

Chapter 10—Summary and Conclusions

10.1 SUMMARY

This section presents a summary of the analysis performed for the Massachusetts Turnpike Back Bay Ramps and Bowker Overpass Study. The purposes of the study were to 1) evaluate the feasibility of providing additional access to the Massachusetts Turnpike Boston Extension to improve the flow of traffic to Back Bay; and 2) develop alternatives to replace the existing Bowker Overpass. This study evaluated each of the purposes separately to meet the overall goals and objectives of the study.

10.1.1 Goals and Objectives

This study has four main goals that were developed through previous study efforts and the associated public process:

- 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

Practical objectives for this study were developed to support the four goals:

- Identify locations on I-90 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 potential negative impacts of new ramps with respect to pedestrian safety, neighborhood character, and environmental justice
- Consider possible 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

10.2 ALTERNATIVES

10.2.1 Massachusetts Turnpike Back Bay Ramp Alternatives

At the beginning stages of the study process to develop a new ramp, seven ramp alternatives were partially developed based on previous studies. The initial screening provided four alternatives that were selected to be further developed and evaluated:

- Back Bay Alternative 1: New Westbound Off-Ramp to Berkeley Street
- Back Bay Alternative 2: New Westbound Off-Ramp to Trinity Place/Stuart Street
- Back Bay Alternative 3: New Westbound Off-Ramp to Brookline Avenue
- Back Bay Alternative 4: New Eastbound On-Ramp from the Bowker Overpass

A summary of each alternative's benefits and issues/impacts is provided in Table 10-1.

10.2.2 Bowker Overpass Alternatives

Four alternatives were "sketched" out in response to many organizations that had shown interest in altering or removing the Bowker Overpass. These preliminary alternatives have been further refined to meet this study's goals. The four final Bowker Overpass alternatives are:

- Bowker Overpass Alternative 1: Bowker Overpass Removed
- Bowker Overpass Alternative 2: Bowker Overpass At-Grade
- Bowker Overpass Alternative 3: New Regional Access
- Bowker Overpass Alternative 4: New Regional and Local Access

A summary of each alternative's benefits and issues/impacts is provided in Table 10-2.

TABLE 10-1
Massachusetts Turnpike Back Bay Alternatives

Alternatives	Benefits	Issues/Impacts
Alternative 1: New Westbound Off-Ramp to Berkeley Street	<ul style="list-style-type: none"> • Direct access from I-93, I-90, Logan Airport, and South Boston to the Back Bay 	<ul style="list-style-type: none"> • Closure of existing I-90 Eastbound on-ramp at Arlington Street • Reconstruction of Arlington Street and Tremont Street bridge structures over the Massachusetts Turnpike in order to accommodate proposed deceleration lane and off-ramp • The three existing signalized intersections would be reconstructed • Marginal Road would be reduced to a single lane as it approaches Tremont Street • On-street parking on Marginal Road (Massachusetts Turnpike side) would be impacted because of widening for proposed off-ramp • Closure of Cortes Street to through traffic
Alternative 2: New Westbound Off-Ramp to Trinity Place/Stuart Street	<ul style="list-style-type: none"> • Direct access from I-93, I-90, Logan Airport, and South Boston to the Back Bay 	<ul style="list-style-type: none"> • Closure of existing I-90 Eastbound on-ramps at Arlington Street and Clarendon Street • Reconstruction of Berkeley Street, Columbus Avenue, and Clarendon Street bridge structures over Massachusetts Turnpike in order to accommodate proposed deceleration lane and off-ramp • Impacts to the Frieda Garcia Park • Major reconstruction of the Hancock Garage to accommodate off-ramp tunnel to Trinity Place
Alternative 3: New Westbound Off-Ramp to Brookline Avenue	<ul style="list-style-type: none"> • Direct access from I-93, I-90, Logan Airport, and South Boston to the Fenway area and LMA 	<ul style="list-style-type: none"> • Potentially could require closure of existing I-90 Eastbound on-ramp at Massachusetts Avenue because of short weaving distance • Newbury Street would require reconstruction and reduction of available on-street parking • Newbury Street would no longer be a connection through to Brookline Avenue • Currently the Hotel Commonwealth is expanding its parking area; proposed ramp would impact access to the hotel • New off-ramp would impact access to 657 and 667 Boylston Street properties (buildings located north of Newbury Street adjacent to proposed ramp) • New Brookline Avenue signalized intersection located approximately 150 feet south of Kenmore Square intersection would impact Kenmore Square traffic operations
Alternative 4: New Eastbound On-Ramp from the Bowker Overpass	<ul style="list-style-type: none"> • Direct access from LMA and Fenway to I-90, I-93, Logan Airport, and South Boston 	<ul style="list-style-type: none"> • Major reconstruction and shift of Massachusetts Turnpike to the north • Newbury Street, east of the Bowker Overpass, would no longer connect to Charlesgate East • Severe impacts to Newbury Street and the adjacent properties • Impacts to the new addition at the Hotel Commonwealth

**TABLE 10-2
Bowker Overpass Alternatives**

Alternatives	Benefits	Issues/Impacts
Alternative 1: Bowker Overpass Removed	<ul style="list-style-type: none"> The reconstructed bridge structure over the Massachusetts Turnpike and reconstructed Charlesgate East and West provide an opportunity to improve pedestrian and bicycle accommodations Removal of the Bowker Overpass allows for an increase in the park's open space 	<ul style="list-style-type: none"> Still does not provide for improved access to the Charles River and pathways Removal of the overpass requires that Charlesgate East and West carry a significant increase in traffic volumes Increase in traffic volumes on Charlesgate East and West would significantly impact the adjacent residential buildings Increase in Charlesgate traffic volumes would impact pedestrian east/west flows Decrease in available traffic capacity from Storrow Drive over the Massachusetts Turnpike would cause traffic diversions to other streets, specifically Kenmore Square
Alternative 2: Bowker Overpass At-Grade	<ul style="list-style-type: none"> The reconstructed bridge structure over the Massachusetts Turnpike and reconstructed Charlesgate East and West provides an opportunity to improve pedestrian and bicycle accommodations Moves the higher traffic volumes away from the adjacent residences 	<ul style="list-style-type: none"> New at-grade roadway creates a new east/west barrier for pedestrians and bicyclists New at-grade roadway increases the impact to the park's open space Still does not provide for improved access to the Charles River and pathways Increases delays and conflicts to vehicles, pedestrians, and bicyclists with the introduction of three new signalized intersections
Alternative 3: New Regional Access	<ul style="list-style-type: none"> The reconstructed bridge structure over the Massachusetts Turnpike provides an opportunity to improve pedestrian and bicycle accommodations New regional access from the Massachusetts Turnpike is provided Removal of the Bowker Overpass allows for an increase in the park's open space 	<ul style="list-style-type: none"> Shifting the Massachusetts Turnpike northward significantly impacts the properties along Newbury Street Requires removal of the existing Massachusetts Avenue westbound on-ramp Still does not provide for improved access to the Charles River and pathways Increases diverted traffic from Storrow Drive to other routes
Alternative 4: New Regional and Local Access	<ul style="list-style-type: none"> The reconstructed bridge structure over the Massachusetts Turnpike provides an opportunity to improve pedestrian and bicycle accommodations New regional access from the Massachusetts Turnpike is provided Removal of the Bowker Overpass allows for an increase in the park's open space Realignment of Storrow Drive increases the park's open space and provides an opportunity to improve access to the Charles River and its multi-use pathway Maintains access to the Back Bay, Fenway, and LMA areas from Storrow Drive 	<ul style="list-style-type: none"> Shifting the Massachusetts Turnpike northward significantly impacts the properties along Newbury Street Requires removal of the existing Massachusetts Avenue westbound on-ramp Constructs two new signalized intersections on heavily traveled Massachusetts Avenue Increases diverted traffic from Storrow Drive to Massachusetts Avenue and Kenmore Square

10.3 SCREENING EVALUATION

The Back Bay Ramp and Bowker Overpass alternatives were compared to the No-Build scenario to assess their relative benefits and drawbacks. The alternatives were screened according to nine criteria:

- Traffic
- Motorized circulation and access
- Transit circulation and access
- Non-motorized circulation and access
- Safety
- Neighborhood impacts
- Environmental impacts
- Business considerations
- Cost

For each measure, an alternative was assigned a +1, 0, or -1 according to how it compared to the 2035 No-Build conditions (Tables 9-1 and 9-2). For example, if the analysis showed that an alternative would increase vehicle emissions by more than 0.2% compared to the emissions that are predicted to occur in 2035 if no alternative is pursued, then this would be considered a negative impact and the alternative would be assigned -1 for that measure. If the change from the No-Build condition was relatively insignificant, then the alternative would be given a 0. Then each criterion then was given a positive, neutral, or negative rating based on the sum of the measures within each criterion. Table 10-3 provides a summary for each of the alternatives except for cost.

Overall, none of the Back Bay Ramp alternatives or the Bowker Overpass alternatives ranked positively. Only Back Bay Ramp Alternatives 1 and 3 had an overall rank of neutral. The rest of the alternatives had overall ranks of negative.

10.4 CONCLUSIONS

As this study proceeded from initial public meetings to this final report, staff reached a number of conclusions by carefully reviewing the evaluation results, and considering the communities' input at public meetings and their written comments:

- Based on the study and evaluation of the Back Bay Ramp and Bowker Overpass alternatives, there is no single alternative that is recommended for further study or implementation. As the evaluation indicates, there are no alternatives, as presently developed and evaluated, that meet the study's goals and objectives.
- The estimated construction cost of the alternatives cannot be justified, since no one alternative for the Back Bay Ramps or the Bowker Overpass satisfies the goals of the study.

**Table 10-3
Evaluation Summary**

Evaluation	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Massachusetts Turnpike Back Bay Ramps				
Traffic	Neutral	Neutral	Neutral	Neutral
Motorized Circulation and Access	Positive	Neutral	Positive	Positive
Transit Circulation and Access	Negative	Negative	Negative	Neutral
Non-Motorized Circulation and Access	Neutral	Neutral	Negative	Neutral
Safety	Neutral	Negative	Negative	Neutral
Neighborhood Impacts	Neutral	Neutral	Positive	Neutral
Environmental Impacts	Positive	Positive	Positive	Negative
Business Considerations	Negative	Negative	Negative	Negative
Overall	Neutral	Negative	Negative	Negative
Bowker Overpass				
Traffic	Negative	Negative	Negative	Negative
Motorized Circulation and Access	Negative	Neutral	Neutral	Positive
Transit Circulation and Access	Neutral	Neutral	Neutral	Neutral
Non-Motorized Circulation and Access	Negative	Negative	Negative	Negative
Safety	Negative	Negative	Negative	Negative
Neighborhood Impacts	Neutral	Positive	Positive	Positive
Environmental Impacts	Neutral	Negative	Negative	Negative
Business Considerations	Neutral	Neutral	Neutral	Neutral
Overall	Negative	Negative	Negative	Negative

- None of the proposed Bowker Overpass alternatives provided a suitable direct replacement to serve the regional traffic issue and meet the study’s goals and objectives. Alternative 2, which replaces the overpass with at-grade roadways, creates major traffic issues and significantly affects the park’s open space. The other alternatives create traffic diversions to other roadways and neighborhoods—in some cases, with a significant construction cost.
- Analysis of a recent MassDOT project at the Allston I-90 Interchange was not part of this study. Any future Back Bay Ramps or Bowker Overpass studies should include the proposed realignment of that interchange and potential impacts to the Massachusetts Turnpike and Bowker Overpass.