

# Chapter 1—Background, Goals, Study Area, and Organization

## 1.1 INTRODUCTION

This report summarizes the findings of the Massachusetts Turnpike Boston Ramps and Bowker Overpass Study. The Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning (OTP) sponsored this study.

Historically, the responsibility for studying key highway and arterial systems was divided between several state organizations, including the Massachusetts Turnpike Authority, the Department of Conservation and Recreation, and the Massachusetts Highway Department. The creation of MassDOT in 2009, which consolidated state transportation agencies and functions, allowed MassDOT to study and develop proposed improvements to all of the interconnected roadway systems in the study area (see Section 1.3 for a description of the study area). This work was undertaken with the cooperation of key stakeholders in the city of Boston and of the public at large.

## 1.2 BACKGROUND

### 1.2.1 The Massachusetts Turnpike Extension Is Built

In 1965, the Massachusetts Turnpike Authority opened a tolled extension of Interstate 90 (I-90) between the Route 128 circumferential highway in Weston and I-93 near South Station. Figure 1-1 shows an early depiction of the proposed Bowker Overpass over I-90. This urban freeway, referred to as the Massachusetts Turnpike Extension, was constructed at considerable expense, and was designed so that all users would need to pay a toll when using this section of the Massachusetts Turnpike.

The requirement that there would be “no free ride” had an important consequence. The only location with sufficient land for a set of toll plazas was in Allston, and all users entering or exiting the Massachusetts Turnpike Extension in the Back Bay area or at I-93 would need to pass through the Allston toll plaza. The Massachusetts Turnpike Extension was built with all of the on-ramps in the downtown area accessing the westbound Turnpike (toward the Allston plaza), and all of the downtown off-ramps accessing the eastbound Turnpike; only



Figure 1-1 – Illustration shows the proposed 1952 plan for an elevated highway that would link the Fenway Neighborhood and Storrow Drive (Bowker Overpass). *Metropolitan District Commission/Boston Globe Archives*

vehicles that already had paid a toll in Allston were allowed to exit. This ramp configuration was adequate as long as the easternmost source of traffic was I-93. The traffic between I-93 and the Back Bay could use Storrow Drive to travel to or from the north, and Berkeley and Herald streets to travel to or from the south.

Figure 1-2 is a 1963 photo showing the view looking east from Charlesgate; in the lower-right corner, a newly completed bridge support for the future Bowker Overpass can be seen.



Figure 1-2 1963 photo showing the view looking east from Charlesgate

### 1.2.2 The CA/T Is Planned

As the Central Artery/Third Harbor Tunnel (CA/T) was being designed, it became clear that the Turnpike Extension would need to serve an expanded set of locations to the east—notably the Seaport District, Logan International Airport, East Boston, and nearby North Shore areas that were being transformed.

In 1997, the management of the Massachusetts Turnpike Extension and the highways being reconstructed as part of the CA/T project was merged, by legislation, into a new entity called the Metropolitan Highway System (MHS), which was under the jurisdiction of the Turnpike Authority. The MHS received toll revenue streams from the Turnpike Extension, Sumner Tunnel, and Ted Williams Tunnel (opened in 1995). With revenues from tolls and other funding sources, the MHS assumed responsibility for completing the CA/T.

### 1.2.3 The Need for Better Connections Increases

The Ted Williams Tunnel was not connected to the Extension for another eight years—it required some of the most challenging construction in the CA/T project. In 1997, anticipating the need to use I-90 to connect Back Bay with new developments to the east, the Turnpike Authority released the Massachusetts Turnpike Boston Extension Ramps Feasibility Study (the Feasibility Study). The Feasibility Study evaluated various combinations of new eastbound entrances and westbound exits of the Turnpike between Chinatown and Kenmore Square. Because of the costs of construction and impacts of introducing new ramps into the fabric of existing neighborhoods, none of the alternatives was considered feasible.

At the time of the Feasibility Study, a convention center in the Seaport District was only under consideration. With the subsequent enactment of required enabling legislation, the new convention center became possible, and the Boston Convention and Exhibition Center (BCEC) opened in 2004. Because many of the hotel rooms required for large conventions and trade shows were still located in the Back Bay, near the Hynes Convention Center, which is smaller than the BCEC, the economic vitality of the Seaport District and of the Back Bay neighborhoods became interdependent. Better connections between the Back Bay and points east were again on the planning agenda.

Given the findings of the Feasibility Study, lower-cost and less-intrusive solutions were sought. A tolled U-turn was constructed at the Allston toll plaza to allow Back Bay vehicles and/or westbound Turnpike vehicles to reverse direction to reach destinations in the Seaport District or Logan Airport. However, using this feature added at least 3.4 miles to any trip from the Back Bay to either of these destinations. The possibility of extending the Silver Line tunnel from South Station to the Boylston Green Line station was also studied, but was not considered for implementation because of high construction costs.

#### **1.2.4 The Origin of This Study**

The subject of new ramps and better access to the urban districts cited above was revisited by MassDOT. MPO staff were retained to perform modeling and to provide other technical support. Initially, the analysis focused on identifying access points for entering the eastbound Massachusetts Turnpike and for exiting the westbound Turnpike at points convenient to Back Bay locations. The scope of the project was later expanded to address regional connectivity issues, such as access to the Turnpike from the Longwood Medical and Academic Area (LMA). The initial results of traffic modeling for the study area were presented at a public meeting at the Boston Public Library. At the public meeting, it became evident that the vicinity of the Bowker Overpass would be an important nexus in the next phase of MassDOT's study. Several factors pointed to this conclusion:

- By including the LMA in the study area, access to the Massachusetts Turnpike near Kenmore Square would become a more important consideration.
- The Bowker Overpass, built at the same time as the Boston Extension, needed significant refurbishment, making reconsideration of its design and function timely.
- Adding new ramps to access the Massachusetts Turnpike would allow a reevaluation of the relationship between traffic on Storrow Drive and traffic on the Massachusetts Turnpike, and the Bowker Overpass and ramps are located where these two roadway systems are closest to each other.

- Public sentiment strongly favored removing the Bowker Overpass and providing new or refurbished at-grade connections between Storrow Drive and the Massachusetts Turnpike.

A revised work program incorporated a number of Bowker-related analyses into the original study.

### **1.2.5 Goals**

Previous studies of Massachusetts Turnpike access and egress issues demonstrated that recommendations from this study should address the following four broad goals:

- Reduce traffic within the study area on the arterials and local streets
- Improve highway connections between Back Bay and crucial locations to the east, including but not limited to the Seaport District and Logan Airport
- Improve regional highway connections to the Longwood Medical Area (LMA) without having an impact on local roads
- Determine locations to reconstruct parkways and related roadway elements to lower capacity standards

These goals are presented in roughly the order of importance. The need to connect the Back Bay with the Seaport District and Logan Airport was anticipated well before development in the Seaport District accelerated. Increased travel demand for the Seaport District and Logan Airport has contributed to traffic congestion on local streets and to slow travel times for workers and visitors in these areas. The inability to use Massachusetts Turnpike to access the LMA efficiently from any direction was appropriately flagged as a related traffic issue. Finally, the use of parkways as urban express highways has been an ongoing concern, and revisiting this in the context of opportunities to reconfigure the Massachusetts Turnpike ramps is now a major goal.

### **1.2.6 Objectives**

This study has a number of practical objectives that support the four goals:

- Identify locations on the Massachusetts Turnpike in Boston where the addition of an eastbound on-ramp or westbound off-ramp would be feasible with respect to design and highway operations
- Estimate the traffic benefits of the feasible new ramps with regard to both reducing travel times between selected origins and destinations and reducing traffic on surface streets
- Evaluate the potential negative impacts of new ramps with respect to pedestrian safety, neighborhood character, and environmental justice populations

- Consider possible modifications of roadway and intersection configurations that would eliminate the Bowker Overpass
- Present a broader picture of possible project elements, along with their positive and negative impacts

All of the study objectives relate to the four goals. However, the goals are not complementary. For example, it might be possible to further an individual goal which best serves the public interest and, in the process, compromise another goal to some degree. This becomes a balancing act between what is necessary for a transportation project and what is in the best interests of the public it serves.

## **1.3 PROJECT STUDY AREA**

The analyses in this report were conducted for locations within the project study area, shown in Figure 1-3. The Massachusetts Turnpike Extension is the central feature crossing Figure 1-3 from west to east. A half-mile buffer on either side of the Massachusetts Turnpike Extension was defined as the area in which environmental justice analyses were performed.

All of the Massachusetts Turnpike Extension mainline segments and ramps that are shown in Figure 1-3 were analyzed. Most of the arterial streets and associated intersections analyzed also appear in Figure 1-3, but several at more distant locations were also studied. Details of demographic areas and traffic analysis locations are presented graphically in subsequent chapters.



**FIGURE 1-3**  
Massachusetts Turnpike Boston Ramps and Bowker Overpass  
Study Area

Massachusetts Turnpike Boston Ramps and Bowker Overpass Study

**massDOT**  
Massachusetts Department of Transportation

## 1.4 PROJECT EVALUATION CRITERIA

Implementing any of the alternatives proposed in this study could have significant, far-reaching effects. Moreover, an impact that is positive as measured by one criterion might be negative with respect to a different criterion. A major challenge in this study is balancing the disparate impacts of potential alternatives.

The criteria are closely related to the quantitative and qualitative measurements with which each alternative was evaluated. The numerous possible impacts that could be associated with an alternative were organized into nine major groups, as shown in Table 1-1. Each of the nine criteria has several associated measurements, which are listed and described in the table.

**TABLE 1-1**  
**Project Evaluation Criteria**

Evaluation Criteria	Measurements
Traffic Operations	<ul style="list-style-type: none"> <li><i>Queues, delays, and level of service</i></li> </ul>
Motorized Circulation and Access	<ul style="list-style-type: none"> <li><i>Vehicle route connectivity, directness, and continuity</i></li> <li><i>Travel time</i></li> </ul>
Transit Circulation and Access	<ul style="list-style-type: none"> <li><i>Changes in access for transit passengers</i></li> <li><i>Physical impacts to proposed transit</i></li> </ul>
Nonmotorized Circulation and Access	<ul style="list-style-type: none"> <li><i>Bicycle and pedestrian access</i></li> <li><i>Pedestrian delay</i></li> </ul>
Safety	<ul style="list-style-type: none"> <li><i>Vehicle crashes</i></li> <li><i>Changes in bicycle and pedestrian route separation</i></li> <li><i>Changes in emergency-vehicle access</i></li> <li><i>Highway ramp level of service and geometrics</i></li> </ul>
Neighborhood Impacts	<ul style="list-style-type: none"> <li><i>Noise and traffic diversions</i></li> <li><i>Neighborhood cohesion and aesthetics</i></li> </ul>
Environmental Impacts	<ul style="list-style-type: none"> <li><i>Air quality</i></li> <li><i>Parks, open space, and wetlands</i></li> <li><i>Historic districts and sites</i></li> <li><i>Hazardous-material sites</i></li> </ul>
Business Considerations	<ul style="list-style-type: none"> <li><i>Truck circulation and access</i></li> <li><i>Parking impacts</i></li> <li><i>Access to existing and future development sites</i></li> <li><i>Physical impacts to development sites and air-rights locations</i></li> </ul>
Cost	<ul style="list-style-type: none"> <li><i>Total construction cost</i></li> </ul>

## 1.5 PUBLIC PARTICIPATION PROCESS

### 1.5.1 Project Working Group

A Working Group representing state, regional, and local transportation planners, land use planners, and operating agencies was convened for this project. Working Group members included:

- Massachusetts Department of Transportation
- Boston Transportation Department
- Boston Redevelopment Authority
- Central Transportation Planning Staff
- Metropolitan Area Planning Council

### 1.5.2 Study Advisory Group

The public at large was represented in the planning process by the Study Advisory Group (SAG). The group was composed of several dozen government, institutional, and neighborhood-based stakeholders, including:

Governmental Stakeholders and Organizations:

- The five Working Group organizations
- Massachusetts state representatives and senators
- City of Boston
- Boston City Council members
- City of Cambridge
- Town of Brookline
- Massachusetts Department of Conservation and Recreation
- Massachusetts Bay Transportation Authority
- Massachusetts Port Authority

Other Stakeholder Organizations:

- A Better City
- Allston Brighton Community Development Corporation
- Asian American Civic Association
- Asian Community Development Corporation
- Audubon Circle Neighborhood Association
- Back Bay Association
- Bay Village Neighborhood Association
- Beacon Hill Civic Association
- Blackstone Franklin Square Neighborhood Association
- Boston Red Sox

- Boston University
- Chester Square Area Neighborhood Association
- Chinatown Gateway Coalition
- Chinatown Main Street
- Chinatown Neighborhood Council
- Chinatown Resident Association
- Ellis South End Neighborhood Association
- Fenway Alliance
- Fenway Civic Association Inc.
- Fenway Community Development Corporation
- Fort Point Neighborhood Alliance
- Kenmore Business Association
- Leather District Neighborhood Association
- MASCO Inc.
- Neighborhood Association of the Back Bay
- Newbury Street League
- Old Dover Neighborhood Association
- St. Botolph Neighborhood Association
- Storrow Drive Advisory Committee
- The Chinatown Coalition
- Washington Gateway Main Street
- Worcester Square Neighborhood Association

### **1.5.3 Public Informational Meetings**

Informational meetings were held when key milestones in the project had been reached in order to give the public with an opportunity to provide suggestions. Summaries and presentation materials of all of the study's meetings are in Appendix A.