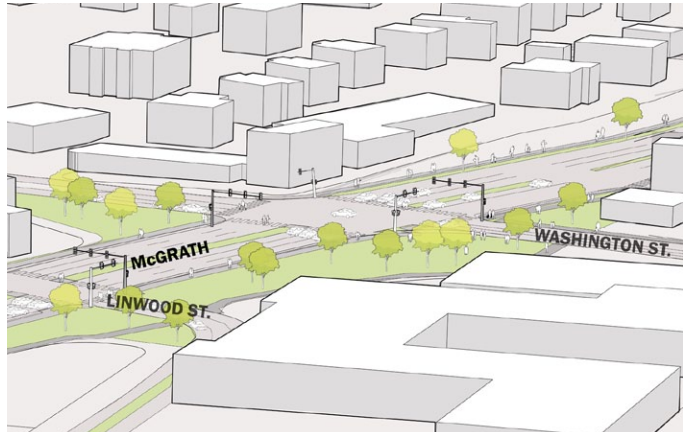
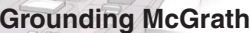


Figure ES-10: Boulevard Alternative Renderings

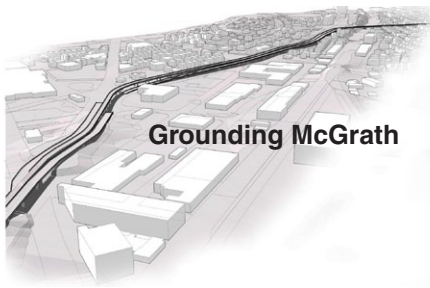


Recommended Long-Term Corridor Alternative – Implementation Plan

The following is a summary of the short-term, medium-term, and long-term steps to be taken in order to pursue implementation of the Boulevard Alternative for the McGrath corridor.

Actions		Primary Responsibility	Supporting Responsibility
Immediate Actions			
I1	Initiate the project development process by submitting Project Needs and Initiation Forms	City of Somerville	MassDOT
I2	Determine level of State and Federal environmental review and permitting necessary to proceed into project development	MassDOT	
I3	Work with the Boston Metropolitan Planning Organization (MPO) to include the project in the next update of the Regional Transportation Plan (RTP)	City of Somerville	
I4	Collect traffic, bicycle and pedestrian data and conduct analyses to assess circulation changes and opportunities resulting from the interim improvements proposed by MassDOT District 4 as part of the ongoing structural repair work	MassDOT	
Medium-Term Actions			
M1	<p>Conduct and complete environmental permitting and preliminary engineering process that should include, but not be limited to, the following:</p> <ul style="list-style-type: none"> Examination of the implications of traffic diversions that could occur on side streets, adjacent neighborhoods, and the regional roadway network including Rutherford Avenue Clarify and integrate plans for the Brickbottom, Inner Belt, and Union Square areas of Somerville and NorthPoint in Cambridge Continue coordination with the Green Line Extension (GLX) project to clarify improvements and ensure proper connectivity Ensure that accommodations for local bus route stops are considered and incorporated as part of the design options 	MassDOT	<p>City of Somerville, Stakeholders, General Public</p> <p>MBTA</p> <p>MBTA</p>

Actions		Primary Responsibility	Supporting Responsibility
	<ul style="list-style-type: none"> Develop potential design refinements at Washington Street based on potential for trip diversion with new IBBB connections (e.g. additional eastbound/westbound lanes; exclusive, channelized right-turn lanes) Coordinate with Federal Highway Administration (FHWA) on implications of changing the McGrath corridor as part of the National Highway System (NHS) Incorporate elements of the Health Impact Assessment recommendations Ensure proper connections to Somerville Community Path to the north and south Develop and integrate a corridor-management plan for curb cuts Examine potential utility upgrades (e.g. underground, relocation, fiber optic, etc.) Select a preferred Boulevard Alternative design option 	MassDOT	Stakeholders
M2	Implement an aggressive Travel Demand Management (TDM) program aimed at reducing single-occupant vehicular trips along the McGrath corridor as well as overall trips generated, particularly in areas targeted for future development.	City of Somerville	MassRIDES
Long-Term			
L1	Complete engineering, design, and permitting	MassDOT	Stakeholders
L2	Coordinate with the Boston Metropolitan Planning Organization (MPO) to secure construction funding through the regional Transportation Improvement Program (TIP)	City of Somerville	Boston MPO



McGrath Corridor Interim Improvements

There are a number of short-term and medium-term recommendations related to physical improvements and policy implementation that should be pursued either independent of the long-term Boulevard Alternative, or else are important interim measures that should be put in place in advance of the Boulevard Alternative and Four-Lane sub-option. There are also a number of short-term and medium-term actions that should be taken in pursuit of the Boulevard Alternative through the environmental permitting, project development, and funding processes.

	Actions	Primary Responsibility	Supporting Responsibility
C1	Improved pedestrian crossings with new crosswalks, signage and signal timing at the following intersections with McGrath Highway <ul style="list-style-type: none"> • Medford Street/Highland Avenue • Washington Street • Medford Street/Somerville Avenue (west of the McGrath corridor) • Medford Street/Somerville Avenue/Poplar Street (east of the McGrath corridor) 	MassDOT	City of Somerville, Stakeholders
U1	Complete McCarthy Viaduct Interim Repairs	MassDOT	City of Somerville, Stakeholders
U2	Continue to Advance Design of Somerville Avenue 'Punch-Through' to McGrath Highway Northbound, and McGrath Southbound Off-Ramp to Somerville Avenue Closure	MassDOT	City of Somerville, Stakeholders
I1	Improve the roadway cross-section, north of the Lowell Line bridge, by adding on-street parking and/or bicycle facilities (Complete Streets approach) <ul style="list-style-type: none"> • Examine removal of the Otis Street pedestrian bridge 		
I2	Explore the feasibility of changes in lane configurations at the intersection of Highland Avenue/Medford Street at the McGrath corridor	MassDOT	City of Somerville, Stakeholders
I3	Promote safe routes of travel for pedestrians and bicycles within the McGrath corridor, such as providing a "best routes" map	City of Somerville	Stakeholders

