

8 SUMMARY OF RECOMMENDATIONS AND IMPLEMENTATION PROCESS

This chapter summarizes this study's recommendations regarding transportation improvements in the Braintree Split area and gives the processes by which proposed transportation improvements may be implemented.

8.1 Recommendations

Table 9 summarizes the recommended improvements and estimated costs of each improvement. Their locations are indicated in white on the accompanying map, which also give location numbers. The numbers are consistent with the numbers used to designate these locations throughout this report. For detailed descriptions of the recommended improvements, please see Chapter 7.

Overview Map



TABLE 9
Summary of Recommendations

Location	Proposed Improvement(s)	Estimated Cost
#1	<ul style="list-style-type: none"> Lengthen existing deceleration lane to provide more storage room and sufficient length for exiting vehicles to change lanes. Install signs on the Route 3 South connector instructing motorists exiting onto Route 37 to be in the rightmost lane. 	\$1.0 million
#2	<ul style="list-style-type: none"> Restrict the existing on-ramp to traffic that is heading to Route 3 South, the Burgin Parkway, or Washington Street. Construct a double left-turn bay at the signalized ramp–arterial junction for use by traffic proceeding to the Expressway to access the south side on-ramp. Install new signs or modify existing signs on Route 37 to guide motorists to the appropriate ramps. 	\$1.5 million
#3	<ul style="list-style-type: none"> Install real-time sensors for queue detection, and overhead variable message signs to inform and warn motorists to reduce speed in advance of the downstream traffic queue that is obscured by the horizontal curvature of the roadway. 	\$0.5 million
#4	<ul style="list-style-type: none"> Move the Burgin Parkway and Washington Street northbound on-ramp connector to the Expressway further south. Create a new ramp connector with a right full auxiliary lane to lengthen the weaving distance over which HOV-bound ramp traffic could change lanes to access the HOV lane. Install new signs to direct HOV-bound traffic to the HOV lane. 	\$1.5 million
#5	<ul style="list-style-type: none"> Lengthen the acceleration lane for the southbound on-ramp connecting Furnace Brook Parkway to the Expressway. Examine the feasibility of a long-term solution: extending the HOV lane on the Southeast Expressway to Route 3 South and to I-93 toward Route 24. These extensions would remove the weave and merge of southbound HOV traffic heading to Route 3 South and to I-93 toward Route 24. 	\$0.5 million (Not including the feasibility study)
#6	<ul style="list-style-type: none"> The Burgin Parkway Viaduct project in Quincy, already in the design stages, is underway; it addresses this problem. 	\$18.0 million, programmed 2006
#7	<ul style="list-style-type: none"> Add a southbound travel lane (auxiliary lane) on Route 3 South, beginning at the Burgin Parkway on-ramp and possibly ending after the exit ramp at the Union Street interchange. 	\$2.5 million
#8	<ul style="list-style-type: none"> Lengthen the acceleration lane for the on-ramp from Burgin Parkway and Washington Street to the Route 3 South connector, which connects Route 3 South with I-93 southbound. 	\$0.5 million
#9	<ul style="list-style-type: none"> Upgrade the northbound acceleration lane into an auxiliary lane, possibly ending after the exit ramp at interchange 19 (Burgin Parkway/MBTA Quincy Adams Station). Upgrade the southbound deceleration lane into an auxiliary lane possibly ending after the exit ramp at interchange 17 (Union Street). Provide of a right-turn bypass lane or slip lane at the southbound ramp–rotary junction for use by the high volume of right-turn traffic. 	\$5.5 million
#10	<ul style="list-style-type: none"> Add a travel lane on I-93 southbound, beginning south of the Route 37 interchange and ending at the diverge point to Route 24. Reconfigure the lane assignment at the diverge point of I-93 and Route 24 to provide two travel lanes to the two-lane connector ramp connecting to Route 24. Widen the merge point of Route 24 southbound to receive the four travel lanes from the connecting ramps. Install new signs or modify existing signs to guide motorists to Route 24. 	\$7.0 million
#11	<ul style="list-style-type: none"> The I-93/Route 37 traffic improvements that address this problem are already in either the planning or design stage. 	Not Available

8.2 Implementation Process

In general, all the recommended improvements are located on roadways administered by MassHighway. Therefore, MassHighway is responsible for the implementation of any of these improvements. It would follow standard process, outlined below, that any proponent of a roadway improvement is required to follow. As described, the process provides for the participation of the general public, community representatives, and other agencies. The projects would be eligible to be paid for with state or federal funds.

The following process description is based on Chapter 2 of the 2005 MassHighway Design Guidebook. The text below borrows heavily from that document.

Need Identification

For each of the locations at which an improvement is to be implemented MassHighway will lead an effort to define the problem, establish project goals and objectives, and define the scope of the planning needed towards implementation. To that end, it will have to complete a Project Need Form (PNF), which states in general terms the deficiencies or needs related to the transportation facility or location. The PNF will document the problems and explain why corrective action is needed. The information defining the need for the project will be drawn, primarily, perhaps exclusively, from the present report. Also, at this point in the process, MassHighway will meet with potential participants, such as the Boston Region Metropolitan Planning Organization (MPO) and community members, to allow for a proactive, informal review of the project.

The PNF will be reviewed by MassHighway's Project Review Committee (PRC) and the MPO. The PRC includes the Chief Engineer, each District Highway Director, and representatives of the Project Management, Environmental, Planning, Right-of-Way, Traffic, and Bridge departments and the Capital Expenditure Program Office (CEPO). The outcome of this step is a determination of whether the project requires further planning, whether it is already well supported by prior planning studies and, therefore, able to move forward into design, or whether it should be dismissed from further consideration.

Planning

This phase will likely not be required for the implementation of the improvements proposed under this planning study, as this planning report should actually constitute the outcome of this step. However,

in general, the purpose of this implementation step is for the project proponent to identify issues, impacts, and approvals that may need to be obtained, so that the subsequent design and permitting processes are understood. The level of planning needed will vary widely, based on the complexity of the project. Typical tasks include: define existing context, confirm project need, establish goals and objectives, initiate public outreach, define project, collect data, develop and analyze alternatives, make recommendations, and provide documentation. Likely outcomes include consensus on project definition to enable it to move forward into environmental documentation (if needed) and design, or a recommendation to delay the project or dismiss it from further consideration.

Project Initiation

At this point, the proponent, MassHighway, fills out for each improvement a Project Initiation Form (PIF), which is reviewed by the PRC and the MPO. The PIF documents the project type and description, summarizes the project planning process, identifies likely funding and project management responsibility, and defines a plan for interagency and public participation. First the PRC reviews and evaluates the proposed project based on the Executive Office of Transportation's statewide priorities and criteria. If the result is positive, MassHighway moves the project forward into design and programming review by the MPO. The PRC may provide a Project Management Plan to define roles and responsibilities for subsequent steps. The MPO review includes project evaluation based on the MPO's regional priorities and criteria. The MPO may assign a project evaluation criteria score, possible Transportation Improvement Program (TIP) year, tentative project category, and tentative funding category.

Environmental, Design, and Right-of-Way Process

This step has four distinct but closely integrated elements: public outreach, environmental documentation and permitting (if required), design, and right-of-way acquisition (if required). The outcome of this step is a fully designed and permitted project ready for construction. However, a project does not have to be fully designed in order for the MPO to program it in the TIP.

Programming

Programming, which typically begins during design, can actually occur at any time during the process from planning to design. In this step, which is distinct from project initiation, where the MPO receives preliminary information on the proposed project, the

proponent requests that the MPO place the project in the region's TIP. The MPO considers the project in terms of regional needs, evaluation criteria, and compliance with the regional Transportation Plan and decides whether to place it in the draft TIP for public review and then in the final TIP.

Procurement

Following project design and programming, MassHighway publishes a request for proposals. It reviews the bids and awards the contract to the lowest qualified bidder.

Construction

After a construction contract is awarded, MassHighway and the contractor will develop a public participation plan and a management plan for the construction process.

Project Assessment

The purpose of this step is to receive constituents' comments on the project development process and the project's design elements. MassHighway can apply what is learned to future projects.

APPENDIX A

Public Participation

A.1 Public Comments

A.1.1 Metropolitan Area Planning Council

A.1.2 Town of Braintree

A.2 CTPS Responses to Public Comments of Draft Report

A.3 Attendance at Advisory Task Force Meetings

A.1 Public Comments

Metropolitan Area Planning Council

(Unedited; submitted by Jim Gallagher and William Clark)

Style and Language

1. The highly visual and graphic format for the report is easy to understand and a very appealing way to illustrate complex problems. This is an excellent format, which is appropriate for many CTPS documents.

2. “Boston MPO/Metropolitan Planning Organization”
The correct name is the “Boston Region MPO.”

3. “Transportation Concerns” (in the Executive Summary, “Internal Concerns,” “External Concerns,” and other places later in the report)

Concerns are things that people are worried about (“proponents of the study expressed concerns”). The point of this study is to investigate these concerns. Seth/CTPS has done this, and determined that many of these concerns can be verified through objective, transparent measures. As a result, congestion, safety, and mobility problems have been identified. Problems are what the recommended improvements are designed to fix. Please do not use concerns (or issues, or other euphemisms) when you mean problems.

4. In the Transportation Concerns section of the ES, the second sentence (“Another example,” etc.) which is supposed to be about external bottlenecks, is actually citing an internal one. More external bottlenecks follow in the next paragraph, but there is no place in the ES where actual problems within the study area are described. Since there is an extensive list of recommendations in the document, presumably responding to identified problems, there should be an equally extensive list of problems in the ES.

5. “Additional Improvements Recommended”
“The improvements that were developed with the participation of the MassHighway, MBTA, and the study’s Advisory Task Force,” etc. We don’t know about MassHighway or the MBTA, but the Advisory Task Force did not participate in the development of the improvements, we merely commented on those that were developed. The Task Force should have a role in recommending improvements (more on that below).

“The improvements that were recommended by this study.” Studies cannot recommend improvements. The Task Force, MassHighway, MBTA, CTPS, or Seth can. There are other places in the document where this same construct is used – please assign responsibility for actions to a specific organization or individual, not to a “study,” which has no ability to act.

6. None of the improvements proposed are major redesigns or additions. CTPS has said at meetings that the purpose of this study is to focus on operational improvements – that’s a perfectly appropriate way to proceed, but it’s not mentioned in the ES, maybe not anywhere in the document. Someone reading the document will likely expect a discussion of “big ticket” improvements, even if it is only to say that they weren’t considered, and may be evaluated in a later study.

7. “Summary”

There doesn’t need to be a summary of the Executive Summary. To the extent there is new information here it can be characterized as “Benefits of the Improvements.” And there is need for a “Next Steps” section in the ES.

8. “Chapter 3, Current Transportation, 3.1.4 Traffic Queues”

It is unclear as written how far these queues extend since different segments are discussed separately. For example, for the PM peak, the southbound segments from Granite Street to the Split (on the Southeast Expressway) and Union Street and the Split (on Route 3) are both listed with queue (problems?). We read this as one queue extending from Union Street to Granite Street. A graphic here might be helpful.

9. “Chapter 6, Planned and Proposed Improvements”

There needs to be a distinction between programmed, planned, and proposed. Service changes planned by the MBTA, projects programmed in the TIP, or being funded through private sources, local Chapter 90 funds, or in other concrete ways should be identified. Other projects planned in the latest Regional Transportation Plan should be noted, along with the time period they have been assigned. All other projects are “conceptual ideas” and their future funding uncertainty should be made clear. Information listing the proponent of each project or idea would also be helpful.

Content

1. The weave by HOV vehicles exiting the HOV lane SB and heading towards I-93 was identified as a problem in the study. However, no improvement was recommended. One suggested by MAPC was moving the end of the HOV lane north, by whatever amount was feasible, to allow that much additional space for vehicles to complete the weave. Adriel Edwards, of EOT Planning, volunteered to check with MassHighway on the feasibility of moving this exit point. If acceptable, that recommendation should be communicated to other Task Force members, and included in this draft if there is consensus.

A second MAPC recommendation for this “problem” was the evaluation of a flyover ramp to replace this move. We believe this should be one of the Next Steps evaluated in the follow-up to the current study.

2. At location #2, an alternative to the double left-turn lane recommended by CTPS was suggested by MAPC. The existing left turn to I-93 would be replaced by a right turn to a new climbing lane/on-ramp constructed between the two barrels of I-93. This would result in a left-side on-ramp providing access to the Expressway northbound and would eliminate the dangerous weave that is currently required. If there has been an evaluation of this alternative, it should be included in this document, as either a recommendation or as Not Recommended in Appendix B. Otherwise it should be added to the list of improvements to be evaluated in Next Steps. [*Appendix B is now Appendix C in the final report.*]

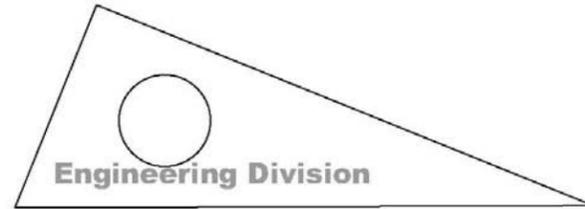
3. In general, while weave problems were identified in many locations of the study area, the only recommended solution was at location 2 above. In an operational study like this one, approaches to minimize weaving, which would include providing better information on appropriate lanes and separating thru from weaving trips, should also be explored. For example, signs for the Route 24 exit could be posted further east on I-93 and could announce the need to get in the left lanes. Other potential

recommendations along these lines should be developed and discussed between the DRAFT and FINAL versions of this document.

4. Although “access to transit” is listed as a “concern,” there is no mention that the parking garages at the Braintree and Quincy Adams Red Line stations are full (nor any mention in the text about Braintree commuter rail). If a study has not already been completed at CTPS for the MBTA, one obvious Next Step (Task Force Recommendation) would be a study of the impact on future traffic in the Split of adding additional parking at these two locations (at least).
5. In the Planned and Proposed Improvements chapter a number of transit and highway projects are listed which could have significant impacts on the volumes and perhaps on the safety problems in the Split. It is not clear from the document whether these impacts and needs for these projects were considered concurrently with the recommended improvements. If an analysis has been done for some or all of these projects showing they will have benefits for the Split, you should say so. If the synergistic impacts are unknown, then this should be identified as another task under Next Steps.
6. In general, we support the lengthening of acceleration and deceleration lanes and the additional warning and information signs but do not support adding a fourth travel lane by converting the breakdown lane. We would like additional discussions (as part of the community and subregional consultations below) of the needs and alternatives before taking a position on the specific recommendations at each location.
7. We do not support further study of Route 24 south as the follow-up to this study. While the Route 24 lane reduction from 4 to 3 lanes certainly contributes to backups on I-93 and perhaps even at the Split, one possible solution has already been identified in this study. Yet many of the potential “big ticket” items that might help directly in the Split have not yet been evaluated. We believe a follow-up to this Braintree Split study should be an evaluation of transit/trip reduction strategies, flyovers, and other methods to separate currently weaving traffic, alternatives mentioned above, and other major design changes that will improve safety and congestion within the Split (in combination with changes outside the Split, if appropriate). This study should employ the regional model to study the potential for diversions, as well as building on the simulation work already begun.
8. We also believe that there should be additional consultation with the members of the Task Force about the recommendations of the study. We believe that the presentation you gave at the last Task Force meeting was a good beginning in understanding how the recommendations are reasonable responses to the identified problems, and we believe that many of the recommendations presented are good ones. However, only two previous Task Force meetings were held and many questions remain to be asked. The Task Force communities need additional internal discussions, and the MAPC SSC and TRIC subregions need the promised presentations and consultations. We believe this consultation can take place after the DRAFT document has been released, with the understanding that a FINAL document will be produced that reflects these comments, and (hopefully) a consensus from the Task Force on Next Steps. The follow-up study currently listed in the UPWP should reflect this consensus on Next Steps.

Ultimately, we all have the goal of moving some/all of these recommendations to implementation. The best way to insure that these recommendations don't just sit on a shelf is to build widespread support and an enthusiastic proponent. Even if MassHighway is the proponent, they will want community support before they proceed too far. Before we finish up with this study and these recommendations there needs to be an effort to develop this support. We believe that should be the first Next Step, even before the big-ticket items are evaluated.

Town of Braintree



Robert P. Campbell, PE, Town Engineer
Rcampbell@townofbraintreegov.org
John J. Morse, Assistant Town Engineer
Jmorse@townofbraintreegov.org

July 5, 2005

Mr. Seth Asante, Project Manager
Central Transportation Planning Staff
10 Park Plaza, Suite 2150
Boston, MA 02116

RE: Braintree Split Study

Dear Mr. Asante:

As a member of the Advisory Task Force for the "Braintree Split" study, I really appreciate the amount of information that your staff has gathered and your efforts to compile a study that can be a basis for prioritizing work throughout the region. And the decision to "package" the projects as "safety improvements" and "traffic flow improvements" meshes well with the Governor's Fix It First initiative. However, there are still two things that I've mentioned before but would like to re-iterate:

1. Given the high number of crashes at the Union Street / Route 3 interchange (ranked number 34 of the High 1000 crash locations statewide) the improvements at that location should be classified as "safety" rather than "traffic flow". This distinction may be the difference between what gets built expeditiously and what is delayed or maybe not built at all.
2. I am skeptical about the long term benefit of the new signalized dual left turn proposed at location #2. It is hard to imagine fitting any more turning lanes into that stretch of Granite Street and hard to believe that an underpass to get across to the left lane would not be more beneficial.

On a final note, the study results for the "Build" situation should emphasize that it is assumed that the recommended projects not only inside the study area but those external to it as well have been "built." With such high percentages of drive alone trips, transit extension to New Bedford and Fall River should take a great deal of pressure off of the Braintree Split, perhaps even more than is accounted for in the study.

Conservation and Planning Director Peter Lapolla is concerned about the safety aspects of the ever-increasing trend toward converting breakdown lanes to peak-period travel lanes. He is particularly concerned about lack of shoulder areas for emergency responders trying to get to incident scenes.

No other comments were communicated to me.

I look forward to the implementation of the projects scoped in this study and hopefully these changes that I and others have recommended.

Very truly yours,

Robert P. Campbell, P.E.
Town Engineer

CC: John McMahon, Director of Public Works
Sue Kay, Executive Secretary
Peter Lapolla, Dir. of Conservation and Planning

A.2 CTPS Responses to Public Comments on the Draft Report

Source	Comment (unedited)	Response
MAPC	Style and Language	
	1. The highly visual and graphic format for the report is easy to understand and a very appealing way to illustrate complex problems. This is an excellent format, which is appropriate for many CTPS documents.	Thank you.
	2. “Boston MPO/Metropolitan Planning Organization” The correct name is the “Boston Region MPO”.	The final report will reflect this correction.
	3. “Transportation Concerns” (in the Executive Summary, “Internal Concerns”, “External Concerns” and other places later in the report) Concerns are things that people are worried about (“proponents of the study expressed concerns”). The point of this study is to investigate these concerns. Seth/CTPS has done this, and determined that many of these concerns can be verified through objective, transparent measures. As a result, congestion, safety, and mobility problems have been identified. Problems are what the recommended improvements are designed to fix. Please do not use concerns (or issues, or other euphemisms) when you mean problems.	The final report will reflect this suggestion.
	4. In the Transportation Concerns section of the ES, the second sentence (“Another example,” etc.), which is supposed to be about external bottlenecks, is actually citing an internal one. More external bottlenecks follow in the next paragraph, but there is no place in the ES where actual problems within the study area are described. Since there is an extensive list of recommendations in the document, presumably responding to identified problems, there should be an equally extensive list of problems in the ES.	The final report will reflect this correction.
	5. “Additional Improvements Recommended” “The improvements that were developed with the participation of the MassHighway, MBTA, and the study’s Advisory Task Force . . .,” etc. We don’t know about MassHighway or the MBTA, but the Advisory Task Force did not participate in the development of the improvements, we merely commented on those that were developed. The Task Force should have a role in recommending improvements (more on that below). “The improvements that were recommended by this study. . .” Studies cannot recommend improvements. The Task Force, MassHighway, MBTA, CTPS, or Seth can. There are other places in the document where this same construct is used – please assign responsibility for actions to a specific organization or individual, not to a “study” which has no ability to act.	One of the purposes of the Advisory Task Force was to guide this study to successful completion by providing oversight. Members of the task force suggested some of the improvements and did participate in this study. Task 1 of the work program for this study that was approved by the Boston Region Metropolitan Planning Organization specified that CTPS would form a Braintree split Advisory Task Force to assist with the study and would meet three times with the Task Force. Three meetings were held in Braintree Town Hall with the Advisory Task Force. The inside cover of the report contains the list of task force members. Attendance at the task force meetings and comments on the draft report will also be provided in Appendix A of the final report. All of the improvements developed in this study (recommended and not recommended) were presented to the advisory task force for comments and feedback. They were also discussed with experts from MassHighway (the design, environmental, and planning departments) and the MBTA about their feasibility before any recommendations were made. CTPS, with the assistance of the task force, developed these improvement concepts to address some of the traffic operations and safety concerns/problems in the Braintree split area. These concepts are the first stage in a series of processes toward implementation. If these concepts advance into projects, they would undergo further evaluations, more public participation, and some modifications.
6. None of the improvements proposed are major redesigns or additions. CTPS has said at meetings that the purpose of this study is to focus on operational improvements – that’s a perfectly appropriate way to proceed, but it’s not mentioned in the ES, maybe not anywhere in the document. Someone reading the document will likely expect a discussion of “big ticket” improvements, even if it is only to say that they weren’t considered, and may be evaluated in a later study.	The purpose of this study is to focus on operational improvements, as emphasized in the title of the report. The purpose is also mentioned in the Executive Summary and other parts of the study report. In an operational study, the focus is on improvements that can be implemented in a short time, do not require major environmental impact study or land takings, can be constructed within the present right-of-way, do not adversely affect residential neighborhoods, are cost-effective, and buy more time to look at long-range strategies. These are the criteria that guided the improvements recommended in this study.	

Source	Comment (unedited)	Response
MAPC	<p>7. "Summary"</p> <p>There doesn't need to be a summary of the Executive Summary. To the extent there is new information here, it can be characterized as "Benefits of the Improvements." And there is need for a "Next Steps" section in the ES.</p>	<p>The final report will reflect this suggestion.</p>
	<p>8. "Chapter 3, Current Transportation, 3.1.4 Traffic Queues"</p> <p>It is unclear as written how far these queues extend since different segments are discussed separately. For example, for the PM peak, the southbound segments from Granite Street to the Split (on the Southeast Expressway) and Union Street and the Split (on Route 3) are both listed with queue (problems?). We read this as one queue extending from Union Street to Granite Street. A graphic here might be helpful.</p>	<p>This section of the report has been revised to address the extent of traffic queues. The final report will reflect this correction.</p>
	<p>9. "Chapter 6. Planned and Proposed Improvements"</p> <p>There needs to be a distinction between programmed, planned, and proposed. Service changes planned by the MBTA, projects programmed in the TIP, or being funded through private sources, local Chapter 90 funds, or in other concrete ways should be identified. Other projects planned in the latest Regional Transportation Plan should be noted, along with the time period they have been assigned. All other projects are "conceptual ideas" and their future funding uncertainty should be made clear. Information listing the proponent of each project or idea would also be helpful.</p>	<p>The final report will reflect this correction.</p>
	<p>Content</p> <p>1. The weave by HOV vehicles exiting the HOV lane SB and heading towards I-93 was identified as a problem in the study. However, no improvement was recommended. One suggested by MAPC was moving the end of the HOV lane north, by whatever amount was feasible, to allow that much additional space for vehicles to complete the weave. Adriel Edwards, of EOT Planning, volunteered to check with MassHighway on the feasibility of moving this exit point. If acceptable that recommendation should be communicated to other Task Force members, and included in this draft if there is consensus.</p> <p>A second MAPC recommendation for this "problem" was the evaluation of a flyover ramp to replace this move. We believe this should be one of the Next Steps evaluated in the follow-up to the current study.</p>	<p>Both suggestions were checked with MassHighway and were found infeasible. However, they will be included in Appendix B, which contains improvements that were found infeasible and/or were not recommended.</p> <p>Relocation of Southbound HOV Terminal</p> <p>Moving the southbound HOV lane exit further north would bring it toward the Furnace Brook Parkway interchange. This section of the Expressway is in a curve that makes it unsafe for traffic exiting from the HOV lane to merge with the traffic on the Expressway. Straight sections of roadway are best suited for merge areas.</p> <p>Moving the southbound HOV lane exit further north would also bring it closer to the Furnace Brook Parkway southbound on-ramp, where merging traffic causes PM peak period traffic congestion. Merge areas are best located in sections of roadway where no other merges are taking place.</p> <p>There is no space further north of the southbound HOV lane exit to set up the AM peak period HOV entrance and the PM peak period HOV exit at the same location.</p> <p>Moving the southbound HOV lane exit north would reduce the benefit of the lane due to reduced travel time savings.</p> <p>Flyover Ramp for Southbound HOV Traffic Heading towards I-93</p> <p>The HOV lane is reversible; a fixed flyover structure would not allow for this reversible operation.</p> <p>There is no space on the current Expressway right-of-way to build a flyover. A flyover from the southbound HOV lane exit to I-93 would require at least 22 feet on the Expressway, in addition to the space required for the HOV lane merge to Route 3 South.</p> <p>Traffic from the flyover would have to merge with I-93 southbound traffic.</p>

Source	Comment (unedited)	Response
MAPC	<p>2. At location #2, an alternative to the double left-turn lane recommended by CTPS was suggested by MAPC. The existing left turn to I-93 would be replaced by a right turn to a new climbing lane/on-ramp constructed between the two barrels of I-93. This would result in a left-side on-ramp, providing access to the Expressway northbound, and would eliminate the dangerous weave that is currently required. If there has been an evaluation of this alternative, then it should be included in this document, as either a recommendation or as Not Recommended in Appendix B. Otherwise it should be added to the list of improvements to be evaluated in Next Steps. [Appendix B is now Appendix C in the final report.]</p>	<p>This alternative was discussed with MassHighway and found infeasible; however, it will be included in Appendix C, which describes improvements that were found infeasible and/or were not recommended.</p> <p>Even though this alternative eliminates the current dangerous weave, it also results in a left-side merge. MassHighway does not encourage construction of left-side ramp merges because of their associated safety concerns—merging with high-speed traffic. In addition, the Route 37 interchange on- and off-ramps are very close to the area where traffic diverges to the Expressway and Route 3 South. Straight sections of roadway and sections where no other merges and diverges are taking place are best suited for merge areas. Neither an underpass nor an overpass was found appropriate at this location.</p>
	<p>3. In general, while weave problems were identified in many locations of the study area, the only recommended solution was at location 2 above. In an operational study like this one, approaches to minimize weaving, which would include providing better information on appropriate lanes and separating through from weaving trips, should also be explored. For example, signs for the Route 24 exit could be posted further east on I-93 and could announce the need to get in the left lanes. Other potential recommendations along these lines should be developed and discussed between the DRAFT and FINAL versions of this document.</p>	<p>CTPS recommended installing new signs or modifying existing signs to better inform motorists about appropriate lanes at many locations. The final report will incorporate this recommendation.</p>
	<p>4. Although “access to transit” is listed as a “concern,” there is no mention that the parking garages at the Braintree and Quincy Adams Red Line stations are full (nor any mention in the text about Braintree commuter rail). If a study has not already been completed at CTPS for the MBTA, one obvious Next Step (Task Force Recommendation) would be a study of the impact on future traffic in the Split of adding additional parking at these two locations (at least).</p>	<p>Table 1, Commuter Rail Park-and-Ride Lot Inventory, gives information on the operator, fees, number of spaces, and utilization of park-and-ride lots, including the Braintree Station garage. A discussion of parking at Quincy Adams Station on the Red Line will be added to the report. Both the Braintree and Quincy Adams parking garages are rated high-priority in the MBTA’s Program for Mass Transportation and will be mentioned in the final report. The final report will include this recommendation.</p>
	<p>5. In the Planned and Proposed Improvements chapter, a number of transit and highway projects are listed which could have significant impacts on the volumes and perhaps on the safety problems in the Split. It is not clear from the document whether these impacts and needs for these projects were considered concurrently with the recommended improvements. If an analysis has been done for some or all of these projects showing they will have benefits for the Split, you should say so. If the synergistic impacts are unknown, then this should be identified as another task under Next Steps.</p>	<p>It is mentioned in the report that the forecasts do not include commuter rail to New Bedford/ Fall River. A separate table or a list showing all of the planned and proposed improvements that were not included in the planning model because of their status will be added. The final report will reflect this correction.</p>
	<p>6. In general we support the lengthening of acceleration and deceleration lanes and the additional warning and information signs, but do not support adding a fourth travel lane by converting the breakdown lane. We would like additional discussions (as part of the community and subregional consultations below) of the needs and alternatives before taking a position on the specific recommendations at each location.</p>	<p>All of the lane additions address operational problems (bottlenecks) outside of the Braintree split that restrict traffic flow to and from the Braintree split, and they use short sections of breakdown lanes. The use of short sections of breakdown lanes is an interim measure appropriate for operational improvements while long-term strategies that take a longer time to implement are being developed and evaluated.</p> <p>Also, in an operational study like this one, the focus is on improvements that can be implemented in a short time, do not require a major environmental impact study, do not require land takings, can be constructed within a right-of-way, do not adversely affect residential neighborhoods, are cost-effective, and buy time to look at long-range improvements.</p> <p>At the moment, all of the recommendation are concepts and would require further evaluation, including more public participation, before CTPS, MassHighway, or the communities take a position on any of the recommendations and developing them into a project. CTPS suggests that this should be carried out in the “next steps,” as this study’s work program specified the formation of an advisory task force to assist with the study and did not budget for the additional public participation.</p>

Source	Comment (unedited)	Response
MAPC	<p>7. We do not support further study of Route 24 south as the follow-up to this study. While the Route 24 lane reduction from 4 to 3 lanes certainly contributes to backups on I-93 and perhaps even at the Split, one possible solution has already been identified in this study. Yet many of the potential “big ticket” items that might help directly in the Split have not yet been evaluated. We believe a follow-up to the this Braintree Split study should be an evaluation of transit/trip reduction strategies, flyovers, and other methods to separate currently weaving traffic, alternatives mentioned above, and other major design changes that will improve safety and congestion within the Split (in combination with changes outside the Split, if appropriate). This study should employ the regional model to study the potential for diversions, as well as building on the simulation work already begun.</p>	<p>The widening of the entrance to Route 24 from three to four lanes improves traffic flow through the Braintree split to Route 3 South and to I-93, especially during the PM peak period, when traffic backs up on I-93 southbound from Route 24 into the Braintree split. Based on the length of widening recommended, the 2025 queue length on I-93 is limited to the area between Route 28 and Route 24, which is an improvement over current conditions.</p> <p>Besides reducing the queuing on I-93, the widening of the entrance to four lanes also improves safety by eliminating the shared middle lane, which many drivers avoid because of merging and sight-distance problems. Drivers merging in the middle lane do not see each other from connecting ramps until the merge begins.</p> <p>Finally, this operational improvement is not a “big ticket” item, and can be implemented quickly, while other regional transportation strategies are evaluated to address mobility issues in southeastern Massachusetts.</p>
	<p>8. We also believe that there should be additional consultation with the members of the Task Force about the recommendations of the study. We believe that the presentation you gave at the last Task Force meeting was a good beginning in understanding how the recommendations are reasonable responses to the identified problems, and we believe that many of the recommendations presented are good ones. However, only two previous Task Force meetings were held and many questions remain to be asked. The Task Force communities need additional internal discussions, and the MAPC SSC and TRIC subregions need the promised presentations and consultations. We believe this consultation can take place after the DRAFT document has been released, with the understanding that a FINAL document will be produced that reflects these comments, and (hopefully) a consensus from the Task Force on Next Steps. The follow up study currently listed in the UPWP should reflect this consensus on Next Steps.</p> <p>9. Ultimately, we all have the goal of moving some/all of these recommendations to implementation. The best way to insure that these recommendations don’t just sit on a shelf is to build widespread support and an enthusiastic proponent. Even if MassHighway is the proponent they will want community support before they proceed too far. Before we finish up with this study and these recommendations there needs to be an effort to develop this support. We believe that should be the first Next Step, even before the big ticket items are evaluated.</p>	<p>CTPS agrees that additional consultation with the communities and MAPC subregions is necessary and should be carried out as these improvement concepts advance into projects. The study has a limited budget and cannot carry out all the necessary public participation efforts at this stage. This study’s work program specified the formation of an advisory task force to assist with the study and up to three meetings with the task force. CTPS held three meetings with the task force at the Braintree Town Hall, where concerns, problems, and potential solutions were discussed. The inside cover of the report contains the list of task force members. The meeting dates and attendance at the task force meetings and comments on the draft report will be provided in Appendix C of the final report.</p>
	Braintree	<p>1. Given the high number of crashes at the Union Street /Route 3 interchange (ranked number 34 of the High 1000 crash locations statewide) the improvements at that location should be classified as “safety” rather than “traffic flow.” This distinction may be the difference between what gets built expeditiously and what is delayed or maybe not built at all.</p>
<p>2. I am skeptical about the long term benefit of the new signalized dual left turn proposed at location #2. It is hard to imagine fitting any more turning lanes into that stretch of Granite Street and hard to believe that an underpass to get across to the left lane would not be more beneficial.</p>		<p>The new, signalized, dual left turn proposed at location #2 works operates satisfactorily and can be accommodated in the Granite Avenue right-of-way. The proposed improvements would buy more time to look at long-range strategies for the Braintree split.</p> <p>The underpass alternative suggested by the Task Force was discussed with MassHighway and found infeasible. Even though the underpass alternative eliminates the current dangerous weave, it also results in a left-side merge. MassHighway does not encourage construction of left-side ramp merges because of their associated safety concerns—merging with high-speed traffic. In addition, the Route 37 interchange on- and off-ramps are very close to the area where traffic diverges to the Expressway and Route 3 South. Straight sections of roadway and sections where no other merges and diverges take place are best suited for merge areas. Finally, because of the rising grade at this location, there would not be enough space to achieve the desirable grade for use by trucks to get to the left lane (which is the high-speed lane, thus creating safety problems).</p>
<p>3. Conservation and Planning Director Peter Lapolla is concerned about the safety aspects of the ever-increasing trend toward converting breakdown lanes to peak-period travel lanes. He is particularly concerned about lack of shoulder areas for emergency responders trying to get to incident scenes.</p>		<p>The use of the breakdown lane is an interim measure and would be implemented only on short sections of roadways. In this study, the focus was on operational improvements that can be implemented in a short time, do not require major environmental impact study or land takings, can be constructed within the present right-of-way, do not adversely affect residential neighborhoods, are cost-effective, and buy more time to look at long-range strategies.</p>

Source	Comment (unedited)	Response
	<p>4. On a final note, the study results for the “Build” situation should emphasize that it is assumed that the recommended projects not only inside the study area but those external to it as well have been “built.” With such high percentages of drive-alone trips, transit extension to New Bedford and Fall River should take a great deal of pressure off of the Braintree Split, perhaps even more than is accounted for in the study.</p>	<p>The final report will reflect this suggestion.</p>

A.3 Attendance at Advisory Task Force Meetings

Braintree Split Study
Advisory Task Force Meeting
Braintree Town Hall
December 11, 2003

Name	Affiliation	Telephone
Seth Asante	CTPS	617 973-7098
Ef Papisas	"	617 973-7106
Jim Gallagher	MAPC	617-451-2770 x2053
Hardy Patel	Mass. Highway	617-973-7728
Stanley Wood	Mass Highway	617-973-7721
Adriel Edwards	Mass Highway	617 973 8062
Paul Halkiotis	Weymouth Planning	781 682 3637
Joe Onorato	MHD DA	781-641-8479
George Bezkorovany	Weymouth Traffic	781-682-3638
Joy LaMotte	Quincy Traffic	617-689-8306
Ann Bowes	Rep. Timilty	617-722-2692
Aaron Henry	Town of Milton	(617) 696-5729
Joe Cosgrove	MBTA	(617) 222-4400
Joe Driscoll	state rep. Braintree	617-722-2460
Bill Clark	MAPC/SSC	617 451-2770 x2052

Braintree Split Study
Advisory Task Force Meeting
Braintree Town Hall
June 2, 2004

Name	Affiliation	Telephone
Seth Asante	CTPS	617-973-7098
Ef Papisas	"	- 973-7106
Peter S. Loppold	Braintree Planning	781-894-8232
Jim Gallagher	MAPC	617-451-2770-2053
Bill Clark	MAPC	617 451-2770 x2052
Paul Halkiotis	Weymouth Planning	781 682 3637
JOHN McMALTON	B DPW	781 794 8250
Bob Campbell	Braintree DPW-Engineering	781 794 8012
George Bezkorovany	Weymouth Traffic	781-682-3658
Melanie Hiris	Braintree planning/conserv	781.684.8233
Greg Prendergast	Mass Highway-Environmental	617-973-7484
Stanley Wood	Mass Highway-Design	617 973.7721
Hardy Patel	" " "	617-973-7728
Adriel Edwards	Mass Highway Planning	617 973 8062
Robert Boone	Mass Highway District 4	781 641-8472

Braintree Split Study
Advisory Task Force Meeting
Braintree Town Hall
June 24, 2005

<u>Name</u>	<u>Affiliation</u>	<u>Telephone</u>
Seth Asante	CTPS	617-973-7098
Efi Pagitsas	CTPS	617-973-7106
Paul Halkiotis	Weymouth Planning	781-682-3637
Jim Gallagher	MAPC	617-451-2770 x2053
Bill Clark	MAPC	617-451-2770 x2025
Greg Prendergast	MassHighway-Environmental	617-973-7484
Adriel Edwards	EOT	617-973-8062
Joe Onorato	MassHighway-District 4	781-641-8479
Bob Campbell	Braintree DPW-Engineering	781-794-8012
Peter Lapolla	Braintree-Planning	781-794-8232
Joe Cosgrove	MBTA-Planning	617-222-4400

APPENDIX B

Socioeconomic Trends

Figure B-1 Change in Population: 1990–2000 (2000 Census)

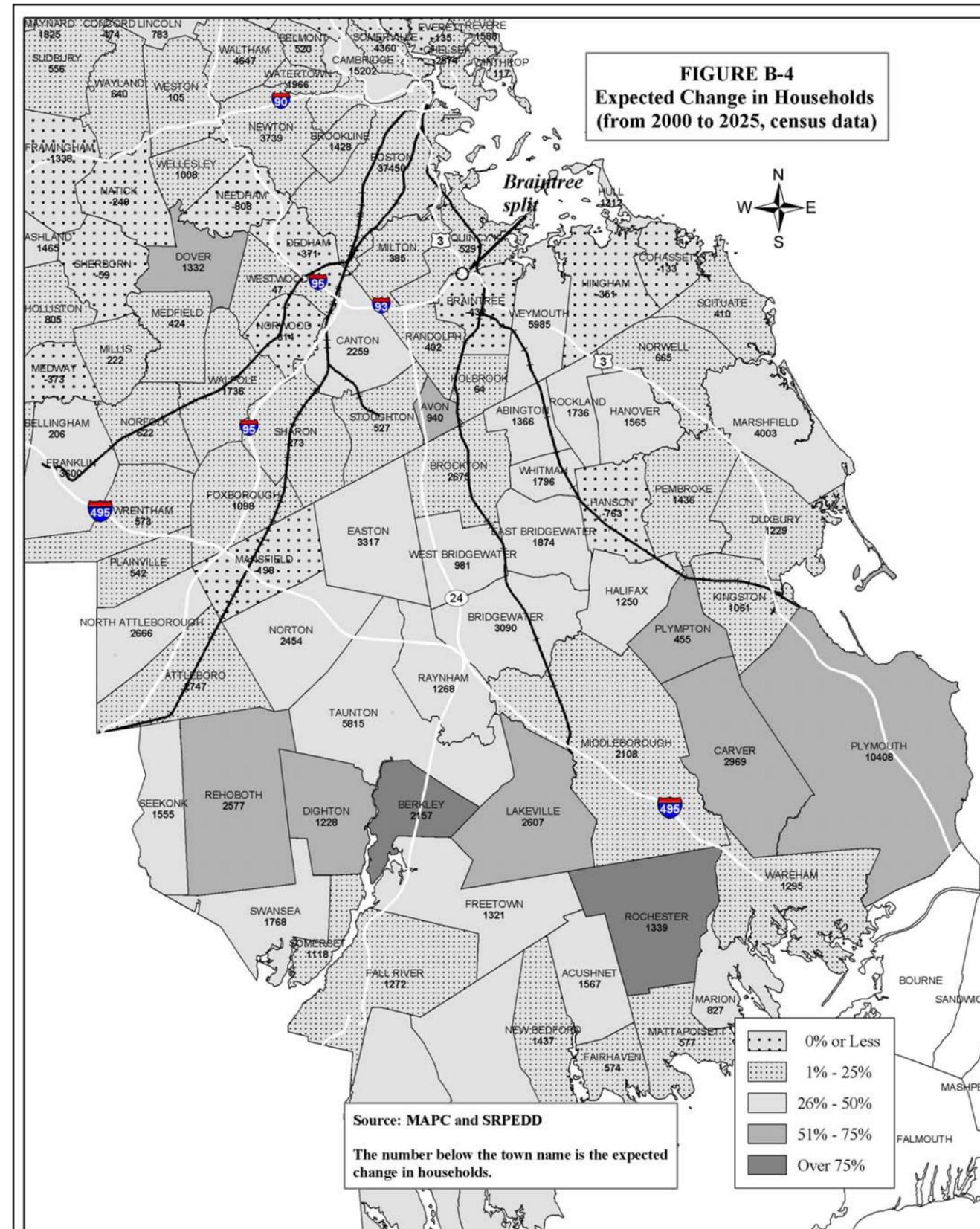
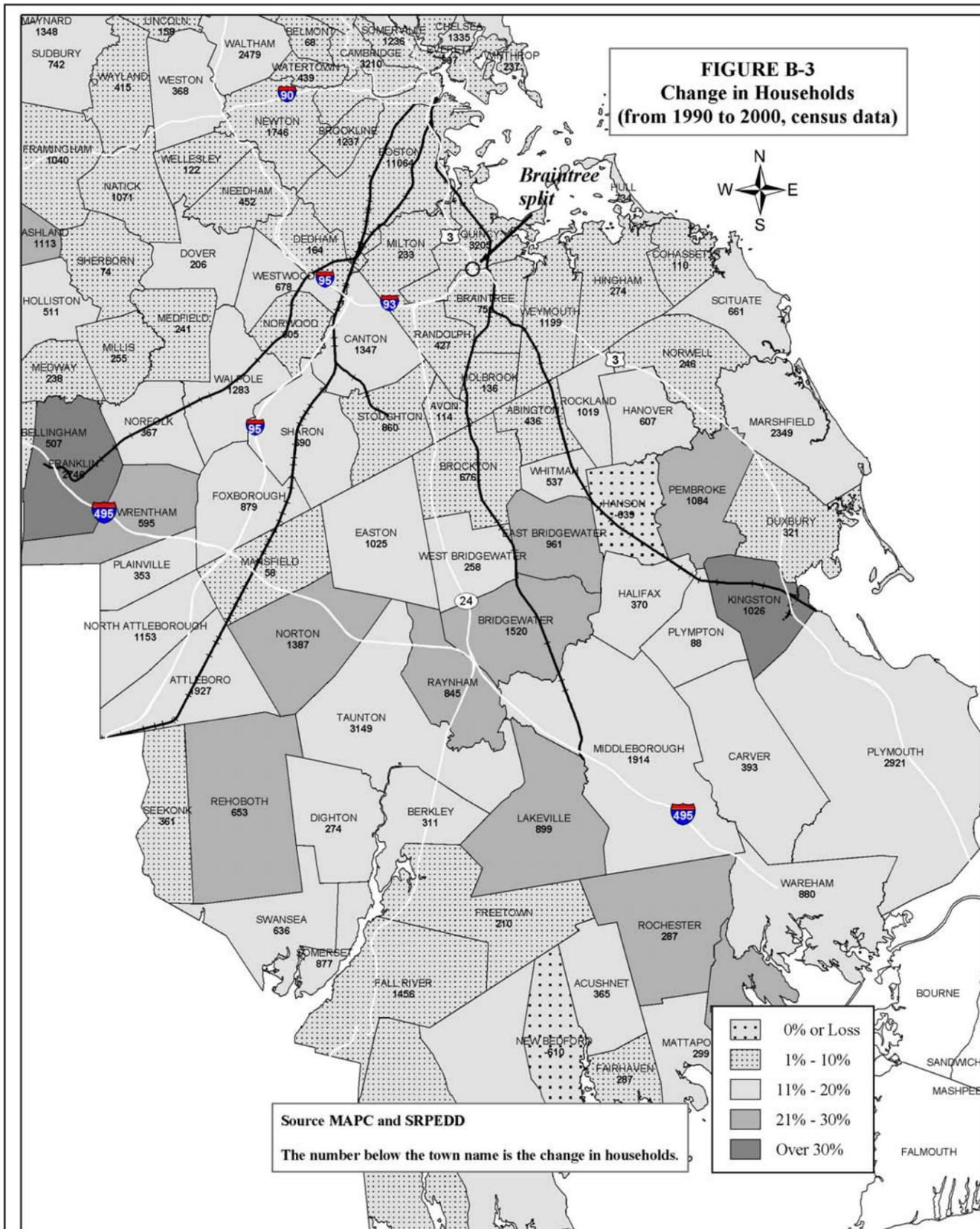
Figure B-2 Expected Change in Population: 2000–2025 (2025 forecasts from MAPC and SRPEDD)

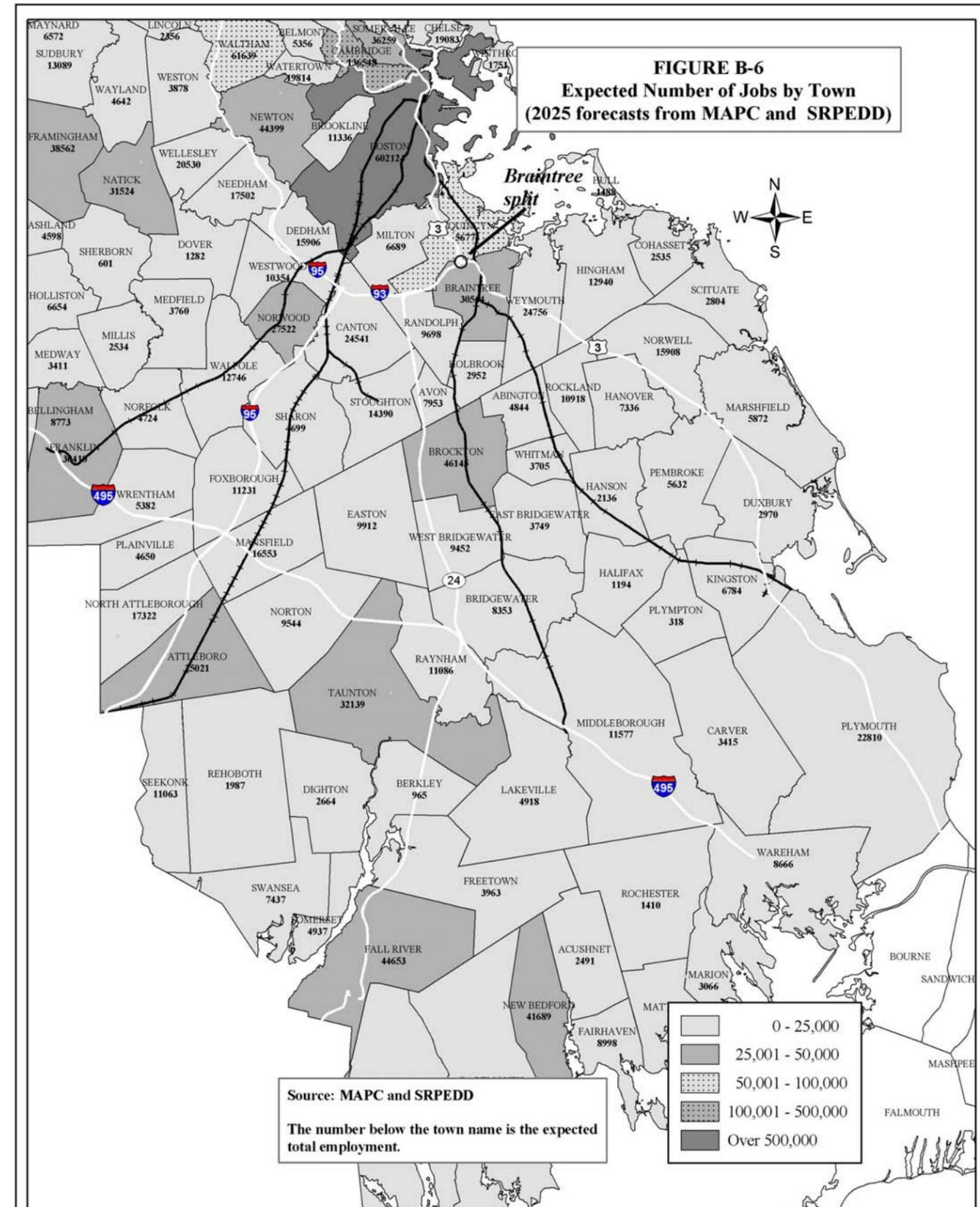
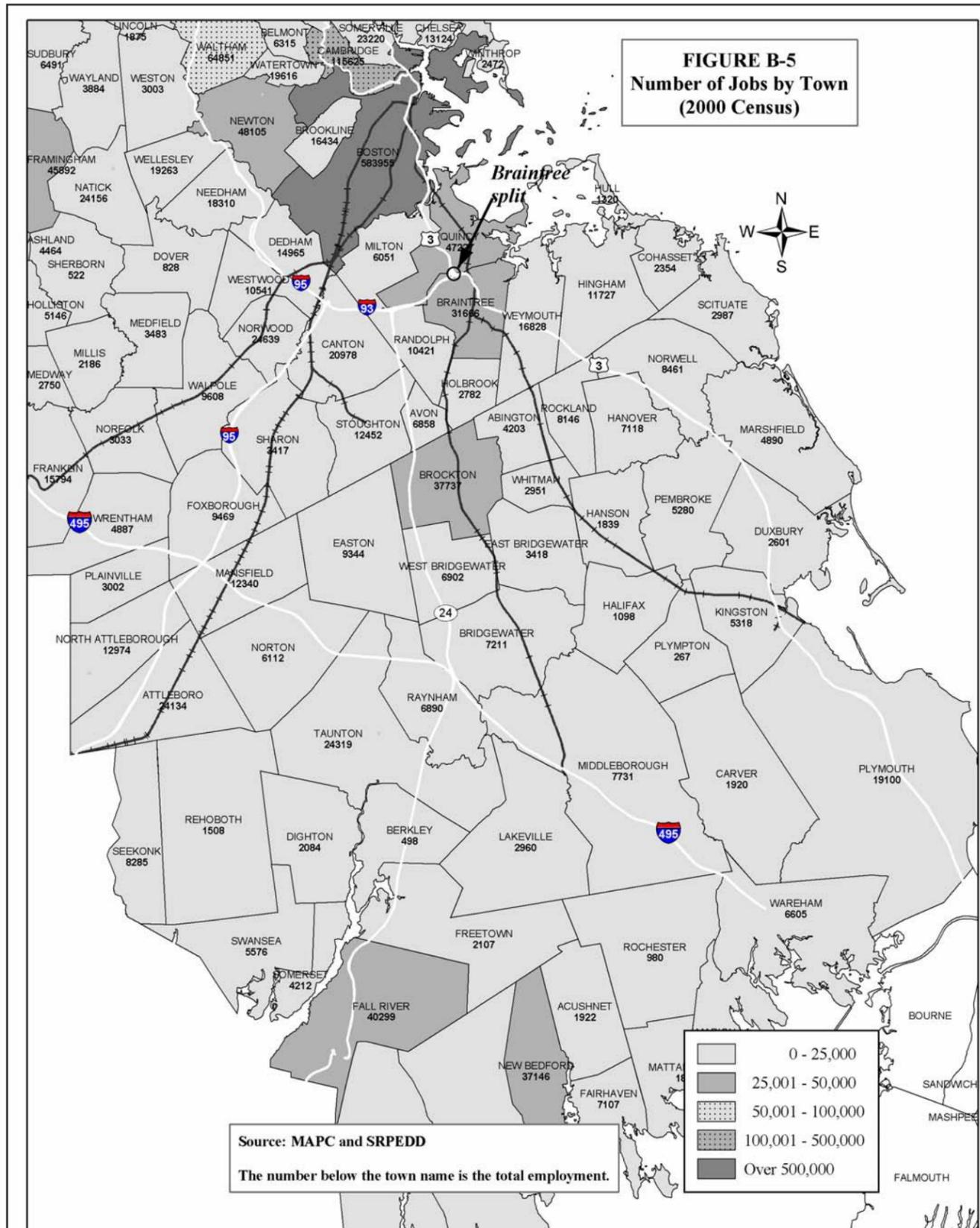
Figure B-3 Change in Households: 1990–2000 (2000 Census)

Figure B-4 Expected Change in Households: 2000–2025 (2025 forecasts from MAPC and SRPEDD)

Figure B-5 Number of Jobs by Town (2000 Census)

Figure B-6 Expected Number of Jobs by Town (2025 forecasts from MAPC and SRPEDD)





APPENDIX C

Improvements That Were Considered but Were Not Recommended

C.1 Safety Improvements

C.2 Traffic Flow Improvements

C.1 SAFETY IMPROVEMENTS

The safety improvement options that were considered in this study but were not recommended for further consideration and the reasons for not recommending them are described below. The individual safety improvements are shown in white in Figure C-1. The improvements are identified by the number associated with the location of the concern, as in Figures 2 and 3. That numbering is repeated in Figure C-1 for easy reference and consistency.

Improvements at Location #2: Reconfiguration of the Ramp to Eliminate the Short Weave Distance

Alternative 2: A Flyover or Overpass for Traffic Heading to the Expressway

This proposal was designed to address the safety concerns resulting from the short weave distance for the northbound Route 37 on-ramp traffic proceeding to the Expressway. The proposal calls for restricting the existing on-ramp traffic that is heading to Route 3 South/Burgin Parkway/Washington Street. A median barrier or some form of separation would be required to prevent the ramp traffic from violating this restriction.

In addition, the proposal calls for building an overpass over I-93 northbound for the ramp traffic destined for the Expressway, and installing new signs or modifying existing signs on Route 37 to guide motorists to the appropriate ramps. These modifications would increase safety at the split by eliminating the short weave section. The shortcomings of this proposal are that:

- Both I-93 northbound and the existing ramp are on an incline and there would not be enough room to achieve the desired vertical clearance.
- The proposed ramp would create a left-side ramp merge that would cause safety problems for the I-93 traffic heading to the Expressway.

Alternative 3: An Underpass for Traffic Heading to the Expressway

This proposal is similar to Alternative 1 and was designed to address the safety concerns resulting from the short weave distance for the northbound Route 37 on-ramp traffic proceeding to the Expressway. The proposal calls for restricting the existing on-ramp traffic that is heading to Route 3 South/Burgin Parkway/Washington Street. A

median barrier or some form of separation would be required to prevent the ramp traffic from violating this restriction.

In addition, the proposal calls for building an underpass under I-93 northbound for the ramp traffic destined for the Expressway, and installing new signs or modifying existing signs on Route 37 to guide motorists to the appropriate ramps. These modifications would increase safety at the split by eliminating the short weave section. The shortcomings of this proposal are that:

- Both I-93 northbound and the existing ramp are on an incline and there would not be enough room to achieve the desired vertical grade for use by trucks.
- The proposed ramp would create a left-side ramp merge that would interrupt the I-93 traffic diverge to the Expressway.

Improvements at Location #4: Enhance Access to the HOV Lane for Washington Street On-Ramp Traffic with an Overpass

This proposal was developed to enhance access to the northbound HOV lane for travelers using the Burgin Parkway/ Washington Street on-ramp during the AM peak period. The proposal calls for building an overpass over the northbound connectors to the Expressway from I-93 and Route 3 South for use by HOV-bound vehicles entering the HOV lane during the AM peak period. This option eliminates the weave across four travel lanes for entering the HOV lane. The shortcomings of this option are that the proposed ramp would:

- Create a new merge point for the I-93 and Route 3 South HOV traffic.
- Involve cutting through rocks.
- Be very close to the MassHighway Traffic Control Center, therefore affecting traffic entering and leaving the premises.
- Not be cost-effective, considering the small volume of HOV traffic that would be using it, because it would be used only during the AM peak period.
- Require enforcement during off-peak periods when the HOV lane is not in use.

C.2 TRAFFIC FLOW IMPROVEMENTS

The traffic flow improvement options that were considered in this study but were not recommended for further consideration and the reasons for not recommending them are described below. The individual traffic flow improvements are shown in white in Figure C-2. The improvements are identified by the number associated with the

location of the problem, as in Figures 2 and 3. That numbering is repeated in Figure C-2 for easy reference and consistency.

Improvements at Location #5: Design Configuration Improvements for the Section of the Expressway between Furnace Brook Parkway and the Diverge Point of I-93 and Route 3 South

The following alternatives, suggested by the Task Force, were designed to address the southbound PM peak period congestion, weaving, and merging concerns on the Expressway in the vicinity of the Furnace Brook Parkway interchange, the HOV merge point, and the I-93 and Route 3 South diverge area.

Alternative 2: Evaluation of Widening the I-93 Southbound Approach from Two to Three Lanes

The proposal is very similar to what was recommended for further consideration in Chapter 7, except that it adds a travel lane from Furnace Brook Parkway across the Route 37 interchange, ending on I-93 after the diverge point to Route 24. The components of this option are the following:

- Add a travel lane in the southbound direction of the Expressway, beginning from the southbound on-ramp from Furnace Brook Parkway/Willard Street and ending at the diverge point to Route 24.
- Improve lane configuration at the I-93 and Route 3 South diverge area by retaining the existing three lanes to Route 3 South, but widen the approach to I-93 southbound from two to three lanes.
- Install new signs or modify existing signs to direct motorists at the diverge area.

The additional travel lane is expected to reduce merging and weaving in the area and to help on-ramp traffic from Furnace Brook Parkway to enter the Expressway, as well as allowing traffic exiting from the HOV lane to continue onto I-93. This would reduce congestion on the Expressway during the PM peak period. The shortcomings of this option are:

- The additional travel lane in the vicinity of the Route 37 interchange would make it more difficult for the northbound Route 3 South traffic to exit onto Route 37.
- With this option, it would require three lane changes to exit onto Route 37 instead of the current two lane changes.

- The additional travel lane would eliminate the current deceleration lane to Route 37 unless the bridge over Route 37 is widened. Considering the high traffic volumes that exit at this location, 800 vehicles per hour during the AM and PM peak periods, this modification would worsen traffic flow in the vicinity of the interchange.

Alternative 3: Relocate the Southbound HOV Terminal to Create More Space for HOV Vehicles to Merge

This proposal is designed to reduce the weave of HOV vehicles exiting the HOV lane southbound heading towards I-93. The proposal calls for moving the end of the HOV lane north, by whatever amount was feasible, to allow that much additional space for vehicles to complete the weave. This alternative was found to be infeasible due to the following reasons.

First, moving the southbound HOV lane exit further north would bring it toward the Furnace Brook Parkway interchange. This section of the Expressway is in a curve that makes it unsafe for traffic exiting from the HOV lane and merging with the traffic on the Expressway. Merge areas work best on sections of roadway where no other merges are taking place. Additionally, relocating the southbound HOV lane exit further north would bring it closer to the Furnace Brook Parkway southbound on-ramp, where merging traffic causes PM peak period traffic congestion.

In addition, there is no space further north of the southbound HOV lane exit to set up the AM peak period HOV entrance and the PM peak period HOV exit at the same location. Another issue is that relocating the merge area even further north would reduce the benefit of the lane because it would reduced travel time savings.

Alternative 4: Evaluation of a Flyover Ramp for the Southbound HOV Traffic Heading to I-93

This proposal is designed to create a flyover for HOV vehicles exiting the HOV lane southbound heading towards I-93. The flyover for this movement would merge with I-93 southbound outside of the weave area. This alternative essentially eliminates the weave by the HOV vehicles exiting the HOV lane southbound heading towards I-93, but this option was also found to be infeasible due to the following reasons.

- The HOV lane is reversible; a fixed flyover structure would not allow for this reversible operation.

- There is no space between the two barrels of the current Expressway right-of-way to build a flyover. A flyover from the southbound HOV lane exit to I-93 would require at least 22 feet on the Expressway in addition to the space that would be required for the HOV lane merge to Route 3 South.
- Traffic from the flyover would have to merge with I-93 southbound traffic.

**Improvements at Location #9: Design Configuration
Improvements at Interchange Ramps at Exit 17 (Union Street in Braintree)**

The following alternatives suggested by the Task Force were designed specifically to address on-ramp traffic to and from the Union Street rotary interchange that impacts traffic flow on Route 3 South and the Braintree split during the AM and PM peak periods.

Alternative 2: Replace the Existing Rotary Interchange with a Full Diamond Interchange.

The proposal calls for converting the existing rotary interchange into a full diamond interchange and upgrading the existing acceleration and deceleration lanes on the north side into auxiliary lanes. The northbound on-ramp could be upgraded into an auxiliary lane, possibly ending after the exit ramp at interchange 19 (MBTA Quincy Adams Station) to provide more room for the on-ramp traffic to merge with Route 3 South northbound traffic during the AM peak period.

In the southbound direction, the modification would involve upgrading the deceleration lane into an auxiliary lane, possibly ending after the exit ramp at interchange 17 (Union Street) to provide more storage room for the southbound traffic exiting onto Union Street, improving traffic flow on southbound Route 3 South during the PM peak period.

Preliminary analysis indicates that the high traffic volumes and high left-turn volumes at the interchange would require a six-lane underpass with double left-turn lanes at certain locations. Under current conditions, left-turn storage lanes would be adequate, but they could become a problem in the future. A single-point urban interchange is an option, but was not analyzed in this study.

Alternative 3: Provide a Direct Ramp Connection to the Marketplace at Braintree

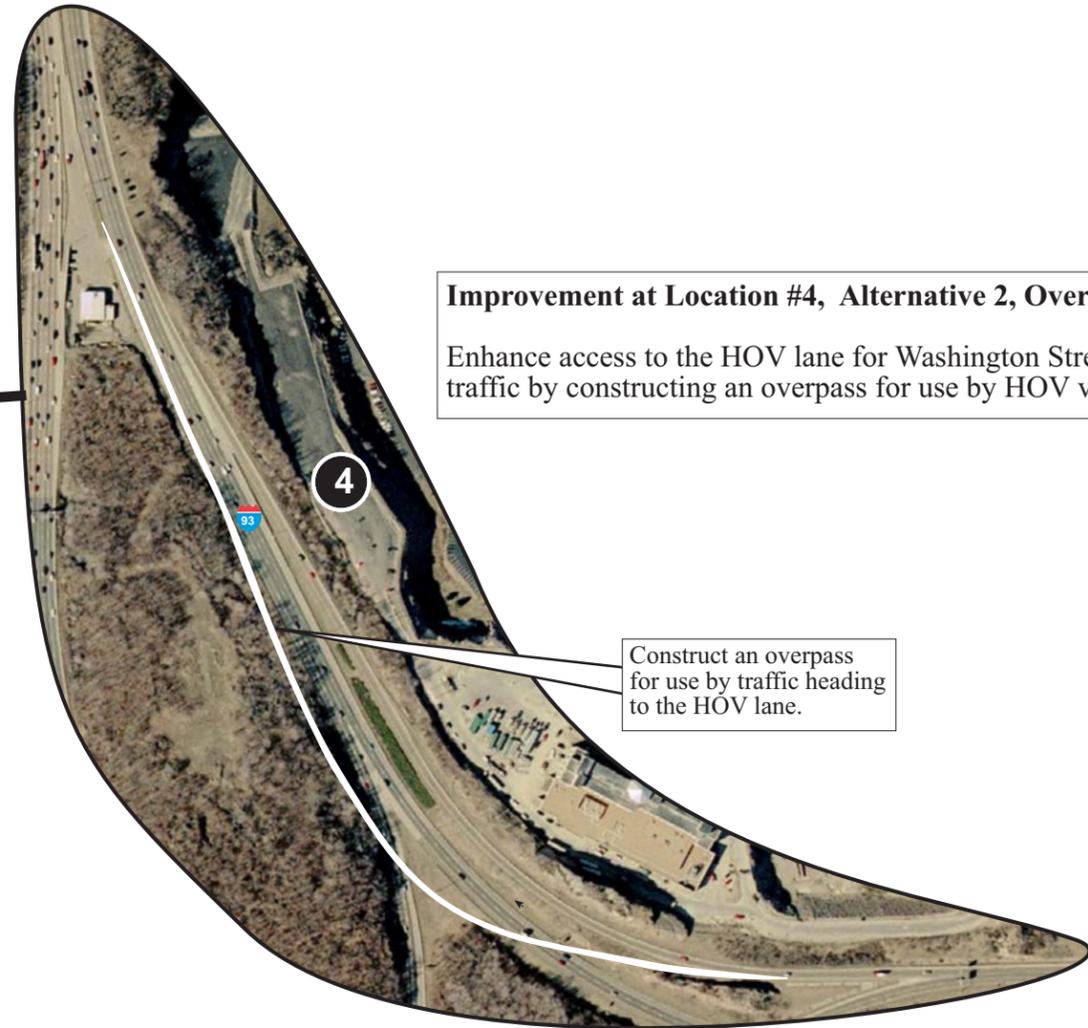
This proposal would construct a direct southbound off-ramp from Route 3 South to the Marketplace at Braintree. The new ramp would

route shopping trips directly to the mall instead of having them pass through the rotary interchange at Union Street. The problem with this proposal is that there is no arterial or collector nearby to receive the ramp traffic. Thus the new ramp would connect to one of the mall's internal streets, possibly creating safety problems.

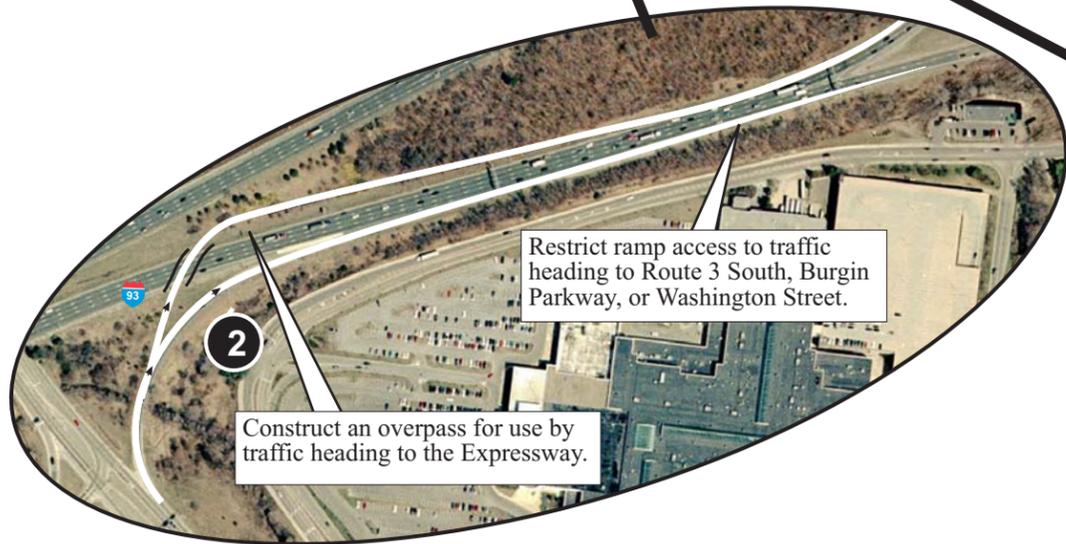
FIGURE C-1
Safety Improvements Not Recommended



Improvement at Location #4, Alternative 2, Overpass
 Enhance access to the HOV lane for Washington Street on-ramp traffic by constructing an overpass for use by HOV vehicles.



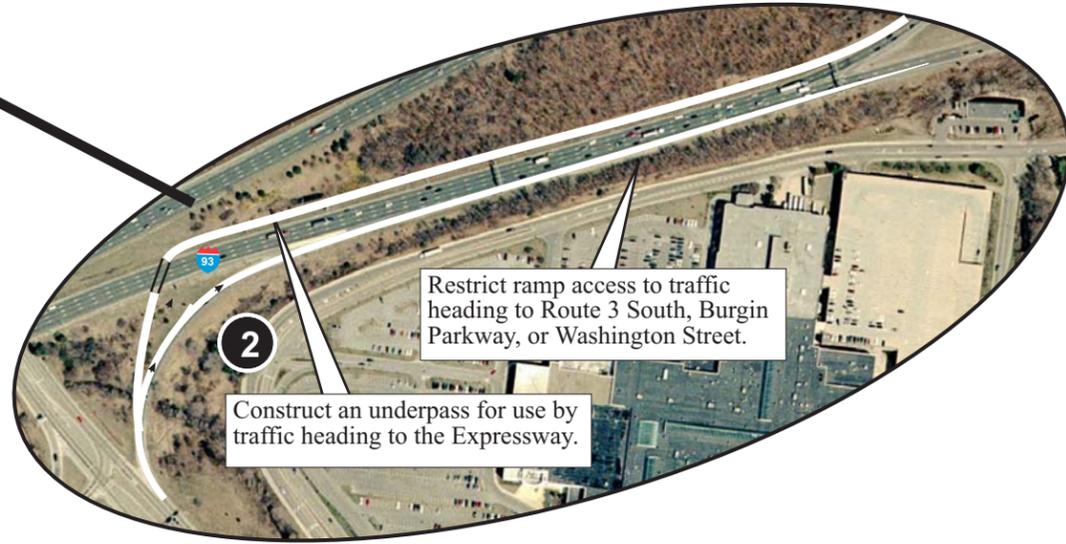
Construct an overpass for use by traffic heading to the HOV lane.



Construct an overpass for use by traffic heading to the Expressway.

Restrict ramp access to traffic heading to Route 3 South, Burgin Parkway, or Washington Street.

Improvement at Location #2, Alternative 2, Flyover or Overpass
 Reconfigure existing ramp to eliminate short weave distance by building an overpass for the ramp traffic heading to the Expressway.



Construct an underpass for use by traffic heading to the Expressway.

Restrict ramp access to traffic heading to Route 3 South, Burgin Parkway, or Washington Street.

Improvement at Location #2, Alternative 3, Underpass
 Reconfigure existing ramp to eliminate short weave distance by building an underpass for the ramp traffic heading to the Expressway.

FIGURE C-2
Traffic Flow Improvements Not Recommended

