

Appendix 3.2-D

Ridership Errata Sheet



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Since the release of the Alternatives Description Technical Report for the South Coast Rail project, the Massachusetts Department of Transportation has identified some minor errors within the document. Minor refinements and corrections have been made (described below) to ensure accuracy. None of these changes constitute a substantial change to the document.

A version of this errata sheet on the Alternatives Description text has been posted to the project website. Please continue to monitor the website for updates to this sheet at: <http://www.southcoastrail.com/> (see "Reference Materials")

We apologize for any inconvenience or confusion. As always, please do not hesitate to contact Kristina Egan, Project Manager for the South Coast Rail project, at (617) 973-7314 and kristina.egan@state.ma.us with any questions.

Corrections to the Alternatives Description Technical Report

The following list identifies corrections made in the Alternatives Description Technical Report, Chapter 3, Ridership. Information that is to be deleted is ~~crossed out~~ and information that is to be replaced is underlined. In addition, a revised Chapter 3, which implements the corrections, is attached to the end of this errata form.

1. Page 3-7, Table 3-3

Table 3-3 Ridership Breakdown – Attleboro Alternatives

Station	Attleboro Electric	Attleboro Diesel
Barrowsville	680	620
Battleship Cove	240	200
Downtown Taunton	1,350	1,010
Fall River Depot	760	700
Freetown	210	180
King's Highway	470	430
Taunton Depot	360	310
Whale's Tooth	610	570
Total Station Inbound Boardings	4,680	4,020
Total Daily Ridership	9,360	8,040
Total New Linked Boardings	5,300	4,500
Total New System Wide Transit Boardings	13,310 11,130	11,280 9,570
Total Reduction in VMT	296,600	256,400

2. Page 3-8, Table 3-4

Table 3-4 Ridership Breakdown – Stoughton Alternatives

	Stoughton Electric	Stoughton Diesel
Battleship Cove	210	170
Easton Village	320	290
Fall River Depot	740	650
Freetown	240	170
King's Highway	460	390
North Easton	750	580
Raynham Place	550	510
Taunton	570 510	500 400
Taunton Depot	350 410	290 390
Whale's Tooth	600	520
Total Station Inbound Boardings	4,790	4,070
Total Daily Ridership	9,580	8,140
Total New Linked Boardings	5,900	5,000
Total New System Wide Transit Boardings	14,570 11,510	12,250 9,800
Total Reduction in VMT	228,000 295,900	174,000 228,700

3. Page 3-9, Table 3-5

Table 3-5 Ridership Breakdown – Whittenton Alternatives

Station	Whittenton Electric	Whittenton Diesel
Battleship Cove	200	130
Downtown Taunton	890	740
Easton Village	320	290
Fall River Depot	640	530
Freetown	160	130
King's Highway	390	340
North Easton	750	580
Raynham Place	600	560
Taunton Depot	360	290
Whale's Tooth	510	430
Total Station Inbound Boardings	4,820	4,020
Total Daily Ridership	9,640	8,040
Total New Linked Boardings	5,500	4,600
Total New System Wide Transit Boardings	13,410 10,430	12,040 9,570
Total Reduction in VMT	308,600 228,000	174,000

4. Page 3-9, Paragraph 1: *Rapid Bus Alternative*

According to ridership projections provided by CTPS, the Rapid Bus is expected to generate an increase in linked transit trips of ~~850~~ 1,700 daily linked trips, as shown in Table 3-6. Transit ridership is projected to be 2,100 daily inbound (one way) boardings at six new stations along the Rapid Bus alignment.

5. Page 3-10, Table 3-6

Table 3-6 Ridership Breakdown – Rapid Bus Alternative

Station	Rapid Bus
Downtown Taunton	400
Fall River Depot	420
Freetown	290
King's Highway	280
Galleria Station	130
Whale's Tooth	580
Total Station Inbound Boardings	2,100
Total Daily Ridership	4,200
Total New Linked Boardings	850 1,700
Total New System Wide Transit Boardings	4,200 3,720
Total Reduction in VMT	81,500

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Ridership

In order to estimate future ridership projections for the South Coast Rail project, the Central Transportation Planning Staff (CTPS) refined their regional travel demand model set to include regional transportation projects, and land use alternatives based on regional plans for the study area and the proposed operation plan for the project alternatives.

3.1 Model Basis

The CTPS model used a modeling process consistent with those of other major transportation projects in eastern Massachusetts. This travel demand model was refined specifically for the South Coast Rail study area. The model set that CTPS uses for forecasting travel demand is based on procedures and data that have evolved over many years and incorporated assumptions based on accepted practice, professional judgment and policy decisions relating to items such as model method, service plans and demographic assumptions. This modeling method allowed for a consistent comparison of the alternatives based on their projected ridership¹.

Existing Transit Modes

Connectivity to other transit modes provides a larger coverage area for the project while it increases mobility and regional opportunity. The model projections reflect riders coming by bus routes that come within one-half mile of the project stations. The model also incorporates connections to commuter rail lines, the central subway system (including both light and heavy rail lines), and bus routes in regional communities.

¹ South Coast Rail Travel Demand Analysis Results, Central Transportation Planning Staff, February 17, 2009

Regional Plan

The demographic forecasts were created by the local Regional Planning Agencies (RPAs) in the model area such as the Southeastern Regional Planning and Economic Development District (SRPEDD), Old Colony Planning Council (OCPC), and Metropolitan Area Planning Council (MAPC) for use in their most recently adopted Regional Transportation Plan (RTP).² The land use assumptions do not include the possible casino development in Middleborough. The transportation improvements included in this study are those highway improvement projects most likely to be built by 2030 and are included in the last federally approved and fiscally constrained Regional Transportation Plans in the model area. This includes the major transit projects assumed in the State Implementation Plan (SIP) and included in the Boston Region RTP, such as:

- Green Line Extension Project
- Urban Ring Project, Phase II
- Blue Line extension to Lynn
- Fitchburg commuter rail improvements
- Assembly Square, Orange Line Station
- Fairmont commuter rail station improvements
- MBTA commuter rail additional peak period trains
- Silver Line Phase I, II, and III
- 100 additional buses on heaviest load MBTA routes
- 1,000 additional parking spaces throughout the commuter rail system

Other transportation projects assumed in the analysis, based on the SRPEDD and the OCPC RTPs are shown in Table 3-1 below.

² South Coast Rail Travel Demand Analysis Results, Central Transportation Planning Staff, February 17, 2009

Table 3-1 Regional Transportation Plan Highway Improvement Projects

Regional Planning Agency	RTP Highway Improvement Projects
OCPC	Widen Route 3 to six lanes from exit 16 to exit 12 Route 3 southbound on-ramp from Cranberry Road in Kingston at interchange 8 Route 3 northbound on-ramp from Long Pond Road in Plymouth at interchange 5 Route 3 northbound off-ramp to Plymouth Plantation highway eastbound at interchange 4 Route 18 widening to four lanes from Route 139 in Abington to Highland Place in Weymouth Route 24 capacity enhancement from I-495 to I-93 Route 24 northbound on-ramp from route 140 westbound in Bridgewater at interchange 15 Route 25 interchange on route 25 at Bourne Road in Plymouth Route 106 widening to four lanes from Route 24 to Route 28 in West Bridgewater
SRPEDD	Route I-495 southbound on ramp from route 140 in Mansfield Route 44 widening to four lanes from route 58 in Carver to I-495 in Middleborough Route 24 widening to six lanes from route 140 in Taunton to I-495 in Raynham Brightman Street bridge connecting Fall River and Somerset Route 24 Interchange on Fall/River Freetown line between interchanges 8&9

Ridership forecasts were developed for a 2030 forecast year. For the No-Build Alternative, the model assumes enhancements to the existing commuter bus service. For the build alternatives, the transportation network was updated to reflect the project improvements and the model re-run for the various options. The outputs of these model runs were compared to the No-Build Alternative to see what changes in travel patterns occur to the transportation system due to the South Coast Rail project.

Population and Employment Densities

To establish where people are coming from and going to, the model takes into account the population and employment densities of the region. This is the basis for an origin/destination summary that ultimately translates into the number of people who would use the rail or bus alternatives. The model also accounts for the proximity of population densities to establish how the riders access the stations. Knowing whether riders walk, bike, drive or take the bus, for instance, ensures that the stations are properly designed with adequate sidewalks, bike storage, parking, and good connections to other transit modes.

3.2 Model Inputs

The travel demand model relies on the following elements and assumptions to estimate future ridership projections.

Operating Plan

The operating plan was developed using minimum acceptable service assumptions based on the MBTA Service Delivery Policy. Rail travel times for the Attleboro and Stoughton Alternatives, which include dwell times at the stations, were calculated for the 2030 operation³ and reflect future improvements and service modifications to the rail corridors. Rapid Bus travel times were developed based on existing constrained travel conditions where the alternative is envisioned to operate in mixed-traffic but unconstrained where the alternative would operate within an exclusive bus lane along the highway corridors.

The headways were based on minimum service acceptable under the MBTA Service Delivery Policy; the rail alternatives were assumed to provide one train every 40 minutes or three trains per peak period and the Rapid Bus Alternative to run bus service once every 15 minutes.

Station Locations

How well a transit alternative appeals to potential riders is directly related to how easily patrons can get to a station. The travel demand model, therefore, takes into account the surrounding transportation infrastructure and any barriers that make access to the station difficult, which could potentially add to the in-vehicle travel time to the stations.

Station Parking, Availability and Cost

In order to plan for and design station parking that accommodates future demand, the majority of proposed stations were modeled as if there were no constraints on the amount of available parking. Running the model unconstrained at the proposed stations ensures that the true attractiveness of a station would be reflected in the total number of riders who would be expected to use the new service. This applies to the riders who would arrive to the station by car. All other modes (i.e. patrons arriving to the station by walking or riding a bicycle) would be unaffected by the parking supply. Stations that do not offer parking, such as Battleship Cove and Easton Village, were modeled without

³ *Technical Memorandum on Network Simulation Analysis of Proposed 2030 Amtrak/MBTA Operations*

parking. Parking constraints were applied at Taunton and Barrowsville stations where the desire to accommodate future transit oriented development was a driving factor.

Fares

The model also considers the economics of using the proposed transit system. This allows the model to weigh the economic attractiveness of riding the proposed system compared to the economics of continuing to drive or using the existing commuter bus service. Fares for the No-Build Alternative were based on the existing commuter bus monthly fare structure; fares for the build alternatives including both the rail and bus alternatives were based on the current MBTA commuter rail monthly fare structure.

3.3 Summary of Results

For the purpose of portraying the ways in which this project shifts and adds new ridership, the results presented are new transit trips at the proposed South Coast Rail project stations, new linked-trips, new system-wide trips and the total reduction in vehicle miles travelled (VMT).

A summary of new station boardings pertains to the new South Coast Rail stations only and gauges the overall benefit to the region provided by each alternative.

The total number of linked trips per alternative represents the shift in mode choice due to a South Coast Rail project alternative. For instance, for mode of access, residents of the South Coast communities currently have few options outside driving to work. With the South Coast Rail project, people would have regional transit opportunity, which was previously not available, giving South Coast residents an additional mode by which they could get to work. The additional transit choice presented by the project would increase the number of people who would chose to take transit to work. This number is represented in the linked trips increase and represents the number of people who, without the project, would have otherwise driven to work.

New system-wide boardings represent the overall draw to the commuter rail transit system due to the South Coast Rail project, which represents an increase in capacity along other commuter rail lines as a particular alternative attracts system-wide new ridership. This total is also used to calculate overall cost effectiveness of the project.

The VMT measure quantifies how many miles of travel would be removed from the region due to the project. As people switch from driving to using the new transit project, the reduction in VMT measures air quality benefits due to the project.

No-Build Alternative

According to ridership projections provided by CTPS, the No-Build Alternative is expected to generate an increase in linked transit trips of 400 daily linked trips as shown in Table 3-2. Transit ridership is projected to be 2,360 daily inbound (one way) boardings at six stations within the South Coast Rail study area.

Table 3-2 Ridership Breakdown – No-Build Alternative

Station	Ridership
Downtown Fall River	880
Galleria Station	340
Mount Pleasant Street	120
Raynham Place	70
SRTA Terminal	750
Taunton Depot	200
Total Station Inbound Boardings	2,360
Total Daily Ridership	4,720
Total New Linked Boardings	400
Total New System Wide Transit Boardings	1,400
Total Reduction in VMT	75,100

Attleboro Alternatives

According to ridership projections provided by CTPS, Attleboro Electric and Attleboro Diesel are expected to generate an increase in linked transit trips of 5,300 and 4,500 daily linked trips, respectively, as shown in Table 3-3. Transit ridership is projected to be 4,680 and 4,020 daily inbound (one way) boardings at eight new stations along the Attleboro alignment.

Table 3-3 Ridership Breakdown – Attleboro Alternatives

Station	Attleboro Electric	Attleboro Diesel
Barrowsville	680	620
Battleship Cove	240	200
Downtown Taunton	1,350	1,010
Fall River Depot	760	700
Freetown	210	180
King's Highway	470	430
Taunton Depot	360	310
<u>Whale's Tooth</u>	<u>610</u>	<u>570</u>
Total Station Inbound Boardings	4,680	4,020
Total Daily Ridership	9,360	8,040
Total New Linked Boardings	5,300	4,500
Total New System Wide Transit Boardings	11,130	9,570
Total Reduction in VMT	296,600	256,400

Stoughton Alternatives

According to ridership projections provided by CTPS, Stoughton Electric and Stoughton Diesel are expected to generate an increase in linked transit trips of 5,900 and 5,000 daily linked trips, respectively, as shown in Table 3-4. Transit ridership is projected to be 4,790 and 4,070 daily inbound (one way) boardings at ten new stations along the Stoughton alignment.

Table 3-4 Ridership Breakdown – Stoughton Alternatives

	Stoughton Electric	Stoughton Diesel
Battleship Cove	210	170
Easton Village	320	290
Fall River Depot	740	650
Freetown	240	170
King's Highway	460	390
North Easton	750	580
Raynham Place	550	510
Taunton	510	400
Taunton Depot	410	390
<u>Whale's Tooth</u>	<u>600</u>	<u>520</u>
Total Station Inbound Boardings	4,790	4,070
Total Daily Ridership	9,580	8,140
Total New Linked Boardings	5,900	5,000
Total New System Wide Transit Boardings	11,510	9,800
Total Reduction in VMT	295,900	228,700

Whittenton Alternatives

According to ridership projections provided by CTPS, Whittenton Electric and Whittenton Diesel are expected to generate an increase in linked transit trips of 5,500 and 4,600 daily linked trips, respectively, as shown in Table 3-5. Transit ridership is projected to be 4,820 and 4,020 daily inbound (one way) boardings at ten new stations along the Whittenton alignment.

Table 3-5 Ridership Breakdown – Whittenton Alternatives

Station	Whittenton Electric	Whittenton Diesel
Battleship Cove	200	130
Downtown Taunton	890	740
Easton Village	320	290
Fall River Depot	640	530
Freetown	160	130
King's Highway	390	340
North Easton	750	580
Raynham Place	600	560
Taunton Depot	360	290
<u>Whale's Tooth</u>	<u>510</u>	<u>430</u>
Total Station Inbound Boardings	4,820	4,020
Total Daily Ridership	9,640	8,040
Total New Linked Boardings	5,500	4,600
Total New System Wide Transit Boardings	10,430	9,570
Total Reduction in VMT	228,000	174,000

Rapid Bus Alternative

According to ridership projections provided by CTPS, the Rapid Bus is expected to generate an increase in linked transit trips of 1,700 daily linked trips, as shown in Table 3-6. Transit ridership is projected to be 2,100 daily inbound (one way) boardings at six new stations along the Rapid Bus alignment.



Table 3-6 Ridership Breakdown – Rapid Bus Alternative

<u>Station</u>	<u>Rapid Bus</u>
Downtown Taunton	400
Fall River Depot	420
Freetown	290
King's Highway	280
Galleria Station	130
<u>Whale's Tooth</u>	<u>580</u>
Total Station Inbound Boardings	2,100
Total Daily Ridership	4,200
Total New Linked Boardings	1,700
Total New System Wide Transit Boardings	3,720
Total Reduction in VMT	81,500