Comparison of Existing Fixed-Route Ridership and Operating Costs to Those of Other Massachusetts RTAs

Operating data (for federal fiscal year 2008) for the fixed-route services of the 15 regional transit authorities serving the commonwealth are presented in Table 3; performance measures derived from those data are presented in Table 4. The MWRTA network's total number of fixed-route passengers carried was greater than that of five RTAs: the Cape Ann Transportation Authority (CATA), Cape Cod Regional Transit Authority (CCRTA), Nantucket Regional Transit Authority (NRTA), Berkshire Regional Transit Authority (BRTA), and Franklin Regional Transit Authority (FRTA); see Table 3.

The MWRTA fixed-route network's number of passengers carried per vehicle revenue hour was also higher than that of five other RTAs: the BRTA, FRTA, Montachusett Area Regional Transit Authority (MART), Greater Attleboro Taunton Regional Transit Authority (GATRA), and CCRTA; see Table 4. Thus, while the MWRTA is toward the lower end of the ridership spectrum when compared to other RTAs in the commonwealth, it has neither the lowest total fixed-route ridership nor the lowest number of riders when measured on a per-hour basis.

The MWRTA's cost per hour to provide fixed-route service ($51.31) is lower than that of any other RTA in the commonwealth. The farebox recovery ratio (the percentage of fixed-route costs covered by fare income) is 22%. This is the fifth-best farebox recovery ratio of the 15 agencies, with the Vineyard Transit Authority (VTA) having the highest, at 38%, and the FRTA the lowest, at just 6%. The operating expense per passenger trip for the MWRTA is $4.33. This is the fourth-best of the 15 RTAs, after the Pioneer Valley Regional Transit Authority (PVTA) at $2.41, VTA at $2.98, and Brockton Area Transit (BAT)at $3.57. See Table 4.

TABLE 3
Comparison to Other Massachusetts RTAs' Fixed-Route Services: Basic Operating Data (FFY 2008)

RTA	Unlinked Passenger Trips (UPT)	Veh-Rev-Miles (VRM)	Veh-Rev-Hrs (VRH)	Operating Expense (OE)	Fare Revenue ($)
BAT	2,680,500	1,327,100	118,800	$9,580,700	$2,258,499
BRTA	496,300	832,000	43,500	$4,120,000	$667,578
CATA	241,000	320,100	20,000	$1,731,200	$196,333
CCRTA	428,600	1,040,600	83,500	$4,486,900	$281,458
FRTA	126,585	281,576	15,595	$1,561,084	$95,176
GATRA	746,300	1,875,200	86,700	$6,332,400	$1,828,410
LRTA	1,308,500	1,115,200	73,500	$7,069,700	$938,400
MART	602,200	825,700	67,000	$6,165,500	$745,763
MVRTA	2,162,200	1,508,400	122,600	$9,850,500	$1,167,515
MWRTA	**497,400**	**492,500**	**42,000**	**$2,155,200**	**$488,145**
NRTA	251,008	192,737	17,009	$1,391,497	$363,576
PVTA	11,741,400	4,161,900	325,300	$28,282,600	$4,982,049
SRTA	1,611,000	1,222,400	95,200	$9,552,700	$1,226,109
VTA	1,031,197	858,546	57,253	$3,069,923	$1,166,986
WRTA	3,102,400	1,568,200	136,000	$14,089,600	$2,243,355

Source: 2008 National Transit Database submittal to FTA by MassDOT

TABLE 4
Comparison to Other Massachusetts RTAs' Fixed-Route Services: Performance Measures (FFY 2008)

RTA	Fare Revenue per Trip ($/UPT)	Operating Expense per Trip (OE/UPT)	Fare Revenue per Mile ($/VRM)	Operating Expense per Mile (OE/VRM)	Fare Revenue per Hour ($/VRH)	Operating Expense per Hour (OE/VRH)	Fare Recovery Ratio ($/OE)	Passengers per Veh-Rev-Hour	Passengers per Mile
BAT	$0.84	$3.57	$1.70	$7.22	$19.01	$80.65	23.6%	22.56	2.02
BRTA	$1.35	$8.30	$0.80	$4.95	$15.35	$94.71	16.2%	11.41	0.60
CATA	$0.81	$7.18	$0.61	$5.41	$9.82	$86.56	11.3%	12.05	0.75
CCRTA	$0.66	$10.47	$0.27	$4.31	$3.37	$53.74	6.3%	5.13	0.41
FRTA	$0.75	$12.33	$0.34	$5.54	$6.10	$100.10	6.1%	8.12	0.45
GATRA	$2.45	$8.49	$0.98	$3.38	$21.09	$73.04	28.9%	8.61	0.40
LRTA	$0.72	$5.40	$0.84	$6.34	$12.77	$96.19	13.3%	17.80	1.17
MART	$1.24	$10.24	$0.90	$7.47	$11.13	$92.02	12.1%	8.99	0.73
MVRTA	$0.54	$4.56	$0.77	$6.53	$9.52	$80.35	11.9%	17.64	1.43
MWRTA	**$0.98**	**$4.33**	**$0.99**	**$4.38**	**$11.62**	**$51.31**	**22.6%**	**11.84**	**1.01**
NRTA	$1.45	$5.54	$1.89	$7.22	$21.38	$81.81	26.1%	14.76	1.30
PVTA	$0.42	$2.41	$1.20	$6.80	$15.32	$86.94	17.6%	36.09	2.82
SRTA	$0.76	$5.93	$1.00	$7.81	$12.88	$100.34	12.8%	16.92	1.32
VTA	$1.13	$2.98	$1.36	$3.58	$20.38	$53.62	38.0%	18.01	1.20
WRTA	$0.72	$4.54	$1.43	$8.98	$16.50	$103.60	15.9%	22.81	1.98

Note: UPT, OE, VRM, and VRH are defined in Table 3.

Source: 2008 National Transit Database submittal to FTA by MassDOT

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Jeffrey B. Mullan
MassDOT Secretary and CEO
and MPO Chairman

Arnold J. Soolman
Director, MPO Staff

MEMORANDUM

DATE December 17, 2009

TO Transportation Planning and Programming Committee of the Boston Region Metropolitan Planning Organization

FROM Arnold J. Soolman, CTPS Director

RE Work Program for: State Fiscal Years 2010 and 2011 Massport Technical Assistance

ACTION REQUIRED

Review and approval

PROPOSED MOTION

That the Transportation Planning and Programming Committee of the Boston Region Metropolitan Planning Organization, upon the recommendation of the Massachusetts Port Authority, vote to approve the work program for State Fiscal Years 2010 and 2011 Massport Technical Assistance in the form of the draft dated December 17, 2009.

PROJECT IDENTIFICATION

Unified Planning Work Program Classification
Technical Support Projects

CTPS Project Number
22123

Client
Massachusetts Port Authority
Project Supervisor: Craig Leiner

CTPS Project Supervisors
Principal: Karl Quackenbush
Manager: Scott Peterson

Funding
Future Massport Contract

IMPACT ON MPO WORK

The MPO staff has sufficient resources to complete this work in a capable and timely manner. By undertaking this work the MPO staff will neither delay the completion of nor reduce the quality of other work in the UPWP.

BACKGROUND

During the past few years, Massport has undertaken studies of regional transportation issues in order to develop immediate and short-term strategies to sustain or improve ground access to Logan Airport and other facilities.

The Massport Logan Airport area studies have included the Airport Intermodal Transit Connecter (AITC) Environmental Assessment, the combined Logan Ground Access Generic Environment Impact Report, the Cross Harbor and Regional Transportation Study, the Logan Growth and Impact Control Study, and a series of annual Environmental Data Reports and Environmental Status and Planning Reports. CTPS support of these studies has included geocoding of Logan passenger survey data, preparation of files of selected data from Logan passenger surveys, development and redevelopment of a passenger ground access mode choice model, use of the passenger ground access mode choice model to identify the impacts of specified alternatives, transit and traffic assignment runs with the CTPS regional travel forecasting model, generation of highway and transit travel times between selected origin-destination points, assembling an inventory of on-street and off-street parking facilities, and providing assistance in the preparation of an inventory of Logan Airport ground service equipment. More recently, CTPS has also performed passenger counts on shuttle buses, the Silver Line, and at Airport Station.

OBJECTIVES

The aim of this project is to continue to provide technical assistance for Massport's ground transportation, regional transportation, and air quality studies. The main objectives of this project are as follows.

1. Assist in Logan Airport ground transportation-related data collection, reconnaissance, and analysis efforts.

2. Provide analytical support for current ground access planning and operations issues, as needed.

3. Provide analytical support for long-range, strategic ground access planning initiatives.

WORK DESCRIPTION

CTPS will provide technical assistance to Massport's Department of Economic Planning and Development. The services are expected to support Logan Airport ground access planning, and might include data collection and analysis, analysis related to the East Boston–Chelsea Truck Bypass Road, air quality analysis, and support for additional, to-be-determined transportation-planning activities.

CTPS will provide assistance in four areas, as described below. This work may be redirected or modified in response to emerging issues.

Task 1 Data Collection and Analysis

CTPS will assist with data collection and reconnaissance efforts to support short- and medium-range ground transportation-planning and operations initiatives at Logan Airport, as well as at other Massport facilities. This work may include collecting and analyzing traffic counts and turning movements, collecting and analyzing mode share data, and observing and recording commercial parking utilization. It is likely that most, if not all of the work would entail counting Silver Line riders, and possibly other transit and shuttle bus riders as well.

CTPS may be asked to review, summarize, and analyze data sets generated from surveys of air passengers done by Massport periodically, and to prepare maps using the CTPS GIS.

Products of Task 1

As appropriate, memoranda, charts, spreadsheets, and graphs documenting data collection and analysis efforts, and presenting and summarizing the results. As appropriate, memoranda, charts, spreadsheets, graphs, and maps related to review and analysis of air passenger survey data.

Task 2 Modeling and Transportation Systems Analysis

On behalf of the Boston Region MPO, CTPS maintains and applies a regional travel-demand model. CTPS has also developed and maintained the Logan Ground Access Mode Choice Model, which is used to forecast the volumes and modal distributions of travel to Logan Airport. In the past, the ground access model has been used to help assess the various alternatives included in the Airport Intermodal Transit Connector Environmental Assessment. More recently, it was used to assist Massport in evaluating alternative pricing options for Logan Airport parking. As additional analysis needs arise, CTPS may be asked to apply its ground access model to forecast the changes in travel that could result from any proposed network or facility changes, as well as the potential effects of these travel changes on Massport facilities and nearby roadway systems.

Products of Task 2

Travel and associated forecasts, as required.

Task 3 Air Quality Technical Assistance

CTPS may be asked to provide Massport with technical assistance related to air quality planning. CTPS will be able to integrate Massport efforts that are designed to reduce vehicular pollution into the regional travel model to estimate regional impacts, as well as to test their conformity to the Clean Air Act.

Products of Task 3

Memoranda, charts, maps, and graphs presenting results of requested air quality technical assistance.

Task 4 On-Call Services

Massport will likely ask CTPS to provide assistance to the Department of Economic Planning and Development with regard to other regional transportation and ground access planning analyses under this contract, but the specific tasks have yet to be identified. These tasks may relate to a variety of Massport properties, including, but not limited to, Logan Airport and various properties in South Boston and East Boston.

Products of Task 4

Memoranda, charts, maps, and graphs documenting the work performed by CTPS under this task.

ESTIMATED SCHEDULE

It is estimated that this project will be completed 19 months after the notice to proceed is received. The proposed schedule, by task, is shown in Exhibit 1.

ESTIMATED COST

The total cost of this project for state fiscal year (SFY) 2010 is estimated to be $25,498. This includes the cost of 15.2 person-weeks of staff time and overhead at the rate of 88.99 percent. A detailed breakdown of state fiscal year 2010 estimated costs is presented in Exhibit 2. It is expected that supplemental funding, to carry the work through SFY 2011, will be available July 1, 2010.

AJS/KHQ/khq

Exhibit 1
ESTIMATED SCHEDULE
State Fiscal Years 2010 and 2011 Massport Technical Assistance

Task	Month 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Data Collection and Analysis																			
2. Modeling and Systems Analysis																			
3. Air Quality Technical Assistance																			
4. On-Call Services																			

Exhibit 2
ESTIMATED COST*
State Fiscal Years 2010 and 2011 Massport Technical Assistance

Direct Salary and Overhead	$25,413

Task	Person-Weeks M-1	P-5	P-4	SP-3	Temp	Total	Direct Salary	Overhead (@ 88.99%)	Total Cost
1. Data Collection and Analysis	0.0	0.0	1.2	1.2	8.0	10.4	$6,482	$5,768	$12,250
2. Modeling and Systems Analysis	0.2	0.6	1.4	0.0	0.0	2.2	$3,009	$2,678	$5,686
3. Air Quality Technical Assistance	0.2	0.0	0.2	0.0	0.0	0.4	$571	$509	$1,080
4. On-Call Services	0.6	1.2	0.4	0.0	0.0	2.2	$3,385	$3,012	$6,397
Total	1.0	1.8	3.2	1.2	8.0	15.2	$13,447	$11,966	$25,413

Other Direct Costs	$85
Travel	$85
TOTAL COST	$25,498

Funding
Future Massport Contract.

*Costs shown are those for SFY 2010. Additional funds will be available July 1, 2010, for SFY 2011.

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Jeffrey B. Mullan
MassDOT Secretary and CEO
and MPO Chairman

Arnold J. Soolman
Director, MPO Staff

MEMORANDUM

DATE December 17, 2009

TO Transportation Planning and Programming Committee of the Boston Region Metropolitan Planning Organization

FROM Robert Guptill, CTPS Transportation Planner

RE Work Program for: Core Efficiencies Study

ACTION REQUIRED

Review and approval

PROPOSED MOTION

That the Transportation Planning and Programming Committee of the Boston Region Metropolitan Planning Organization vote to approve the work program for the Core Efficiencies Study in the form of the draft dated December 17, 2009.

PROJECT IDENTIFICATION

Unified Planning Work Program Classification
Technical Support/Operations Analysis Projects

CTPS Project Number
11366

Client(s)
Metropolitan Planning Organization

CTPS Project Supervisors
Principal: Liz Moore
Manager: Robert Guptill

Funding
EOT §5303 3C Transit Planning Contract #TBD

IMPACT ON MPO WORK

This is MPO work and will be carried out in conformance with the priorities established by the MPO.

BACKGROUND

The MBTA is the nation's oldest public transportation system. Much of the existing system has its origins as streetcar lines built before 1900. The MBTA currently operates three heavy rail rapid transit lines, five light rail rapid transit lines, four bus rapid transit lines, and 178 bus routes. The heavy rail and light rail rapid transit system was completed in 1987 with the relocation of the Orange Line to the Southwest Corridor. Silver Line bus rapid transit routes were introduced to Boston starting in 2002. Over time, the bus system has grown in response to customer demand and now operates a large number of routes with high frequency service in dense urban areas and fewer routes with less frequent service in more suburban areas where auto ownership is greater.

The primary tool that the MBTA currently uses to guide the design and allocation of transit service within the Authority's service area and to measure service quality and productivity is the Service Delivery Policy, which establishes standards for coverage (how far a customer has to walk to reach a transit service), frequency and span of service (how often and the hours in which transit operates), vehicle loading (the number of passengers per vehicle), schedule adherence, and net cost per passenger. These standards have been used in the past to guide the provision of bus service; however, the MBTA currently faces a number of challenges that suggest that the existing standards and the services that they govern may need to change.

For MBTA services to remain viable, they must adapt to the aging population and emerging development patterns, as well as increasingly attract riders who have a choice between public and private transportation. In addition, the effects of the economic downturn on personal income, higher gas prices, and growing awareness of the environmental impacts of driving may affect this choice and will continue to change public attitudes about where and how transit services should be provided. These new expectations may lead to not only a different design of routes, but also perhaps different ways of providing service altogether.

The MBTA is also facing the prospect of increasing financial uncertainty. Sales tax revenues (the primary source of MBTA operational revenue) have continued to decline year-to-year, resulting in gaps between operating revenues and expenses. Over the past several years, the MBTA has periodically raised fares to increase operating revenue. At the same time, the MBTA has also tried to address the for additional service on some routes by reallocating service away from inefficient services (with the highest net-cost-per-passenger ratios). It is unlikely, however, that additional fare increases will be implemented in the next couple of years, making it necessary to rely on a combination of operating efficiencies,

ridership increases on some routes, and possibly service cuts on others to address projected deficits.

Taken together, the conditions discussed above argue for a reevaluation of where and how the MBTA provides transit service, as well as a review of the Service Delivery Policy to determine whether existing service standards need to be revised to guide future services.

OBJECTIVE(S)

This study has three major objectives. The first is to review the Service Delivery Policy and determine whether existing standards should be revised and/or new standards should be added that would help to identify the most efficient services. The second objective is to consider the MBTA system in light of these standards, as well as demographics and development patterns, and to propose concepts and detailed plans for how the system might be adjusted or potentially redesigned to make better use of its identified efficiencies. The third objective is to take these concepts and plans and determine the extent to which they could be refined to accommodate various levels of financial constraint.

WORK DESCRIPTION

Task 1 Review, Develop, and Apply Service Standards

In this Task, a review of service standards at the MBTA and peer agencies will be conducted and additional metrics that could potentially be used to evaluate service will be identified. The rationale for using each type of service standard will be discussed, as will the ways in which different metrics could result in different perceptions of service quality. The new service standards will be applied to existing services to evaluate their efficiency.

Subtask 1.1 Review Existing Service Standards

This Subtask will include a review of the MBTA's existing service standards as well as the service standards used by peer agencies.

The MBTA already measures the following service standards:

- Service coverage (the walking distance to the nearest service)
- Frequency (how often service runs)
- Span of service (the hours of operation)
- Passenger crowding
- Schedule adherence
- Net cost per passenger (operating cost divided by passengers per route or service)

In addition to identifying a list of service standards, this Subtask will also identify the metric used to evaluate each standard. A discussion of each standard will then analyze the implications of using those metrics. For example, a service standard for schedule adherence measured using mid-route timepoints or solely beginning and ending timepoints could result in very different results. Similarly, the metric used to measure service coverage may reflect a conscious choice between providing higher-frequency service with longer walking distances or lower-frequency service with shorter walking distances. Choice riders, for example, may have different preferences for transit service coverage than other demographic rider groups.

Subtask 1.2 Develop Potential New Service Standards

The Subtask will identify potential new service standards that reflect the changing ways in which MBTA service is perceived. While typical service standards tend to measure how the MBTA provides service, many new standards tend to measure how customers use that service. This use is reflective of changing demographic and development patterns among MBTA riders and in the MBTA service area. For example, given the aging of the population, the MBTA may wish to evaluate the extent to which its services provide one-seat rides. Changing development patterns may also encourage the MBTA to examine changes in how passengers access their trip origin and destination as well as the time required for passengers to complete their trips.

This Subtask will likely include an analysis of the following, though this list is by no means exclusive:

- Passenger comfort with respect to the condition of vehicles or waiting areas
- Customer service provided by MBTA personnel
- Accessibility (the extent to which services are accessible to persons with disabilities)
- Connectivity (the extent to which passengers can access their trip origin and destination)
- Transferring (the extent to which passengers must transfer to complete their trip)
- Trip time (the time required to complete a trip)
- Societal cost (the relative cost of an individual transit service given the presence of other transit services in the same area)[1]

Subtask 1.3 Apply Service Standards

This Subtask will analyze MBTA service in light of the identified existing and new service standards. This analysis will be qualitative in nature and limited to the general modes of service provided by the MBTA, with some discussion of differences between

[1] For example, the elimination of a bus route that is an area's only public transit service would have a higher societal cost than the elimination of a bus route in an area served by multiple remaining bus routes.

selected individual routes. The MBTA performs a biennial service evaluation of its bus system through the Service Plan. This analysis would not attempt to reach the depth and level of that evaluation.

Products of Task 1

Technical Memorandum that includes the following:

- List and description of recommended new service standards and metrics that could be incorporated into the Service Delivery Policy for service evaluation
- Evaluation of existing services with new service standards

Task 2 Identify Markets

MBTA service will be dramatically affected by changes in metropolitan Boston over the coming years. An aging population, declines in personal incomes due to the economic downturn, higher gas prices, and a growing awareness of the environmental impacts of driving will result in new development patterns that will shape how MBTA service is used. This Task will identify areas in which transit services could be added or consolidated to better meet existing and projected future demand. This will be accomplished through analysis of the following:

- Evaluation of recent ridership trends on existing MBTA services
- Existing and forecasted residential population densities and transit dependency
- Existing and forecasted employment densities and locations of other major activity generators
- Modeled trip origin-destination pairs

The analysis of population and employment forecasts will use the Boston Region MPO's regional travel demand model. Outputs from this model provide an estimate of the number of origin-destination pairs between areas as well as the relative cost of those trips by mode.

Products of Task 2

Technical Memorandum that includes the following:

- Maps of current and projected future population and employment densities, trip flow diagrams, transit markets, and relative modal cost-per-mile estimates
- Recommendations for relative transit service levels for the areas and populations that constitute the MBTA's core constituency

Task 3 Develop Concepts and Plans

This task will develop several potential concepts for service delivery using the service standards developed in Task 1 and the demographic and ridership analyses conducted in Task 2. The pros and cons of each concept will be presented, and general plans for route design and scheduling will be developed to show how each concept could potentially be realized. These plans would generally discuss potential routing concepts and their

accompanying schedules; however, they would not include detailed discussions of individual routes except in perhaps a few specific cases.

Potential concepts may include, but are not limited to, the following:

- Potential expansions of the rail rapid transit network
- Extensive bus rapid transit corridors with local bus service as necessary
- Limited-stop bus services overlaid on key bus route corridors with local bus service as necessary
- Neighborhood-based local bus service with connections to inter-neighborhood bus services
- Hub-and-spoke local bus service where several routes serve a central "hub" station at the same time, providing for a greater ease of transfer

For markets outside of the MBTA's core constituency (as defined in Task 2), this task will reference the findings of the ongoing Inner Suburban Mobility Study. This Study is exploring mobility options, provided by the MBTA or other entities, for suburban areas in the Route 128 corridor.

Products of Task 3

Technical Memorandum that includes the following:

- List and discussion of several concepts for service delivery
- Route design and scheduling plans for each concept
- Summary of findings from the Inner Suburban Mobility Study as they relate to coordination with MBTA services

Task 4 Evaluate Financial-Constraint Scenarios

The MBTA currently faces uncertainty regarding future levels of funding from the state. As such, this task will present several potential future financial-constraint scenarios for the MBTA. Each of the concepts developed in Task 3 will then be applied to each financial-constraint scenario, and a discussion of how the concepts may need to change or be adjusted in response to each scenario will be presented. This task will also consider the potential impacts of the various financial-constraint scenarios on relevant service standards. For example, some service standards may require an impossible level of expenditure given financial constraints and may need to be modified or eliminated.

Products of Task 4

Technical Memorandum that includes the following:

- List and discussion of several MBTA financial scenarios
- Discussion of potential impacts of each financial scenario on each service delivery concept
- Discussion of potential impacts of each financial scenario on relevant service standards

Task 5 Document Results

The Technical Memoranda developed in Tasks 1-4 will be integrated into a technical report.

Product of Task 5

- Final Technical Report

ESTIMATED SCHEDULE

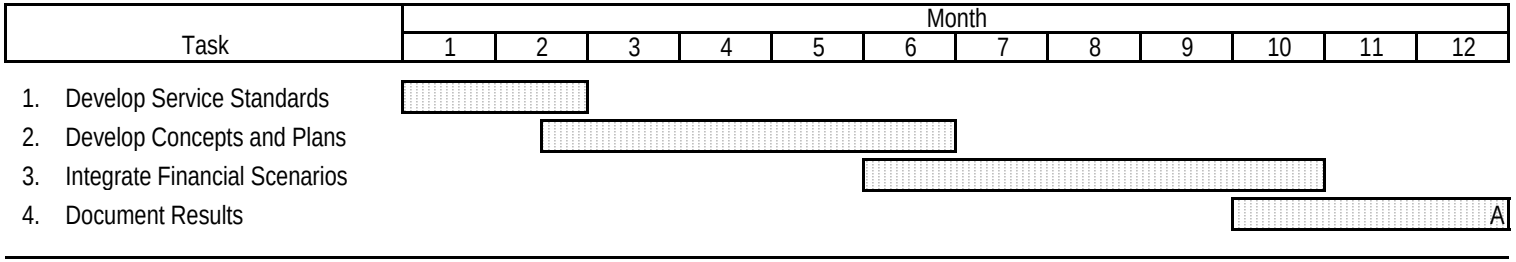
It is estimated that this project will be completed twelve months after the notice to proceed is received. The proposed schedule, by task, is shown in Exhibit 1.

ESTIMATED COST

The total cost of this project is estimated to be $100,197. This includes the cost of 38.5 person-weeks of staff time and overhead at the rate of 88.99 percent. A detailed breakdown of estimated costs is presented in Exhibit 2.

AJS/RSG/rsg

Exhibit 1
ESTIMATED SCHEDULE
Core Efficiencies Study



Products/Milestones

A: Technical report

Exhibit 2
ESTIMATED COST
Core Efficiencies Study

Direct Salary and Overhead	$100,197

Task	Person-Weeks										Direct Salary	Overhead (@ 88.99%)	Total Cost
	M-1	P-5	P-4	P-3	P-2	P-1	SP-3	SP-1	Temp	Total			
1. Develop Service Standards	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	$11,429	$10,170	$21,599
2. Develop Concepts and Plans	5.5	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	$19,984	$17,784	$37,767
3. Integrate Financial Scenarios	3.0	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	$15,891	$14,141	$30,032
4. Document Results	2.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	$5,714	$5,085	$10,799
Total	14.5	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	38.5	$53,017	$47,180	$100,197

Other Direct Costs	$0

TOTAL COST	$100,197

Funding
EOT §5303 3C Transit Planning Contract #TBD

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Jeffrey B. Mullan
MassDOT Secretary and CEO
and MPO Chairman

Arnold J. Soolman
Director, MPO Staff

MEMORANDUM

DATE November 5, 2009

TO Town of Wrentham

FROM MPO Staff

RE Community Transportation Technical Assistance Program: Town of Wrentham

Background

The Community Transportation Technical Assistance Program is a pilot project that provides technical advice on local transportation issues to municipal officials. Members of the Central Transportation Planning Staff (CTPS) and the Metropolitan Area Planning Council (MAPC) jointly staff this program. This Wrentham analysis is the initial study of this program.

Upon the request of the Town of Wrentham, transportation engineers and planners met with Wrentham officials on Friday, October 2, 2009, to learn more about traffic and safety concerns in the downtown and around the Wrentham Common. The site visit began in the Wrentham Town Hall with an initial discussion and overview. Participants then walked through the focus areas and discussed possible short- and long-term alternatives to calm traffic speeds, improve pedestrian access, and minimize traffic conflicts.

Participants: Town of Wrentham – Bill Bauser (MAPC SWAP representative), John McFeeley (Town Administrator), and Irving Priest (DPW Superintendent); MAPC – Jim Gallagher and Mark Racicot; CTPS – Seth Asante and Sean Pfalzer

MPO staff members have analyzed the following Wrentham intersections:

- Route 1A and Common Street
- Routes 1A and 140
- Route 140 and Common Street
- Taunton Street (Route 152), Common Street, and David Brown Way

The staff's findings and its recommendations to the Town of Wrentham for future consideration are presented below.

Intersection of Route 1A and Common Street

This is a wide intersection in the heart of the downtown. Its configuration brings about unnecessary conflicts among motorists and between motorists and pedestrians.

The wide travel lanes in both directions of Route 1A allow motorists to travel at high speeds through the downtown and require pedestrians to walk longer distances to cross the street. It is also difficult for motorists approaching from Common Street to turn left onto Route 1A. Because they have difficulty finding a gap in traffic, they often inch out into Route 1A, stopping one or both lanes of traffic, in order to complete that turning movement.

In addition, there are unrestricted movements of motor vehicles from business driveways, which leads to unsafe turns. Furthermore, most of the business driveways are too wide. The wide driveways create gaps in the sidewalk and allow motorists to travel at higher speeds, consequently reducing pedestrian safety.

Short-Term Alternatives

- Shorten the driveway width of the convenience store and relocate the crosswalk at a ninety-degree angle from the street corner of the pizza restaurant to the sidewalk in front of the convenience store to enhance pedestrian safety and accessibility. Include a median sign or refuge in the crosswalk to allow pedestrians to cross one lane at a time rather than wait for a gap in both lanes of traffic.
- Stripe crosswalks with median signs or refuges from the corner of the Wrentham Common to the south side of Common Street and to the west side of Route 1A to improve access between downtown businesses and the common.

Long-Term Alternative

This alternative would involve the construction of a small roundabout in the center of the Route 1A and Common Street intersection. The roundabout would slow traffic by inhibiting motorists from speeding through the intersection. In addition, it would allow motorists approaching from Common Street to complete turning movements onto Route 1A southbound without having to cross two travel lanes. The roundabout would improve pedestrian safety by providing shorter crosswalks and median refuges and enhance accommodations by facilitating widened sidewalks, benches and trees where possible.

The construction of a roundabout would require the removal of parking spaces on the west side of Route 1A. Business driveways would have to be consolidated to stop motorists from exiting directly into the roundabout. Parking would be encouraged in the rear of businesses located southeast of the roundabout through two-way driveways before and after the roundabout.

Intersection of Routes 1A and 140

This is a busy intersection that experiences some delays, primarily due to the lack of designated left-turn lanes and left-turn signal phases. The widths of the approaches on Route 140 do not accommodate turning lanes. Motorists on the Route 140 southbound approach to Route 1A can bypass the intersection by using Bank Street as a slip lane.

The use of Bank Street as a slip lane promotes speeding into downtown Wrentham. This is a safety concern both for pedestrians and for motorists reversing out of angled parking spots. Motorists reversing out of angled parking spots are less likely to see pedestrians, bicyclists, or other motorists. In addition, approaching motorists and especially bicyclists, who are usually

closer to the exiting vehicles, cannot see if anyone is in the vehicle until passing it. Lastly, although there is a stop sign at the end of Bank Street, it is positioned beyond the pedestrian crosswalk and too low to be easily noticed. Many motorists do not obey the stop sign.

Short-Term Alternatives

- Reposition the stop sign prior to the pedestrian crosswalk and at a proper height to ensure that it is visible to motorists.
- Remove the crosswalk that traverses Route 1A south of Bank Street to discourage conflict between pedestrian and motorists at this location.
- Change the angle parking on the west side of Route 1A from head-in to back-in to enhance safety for motorists and other roadway users.

(Back-in parking allows greater visibility for the driver to see motor vehicles, pedestrians, and bicyclists when pulling out of the parking space, resulting in fewer crashes. This configuration also allows car doors and trunks to open facing the sidewalk, making it safer for drivers and passengers, especially if some passengers are children. While back-in parking has been in use throughout the country for decades, it has recently received renewed attention. Research done by the staff uncovered several instances of municipalities that are using this technique. In addition, planners who were consulted generally indicated that this technique is seen as having clear safety benefits for bicyclists and pedestrians. And while it is seen to be safer for all users, it is particularly desirable for bicyclists who usually are traveling in the lane directly adjacent to angled parkers. Bicyclists not only have the worst view of the drivers backing out, but also are most vulnerable to injury.)

Long-Term Alternative

This alternative would close off Bank Street to traffic and bring the island (with the flag monument) adjacent to the existing sidewalk. A new right-turn lane would be constructed on the Route 140 southbound approach. The reconfiguration of this turning movement would slow the speed of motorists by requiring them to make a proper right-hand turn at the intersection. It would also enhance the driver's ability to see other roadway users in the downtown. The closure of Bank Street would eliminate one street crossing for pedestrians and allow the restripping of a mid-block crosswalk with medians on Route 1A between the intersection of Routes 140 and 1A and the roundabout.

This alternative would remove most of the existing parking on Bank Street.

Intersection of Route 140 and Common Street

Entering Route 140 southbound from Common Street is difficult due to the angle of the intersection, which requires motorists to look back over their left shoulder to check traffic. In addition, northbound traffic on Route 140 turns onto Common Street at high speeds.

Short-Term Alternative

- Convert the yield to a stop. Place a stop sign at the end of Common Street at Route 140, eliminating the high-speed merging of vehicles.

Long-Term Alternatives

There are three alternatives that involve changes to both the intersection of Route 140 and Common Street and the intersection of Taunton Street (Route 152), Common Street, and David Brown Way. The following descriptions of these alternatives focus on the intersection of Route 140 and Common Street.

Alternative 1: Relocate David Brown Way, which currently bisects the Wrentham Common, further east so that it meets square with Route 140 and directs traffic away from the intersection of Routes 140 and 1A. Close off the connection of Common Street and Route 140, preventing motorists from merging at high speeds between Common Street and Route 140. Instead, motorists would be required to make proper turns at the intersection of Route 140 and the relocated David Brown Way, in order to enhance safety.

Alternative 2: Close off David Brown Way and redirect traffic to the intersection of Common Street and Route 140 or to the intersection of Common Street and Route 1A. Bend Common Street into Route 140 so they meet at a 90-degree angle, and require motorists to stop before turning onto Route 140. This alternative would help reunite the Wrentham Common, but redirecting traffic from David Brown Way has the potential to increase traffic in the downtown.

Alternative 3: Narrow David Brown Way and make it one-way, only accessible for motorists heading south to Common Street. Bend Common Street into Route 140 so they meet at a 90-degree-angle, and require motorists to stop before turning onto Route 140. This alternative would redirect northbound traffic on Taunton Street (Route 152) to the intersection of Common Street and Route 140 or to the intersection of Common Street and Route 1A, potentially increasing traffic in the downtown.

Note: Alternatives 2 and 3 must be designed to accommodate school buses approaching Route 140 from Common Street. In addition, all alternatives would need to be coordinated with the Taunton Street (Route 152) project to ensure the proper alignment of the Taunton Street (Route 152), Common Street, and David Brown Way intersection.[1]

[1]The Taunton Street (Route 152) project consists of roadway reconstruction, widening, and sidewalk installation from Common Street near Route 1A southerly for approximately 0.8 miles. Its design status is 25% submitted, and it is included in the Transportation Improvement Program's Universe of Projects List.

Intersection of Taunton Street (Route 152), Common Street, and David Brown Way

This intersection is wide, with the north and south approaches unaligned, which makes the crossing of Common Street between David Brown Way and Taunton Street (Route 152) difficult.

The crosswalks at this intersection are unnecessarily long and poorly placed in the intersection, increasing the exposure of pedestrians to motor-vehicle traffic.

Short-Term Alternatives

- Relocate the pedestrian crossings so that they are perpendicular to the streets, thereby reducing their lengths.
- Construct a curb extension on the northwest corner and an island by the southeast corner of the intersection to further reduce the length of pedestrian crossings.
- Construct a mid-block crossing on David Brown Way to provide pedestrian access from one part of the Wrentham Common to the other.

Long-Term Alternatives

There are three alternatives that involve changes to both the intersection of Taunton Street (Route 152), Common Street, and David Brown Way and the intersection of Route 140 and Common Street. The following descriptions of these alternatives focus on the former intersection.

Alternative 1: Relocate David Brown Way, which currently bisects the Wrentham Common, further east so that it meets square with Route 140 and directs traffic away from the intersection

of Routes 140 and 1A. Bend Taunton Street (Route 152) into Common Street so they meet at a 90-degree-angle. This alternative would help channel traffic and shorten pedestrian crossings.

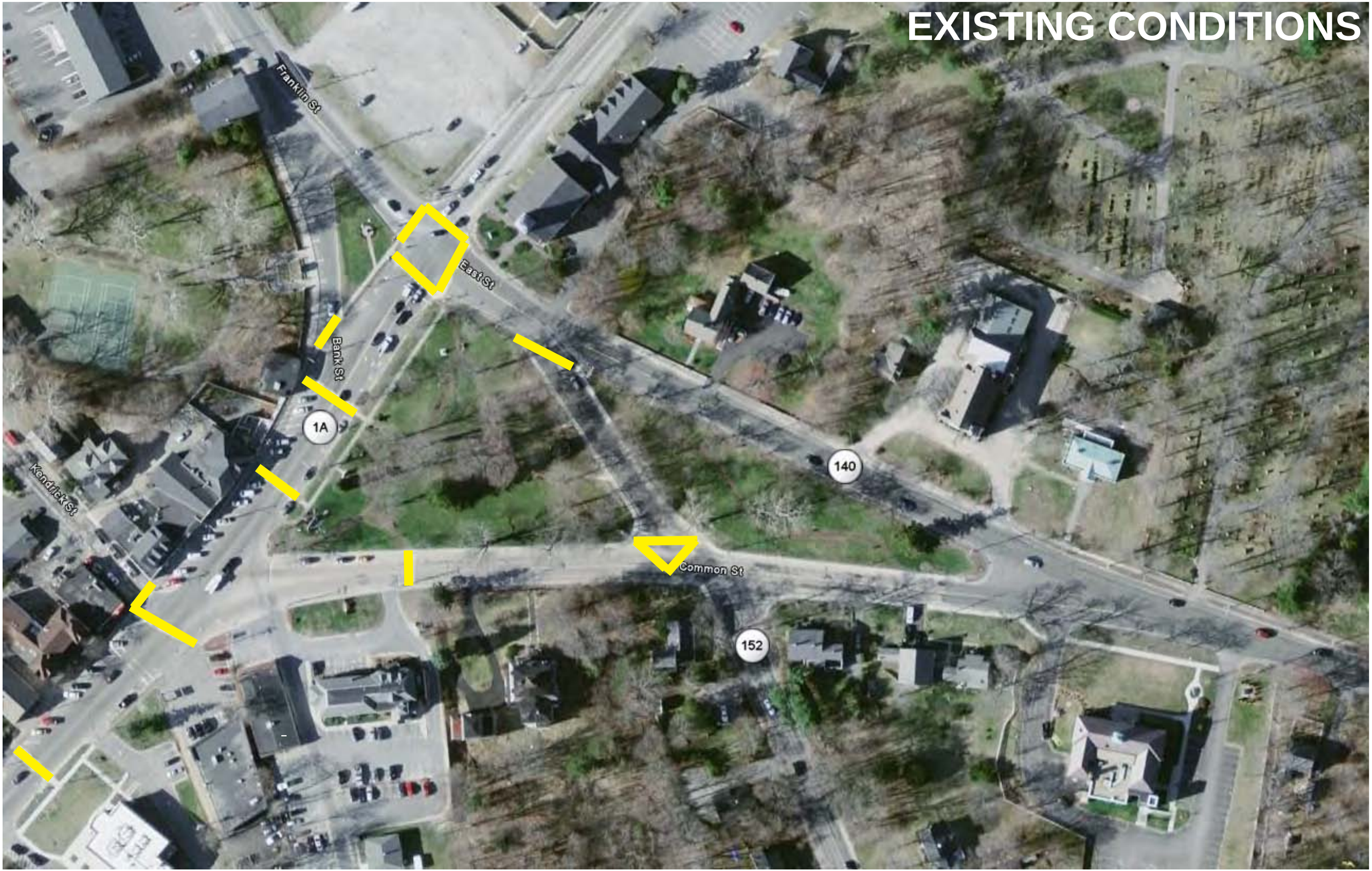
Alternative 2: Close off David Brown Way and redirect traffic to the intersection of Common Street and Route 140 or to the intersection of Common Street and Route 1A. Bend Taunton Street (Route 152) into Common Street so they meet at a 90-degree angle. This alternative would eliminate one vehicular approach and shorten pedestrian crossings as well as reunite the Wrentham Common. Redirecting traffic from David Brown Way has the potential to increase traffic in the downtown.

Alternative 3: Narrow David Brown Way and make it one-way, only accessible for motorists heading south to Common Street. This alternative would channel traffic and shorten pedestrian crossings.

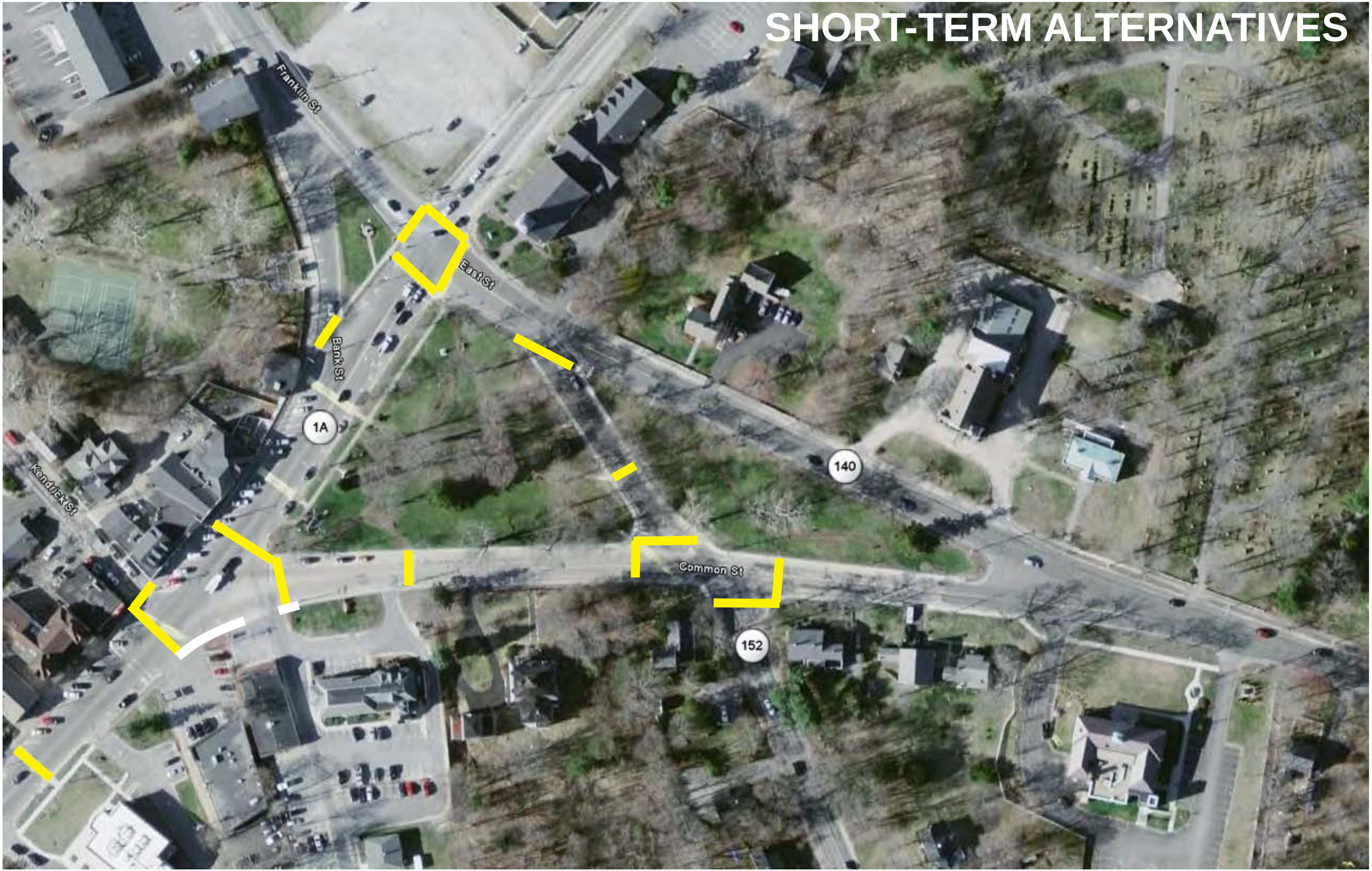
Note: All alternatives would need to be coordinated with the Taunton Street (Route 152) project to ensure the proper alignment of the Taunton Street (Route 152), Common Street, and David Brown Way intersection.[2]

[2]The Taunton Street (Route 152) project consists of roadway reconstruction, widening, and sidewalk installation from Common Street near Route 1A southerly for approximately 0.8 miles. Its design status is 25% submitted, and it is included in the Transportation Improvement Program's Universe of Projects List.

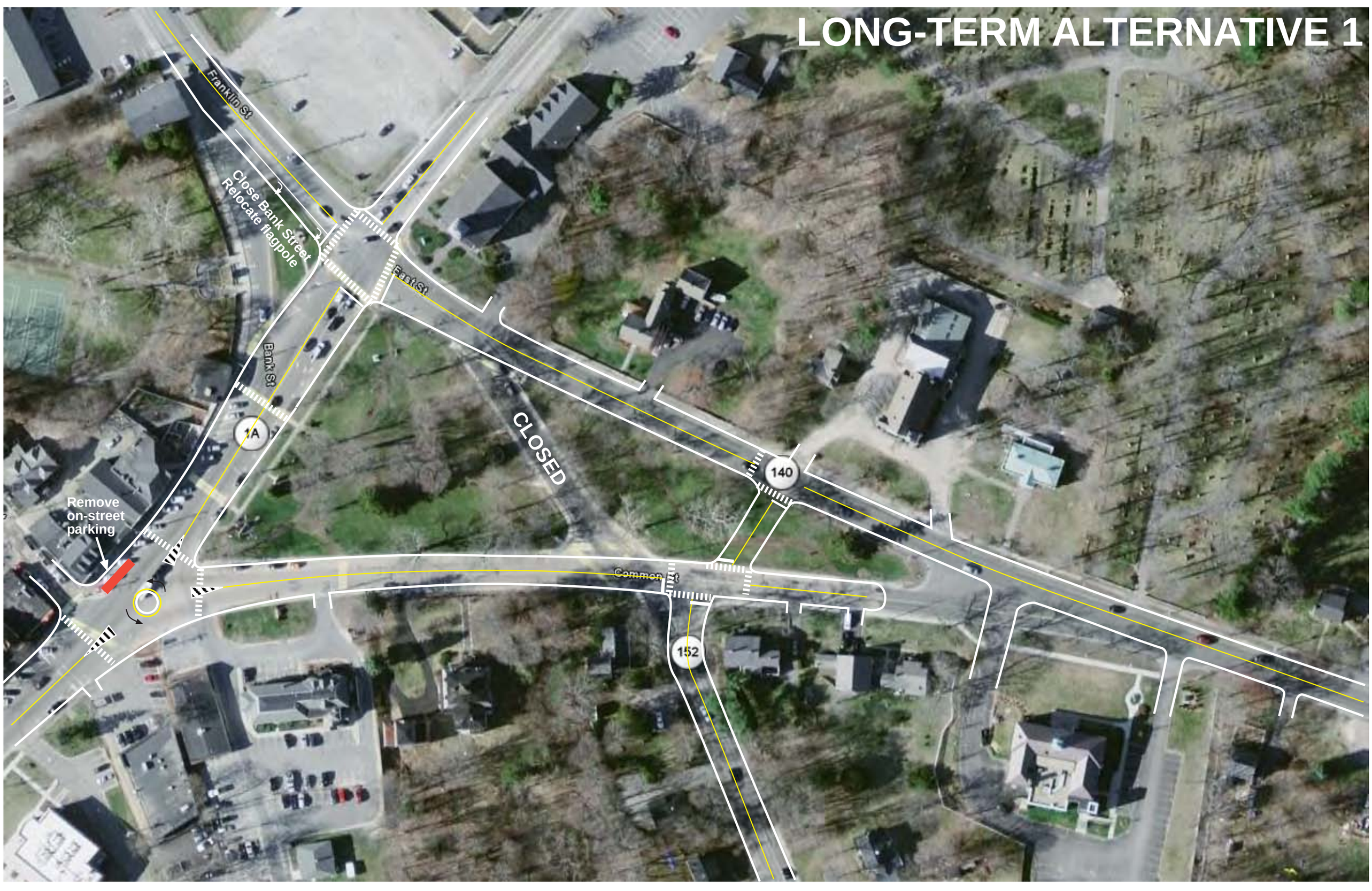
EXISTING CONDITIONS



SHORT-TERM ALTERNATIVES



LONG-TERM ALTERNATIVE 1



LONG-TERM ALTERNATIVE 2

LONG-TERM ALTERNATIVE 3