

4.4 ENVIRONMENTAL JUSTICE

4.4.1 Introduction

This chapter identifies environmental justice populations within and adjacent to the South Coast Rail alternatives corridors and evaluates potential impacts to these populations that may result from the proposed South Coast Rail alternatives.

4.4.1.1 Resource Definition

Environmental justice is an important element of policy-making in transportation planning. Environmental justice policies focus on improving the natural environment in traditionally underserved communities, addressing disproportionate adverse environmental impacts that exist in those communities, and providing enhanced opportunities for participation in the decision-making process for those actions that may result in beneficial and/or adverse effects. One of the South Coast Rail project's goals is to improve transit services which would also likely provide benefits to environmental justice populations in terms of improved mobility and regional access.

Massachusetts's environmental justice policy¹ characterizes environmental justice populations as neighborhoods, comprised of block groups defined by the U.S. Census Bureau, which meet one or more of the following criteria:

- Median annual household incomes are at or below 65 percent of the statewide median (\$30,515 in 2000);
- Minority residents comprise 25 percent or more of the population;
- Foreign-born residents comprise 25 percent or more of the population; or
- Residents with limited English language proficiency represent 25 percent or more of the population.

4.4.1.2 Regulatory Context

The *Environmental Justice Policy*² of the Massachusetts EEA³ is an effort to protect the environment and public health in the Commonwealth. Environmental justice is based on the principle that all people have the right to be protected from environmental pollution and to live in and enjoy a clean and healthful environment. EEA's *Environmental Justice Policy* makes environmental justice an integral consideration in the implementation of all state environmental programs including, but not limited to, granting financial resources, implementing and enforcing laws, regulations, and policies, and providing access to both active and passive open space. The policy focuses attention on minority and low-income neighborhoods in Massachusetts where residents have traditionally been unaware of or unable to participate in environmental decision-making or to gain access to state environmental resources.

¹ Executive Office of Energy and Environmental Affairs (EEA). 2002. Environmental Justice Policy of the Massachusetts Office of Energy and Environmental Affairs. Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs.

² EEA. 2002. Environmental Justice Policy of the Massachusetts Office of Energy and Environmental Affairs, Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs.

³ Formerly known as the Massachusetts Executive Office of Environmental Affairs.

This chapter addresses the requirements of the statutes, regulations, and guidance documents listed below.

- Executive Order (EO) 12898⁴ states “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low-income populations.”
- The Army Corps of Engineers, in complying with EO 12898, utilizes the guidance provided by the USEPA. USEPA defines environmental justice as “The fair treatment and meaningful involvement of all people, regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal and commercial operations or the execution of federal, state, local and tribal programs and policies.”⁵ USEPA has responsibility for the consideration of environmental justice in Clean Air Act reviews.
- The Federal Transit Administration (FTA), Federal Railroad Administration (FRA) and Federal Highway Administration (FHWA) are U.S. Department of Transportation (DOT) agencies which are Cooperating Agencies for this Federal Action. U.S. DOT Order 5610.2,⁶ Environmental Justice in Minority and Low-Income Populations, requires all DOT agencies to determine whether activities will have an adverse impact on minority and low-income populations. DOT agencies must determine if adverse effects are predominantly borne by a low-income or minority population and if adverse effects are appreciably more severe than the adverse effect that would be suffered by the non-minority or non-low-income population.

The Secretary of the Executive Office of the EEA issued a Certificate on the ENF on April 3, 2009. Included in the Certificate are a number of requirements defining the scope of the DEIR, including environmental justice:

- The DEIR should define and include maps identifying the location of environmental justice populations in the project area.
- The DEIR should describe specifically how the project will provide tangible benefits to environmental justice communities identified in the ENF.
- The DEIR should identify any potential for disproportionate impacts on environmental justice communities that may result from the proposed project, including with regard to traditional cultural properties, and any specific proposed mitigation. This includes

⁴ Clinton, President William J. 1994. Executive Order: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The White House: Washington, DC.

⁵ Environmental Protection Agency. 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analysis. EPA, Office of Federal Activities. Washington, DC.

⁶ US Department of Transportation. 1997. Department of Transportation (DOT) Order to Address Environmental Justice in Minority Populations and Low-Income Populations. Federal Register, Vol. 62, No. 72, pages 18377-18381. Washington, DC. The DOT Order was revised in May 2012- http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/order_56102a/index.cfm.

- identifying potential adverse effects on any traditional cultural properties of significance to Native American Tribes, and mitigation. The DEIR should include a list of specific mitigation commitments to address noise and vibration impacts to environmental justice neighborhoods. Mitigation should include specific commitments on how [increased property values in environmental justice communities] will be addressed, and specify how [financial impacts to environmental justice communities in Fall River as a result of property acquisition] will be mitigated as part of the project.
- The DEIR should include an update on MassDOT’s outreach efforts to environmental justice populations.
 - The DEIR should evaluate safety impacts in the context of the *Environmental Justice Policy* including strategies to enhance public participation in the environmental review process.⁷

The Secretary’s Certificate on the DEIR/DEIS required further analysis or discussion of certain impacts to environmental justice populations in the FEIR. The Certificate stated that the FEIR should:

- Include a list of specific mitigation commitments to address noise and vibration impacts to environmental justice neighborhoods;
- Include an update on the investigation of potential adverse effects on any traditional cultural properties of significance to Native American Tribes. The FEIR should clarify if there will be a disproportionate adverse impact to an environmental justice community with regard to traditional cultural properties, and if so, what mitigation will be implemented;⁸
- Specify how financial impacts to environmental justice communities in Fall River as a result of property acquisition] will be mitigated as part of the project;
- Include further discussion and specific commitments on how [increased property values in environmental justice communities] will be addressed (for example, clear commitments to affordable housing as part of the project’s station TOD plans, or other measures);
- Include an update on MassDOT’s outreach efforts to environmental justice populations; and
- Evaluate safety impacts in the context of EEA’s Environmental Justice policy.

4.4.1.3 Methodology

This section summarizes the methodology used to evaluate the potential direct (occurring at the same time and place as the action) and indirect effects (removed in time and space from the action, but still reasonably foreseeable) of the South Coast Rail project on environmental justice populations.

Evaluation of Direct Effects

Potential direct effects to environmental justice populations were evaluated for residence or job losses due to property acquisition, neighborhood fragmentation, increases in noise levels and impacts to other

⁷ Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form. South Coast Rail Project. April 3, 2009.

⁸ Refer to Chapter 4.8 Cultural Resources for all information pertaining to traditional cultural properties.

resources. If any impacts to these resources in environmental justice neighborhoods were found to be substantive, then a comparison of impacts to non-environmental justice neighborhoods was made to determine if the significant adverse impact would be predominantly borne by environmental justice populations or whether it is appreciably more severe or greater in magnitude than the adverse impact that will be suffered by the non-environmental justice population in the same community. Environmental justice neighborhoods were defined at the Census block group level based on median household income, presence of those who identify themselves as being of a minority, foreign-born residents, and those with limited English proficiency.

Property acquisition requirements in environmental justice neighborhoods were identified by reviewing areas where construction would be required for each of the alternatives with respect to those neighborhoods to determine where the rail corridors, stations, or layover facilities would pass through or be located within them. For the purposes of this evaluation, “construction” is defined as upgrading existing rail lines, reconstructing removed rail lines along out-of-service railroad alignments, constructing new railroads, replacing existing railroad bridges and culverts, constructing new permanent or temporary railroad bridges, reconfiguring at-grade road/railroad crossings, and constructing new grade-separated road/railroad crossings. Environmental justice neighborhoods were outlined by Census block group according to the criteria cited above, and plotted on aerial photographs with the preliminary plans of each alternative for the evaluation.

“Property Acquisition” is defined as taking a greater than 500-square-foot portion, or a sliver greater than 10 feet wide, of any parcel outside of the existing right-of-way to accommodate permanent impacts, and is based upon preliminary engineering plans. Temporary construction impacts outside of the existing right-of-way would not require property acquisition and are not considered in this evaluation. Slivers less than 10 feet wide or temporary construction easements were not considered in the evaluation of property acquisition because given the scale and accuracy of the preliminary engineering plans, these are likely to be eliminated in final design. Maps and aerial photographs were examined in reference to preliminary engineering plans to identify encroachments into environmental justice neighborhoods. Final engineering plans may show an increase or decrease of the actual area of acquisition required. Adverse impacts to environmental justice populations were determined if the property acquisition would result in loss of residences or jobs. Such impacts would be further characterized as substantive if they represent a large portion of total residencies or jobs in a community and are located in a neighborhood with a high concentration of low-income and/or minority residents.

Neighborhood fragmentation was evaluated by examining aerial photographs and observing environmental justice neighborhoods to qualitatively determine if neighborhood continuity across the alignments would be disrupted by any of the alternatives.

Selected other environmental impacts to environmental justice populations were also evaluated. Because disproportionate impacts to environmental justice communities are predicated on the potential for significant impacts in other environmental categories, only the environmental impact categories with significant impacts under the Build Alternatives were studied in detail in this analysis. The specific topics included in the environmental justice assessment are: socioeconomics, noise, and vibration. Issues related to traditional cultural properties are addressed in Chapter 4.8, *Cultural Resources*. Direct impacts to environmental justice populations from changes in these other resources were evaluated in relationship to the environmental justice neighborhoods.

For each of these resource areas, substantive adverse impacts in environmental justice neighborhoods were compared with impacts in non-environmental justice neighborhoods to determine if environmental justice populations would be disproportionately impacted. This comparison of adverse impacts was conducted on a regional basis (the South Coast Rail study area) to coincide with the evaluation of regional benefits that would be realized by environmental justice populations as indirect effects, described below.

The following topics would not have the potential to result in significant adverse impacts on environmental justice populations and were not evaluated in detail as part of this environmental justice assessment:

- Chapter 4.9, *Air Quality*, includes a review of ambient air quality and modeled emissions from the trains to identify where adverse impacts to air quality would occur, including within environmental justice neighborhoods. The study concluded that the electric train alternatives would not adversely impact local air quality, and the diesel train alternatives' impact would be very small (less than a 1.5-percent increase in pollutant levels) and would not result in air pollutant concentrations in excess of the National Ambient Air Quality Standards (NAAQS). Based on this conclusion, there would be no air quality impacts to environmental justice populations.
- Chapter 4.10, *Protected Open Space and Areas of Critical Environmental Concern*, identifies where acquisition of protected open space or publicly owned parcels within ACECs would adversely impact these properties. While the alternatives do involve the acquisition of protected open space, these acquisitions do not occur in environmental justice areas and thus do not have the potential to disproportionately impact environmental justice populations.

Temporary impacts were not evaluated in detail because they would be mitigated through construction best management practices and any impacts after mitigation would not have a lasting effect on adjacent communities.

Evaluation of Indirect Effects

Potential indirect effects to environmental justice populations were also evaluated based on the review of station alternatives with respect to environmental justice neighborhoods. This analysis also included a review of indirect impacts to environmental justice populations in nearby communities likely served by the stations. Potential benefits to environmental justice communities are an indirect effect of the South Coast Rail project. A study⁹ conducted by the Central Transportation Planning Staff (CTPS) of the Boston Metropolitan Planning Organization examined how the South Coast Rail alternatives would affect travel accessibility and mobility for environmental justice populations in Taunton, Fall River, and New Bedford. Results of that study are incorporated in this chapter; the study is provided in Appendix 4.4-A.

Potential indirect socioeconomic impacts due to changes in property values were evaluated qualitatively through reference to the *South Coast Rail Economic Development and Land Use Corridor Plan* and the applicable literature.

⁹ CTPS. 2009. *South Coast Rail Environmental Justice Study*. Memorandum from CTPS to the South Coast Rail Project Interested Parties. Boston Metropolitan Planning Organization, Central Transportation Planning Staff: Boston.

4.4.2 Existing Conditions

This section discusses the presence of minority, foreign-born, low-income and limited English language proficiency populations within the study area for the South Coast Rail project.

4.4.2.1 Regional Overview of Environmental Justice Populations

Table 4.4-1 lists the communities that would be served or that could be impacted by the alternatives under consideration.¹⁰ The South Coast Rail alternative railroad alignments pass through or near these 27 communities, and new station sites are within or near each. These communities constitute the environmental justice study area.

Acushnet	Foxborough	Raynham
Attleboro	Freetown	Rehoboth
Berkley	Lakeville	Rochester
Canton	Mansfield	Sharon
Dartmouth	Mattapoisett	Somerset
Dighton	Middleborough	Stoughton
Easton	New Bedford	Swansea
Fairhaven	North Attleborough	Taunton
Fall River	Norton	Westport

Low-income and minority populations in the South Coast Rail environmental justice study area are generally located in densely populated neighborhoods. These neighborhoods are frequently near contaminated sites, abandoned sites, and large sources of air pollution.

Portions of the following eight municipalities within the South Coast Rail environmental justice study area include environmental justice neighborhoods that may be directly affected or benefit from the service provided by the Stoughton or Whittenton Alternatives:

- Canton
- Stoughton
- Taunton
- Fall River
- New Bedford
- Dartmouth
- Fairhaven
- Swanson

Table 4.4-2 provides an overview of state-listed environmental justice communities as a percent of total municipal acreage. Such a designation comes from the regulatory framework for conducting environmental justice analysis in Massachusetts. Tables 4.4-3 and 4.4-4 identify the presence of

¹⁰The study area includes communities exclusively associated with alternatives included in the DEIS/DEIR but not advanced to the FEIS/FEIR, (Attleboro and Rapid Bus) as described in Chapter 3 – Alternatives. These communities would not be impacted by the Stoughton and Whittenton alternatives analyzed in this FEIS/FEIR.

environmental justice populations (minority, low income, foreign-born, and limited English proficiency) and minority populations, respectively, in these ten communities.

Table 4.4-2 State-Listed Environmental Justice Areas¹ in South Coast Communities

Municipality	Total Municipal Acreage	Acreage within Designated Environmental Justice area	Percent Designated as Environmental Justice Area				
			Designated Environmental Justice area	Defined By Specific Criteria			English Proficiency
				Foreign-Born	Low Income	Minority	
Canton	12,489	190	1.5	0.0	0.0	1.5	0.0
Dartmouth	39,653	1,044	2.6	1.6	1.0	0.0	0.0
Fairhaven	7,942	223	2.8	0.0	2.8	0.0	0.0
Fall River	24,668	3,705	15.0	4.5	13.5	1.9	0.2
Mansfield	13,072	879	6.7	0.0	0.0	6.7	0.0
New Bedford	12,979	4,091	31.5	11.6	26.2	20.8	2.6
Stoughton	10,538	1,685	16.0	12.3	0.0	3.0	0.0
Swansea	14,694	999	6.8	0.0	6.8	0.0	0.0
Taunton	30,878	1,165	3.8	0.0	2.3	2.6	0.0

Source: U.S. Census data (2000), MassGIS.

1 Environmental justice areas can be designated based on multiple independent criteria. The table presents the cumulative environmental justice areas for all criteria as well as the total area designated by the specific criteria indicated.

Table 4.4-3 State-Listed Environmental Justice Populations¹ in South Coast Communities

Municipality	Percent of Population Living in Environmental Justice Areas				
	Defined by Any Criteria	Defined By Specific Criteria			
		Foreign-Born	Low Income	Minority	English Proficiency
Canton	4.9	0.0	0.0	4.9	0.0
Dartmouth	11.8	7.5	4.3	0.0	0.0
Fairhaven	9.7	0.0	9.7	0.0	0.0
Fall River	57.3	21.6	51.9	8.7	2.8
Mansfield	8.7	0.0	0.0	2.5	0.0
New Bedford	68.2	29.1	55.2	41.7	7.2
Stoughton	10.9	0.9	0.0	1.3	0.0
Swansea	5.7	0.0	5.7	0.0	0.0
Taunton	12.7	0.0	9.7	6.0	0.0

Source: U.S. Census data (2000), MassGIS.

1 Environmental justice areas can be designated based on multiple independent criteria. The table presents the cumulative population in environmental justice areas for all criteria.

As a whole, less than three percent of the land area of the 27 South Coast communities in the study area has an environmental justice neighborhood designation. These environmental justice neighborhoods contain approximately 21 percent of the population of the 27 communities. Approximately 84 percent of the total environmental justice population is located in Fall River or New Bedford, and approximately 45 percent of the environmental justice neighborhood land area is within these two communities.

The eight municipalities are primarily comprised of those who identify themselves as White, with varying shares of those who identify themselves as Black or African American, Asian, American Indian or

Alaska Native, Native Hawaiian or Other Pacific Islander, multiracial, and Hispanic or Latino residents, based on definitions from the U.S. Office of Management and Budget¹¹ and data from the U.S. Census.¹² Overall, minority populations represent less than 10 percent of the total population in each of the seven municipalities, with the exception of New Bedford where approximately 21 percent of the population identifies itself as a minority and Stoughton where 11.5 percent of the population identifies itself as the same. Each of the eight communities, with the exception of New Bedford, has a smaller percentage of minority populations than the statewide average of 15.5 percent. Those who identify themselves as Hispanic is the most common minority population in Fall River, New Bedford, and Taunton. The minority population in Fairhaven and Swansea is primarily multiracial and Dartmouth is identified as “Other.”

Table 4.4-4 Racial and Ethnic Composition of South Coast Communities

Municipality	Total Population	Percent of Population by Race							
		White	Black	American Indian	Asian	Pacific Islander	Other	Multiracial	Hispanic ¹
Canton	20,775	92.5	2.9	0.1	3.0	0.0	0.5	0.9	1.4
Dartmouth	30,666	90.6	1.1	0.2	1.7	0.0	5.0	1.4	1.5
Fairhaven	15,821	96.2	0.6	0.0	0.3	0.0	0.8	2.0	0.5
Fall River	87,395	91.1	2.8	0.2	2.1	0.0	1.3	2.6	3.4
Mansfield	22,414	93.5	2.5	0.2	2.0	0.1	0.2	2.5	0.5
New Bedford	93,065	79.2	4.4	0.5	0.7	0.1	9.1	6.0	10.0
Stoughton	27,149	88.5	5.7	0.1	2.1	0.0	1.3	2.3	1.5
Swansea	15,901	96.3	0.4	0.1	0.8	0.0	0.9	1.6	1.3
Taunton	55,976	91.7	2.1	0.2	0.8	0.0	2.9	2.2	4.1
Statewide Average		84.5	5.4	0.2	3.8	0.0	3.7	2.3	6.8

Source: U.S. Census data (2000), MassGIS.

1 Hispanic populations are generally included as subsets within the other racial categories but are listed separately as well for clarity. Therefore, the percentages for each city will add up to more than 100 percent.

People who are physically, economically, or socially disadvantaged often have less access to an automobile and may face barriers to mobility. The correlation between automobile access and environmental justice populations was evaluated for the South Coast Rail environmental justice study area. Registered motor vehicle data were reviewed for each of the South Coast communities in the environmental justice study area (Table 4.4-5). Decennial Census data from 2000 reveals a negative correlation between environmental justice populations in the study area and the percentage of households reporting registered motor vehicles. Fall River and New Bedford, which have the greatest percentage of their total population being classified as protected under environmental justice regulations, reported the highest percentage of households without motor vehicles, at approximately 21 percent and 22 percent, respectively.

All other study area communities were below the statewide average of 12.7 percent of zero-car households. Fairhaven, Berkley, Rochester, Raynham, Dighton, and Freetown all reported motor vehicle ownership at greater than 97 percent of all households.

¹¹ http://www.whitehouse.gov/omb/fedreg_1997standards.

¹² “Overview of Race and Hispanic Origin” March 2001. <http://www.census.gov/prod/2001pubs/c2kbr01-1.pdf>.

Table 4.4-5 South Coast Communities: Percentage of Households with No Registered Motor Vehicles, 2000

Municipality	Percent of Households
Acushnet	5.6
Attleboro	8.1
Berkley	2.2
Canton	6.7
Dartmouth	6.4
Dighton	2.6
Easton	3.8
Fairhaven	7.0
Fall River	20.7
Foxborough	5.1
Freetown	2.9
Lakeville	3.7
Mansfield	5.0
Mattapoisett	3.5
Middleborough	4.8
New Bedford	21.7
North Attleboro	5.6
Norton	4.2
Raynham	2.7
Rehoboth	4.1
Rochester	2.5
Somerset	5.9
Sharon	3.4
Stoughton	5.6
Swansea	4.5
Taunton	9.3
Westport	4.3
Regional Average (of communities listed)	6.2
Statewide Average	12.7

Source: U.S. Census data (2000), MassGIS

Note: Communities above the statewide average are identified in bold.

4.4.2.2 Environmental Justice Populations within a 0.5 Mile of Proposed Alternatives

Environmental justice populations within 0.5 mile of the alternative alignments are summarized in Table 4.4-6 and described in subsequent sections. Accompanying figures show communities meeting environmental justice criteria based on minority, foreign-born, low income, and/or limited English proficiency populations along each alternative alignment and near each station.

Southern Triangle

In 2000, the population within 0.5 mile of the Fall River Secondary Rail Segment was 52,021 and the population within 0.5 mile of the New Bedford Main Line Rail Segment was 71,001.¹³ As presented on Figures 4.4-1a-e and 4.4-2a-c, environmental justice populations were identified primarily along the southern urban portion of both the New Bedford Main Line and Fall River Secondary in New Bedford and Fall River, respectively. Residents living in these neighborhoods most commonly meet low income and/or minority criteria. Neighborhoods with foreign-born residents were also identified along the New Bedford Main Line between the Acushnet River and the railroad, between Nash Street and Wamsutta Street. Foreign-born and low income residents were also identified south of the end of the Fall River Secondary.

Table 4.4-6 Summaries of State-Listed Environmental Justice Populations within 0.5 Mile of the Alternative Alignments

Alternative Alignment	Percentage of Total Population Living within a Designated Environmental Justice Area—Defined by Any Criterion ¹	Primary Criteria for Designation
Fall River Secondary Rail Segment	36.0	Low Income
New Bedford Main Line Rail Segment	50.4	Minority
Stoughton Electric Alternative and Stoughton Diesel Alternative	9.1	Low Income
Whittenton Electric Alternative and Whittenton Diesel Alternative	9.1	Low Income

Source: U.S. Census data (2000), MassGIS.
The table presents the cumulative environmental justice areas for all criteria.

Stoughton Alternatives

In 2000, the population within 0.5 mile of the Stoughton Alternatives was 88,744. This includes residents along the Stoughton Line from Canton Junction to Weir Junction, and along New Bedford Main Line from Weir Junction to Cotley Junction. Environmental justice populations were identified within 0.5 mile the Stoughton Alternatives under the minority (0.8 percent), foreign-born (0.6 percent), and low income (1.5 percent) criteria. As shown on Figures 4.4-3a-e, environmental justice populations identified along the Stoughton Alternatives are concentrated along the northern portion of the route in Canton (minorities) and Stoughton (foreign-born), and along the southern portion of the alignment in Taunton (low income).

Whittenton Alternatives

In 2000, the population within 0.5 mile of the Whittenton Alternatives was 91,951. This includes the population along the Stoughton Line from Canton Junction to Weir Junction, and the New Bedford Main Line from Weir Junction to Cotley Junction. There are no environmental justice populations within 0.5 mile the Whittenton Branch between Raynham Junction and Whittenton Junction. Environmental justice populations were identified within 0.5 mile of the Whittenton Alternatives under the minority (0.9 percent), foreign-born (0.6 percent), and low income (1.6 percent) criteria. As shown on Figure 4.4-4, environmental justice populations identified along the Whittenton Alternatives are concentrated along the Attleboro Secondary in Taunton. The southernmost environmental justice population (at the

¹³ Populations are based on MassGIS data, which presents information in block groups. Included in the calculation of population are all block groups that intersect the 0.5 mile buffer of each alternative alignment and station site.

intersection of the Stoughton Line and Attleboro Secondary, near Weir Junction) meets the low income criteria, while the northern environmental justice area is based on the concentration of minority and low income residents.

Stations

Because the greatest impacts—both adverse and beneficial—to designated environmental justice communities would likely be experienced in those areas within close proximity to proposed stations, a study area of 0.5 mile from proposed stations was identified. This section describes state-listed environmental justice populations within 0.5 mile from proposed station locations (Table 4.4-7).

Table 4.4-7 State-Listed Environmental Justice Populations within 0.5 Mile of the Proposed Station Sites

Station Site	Percent of Total Population Living within a Designated Environmental Justice Area ¹				
	Defined by Any	Defined By Specific Criteria			
	Criterion ²	Foreign-Born	Low Income	Minority	English Proficiency ³
King’s Highway	20.9	0.0	2.6	0.0	0.0
Whale’s Tooth	85.6	12.4	24.3	37.6	0.0
Freetown	0.0	0.0	0.0	0.0	0.0
Fall River Depot	50.2	0.0	50.1	5.1	0.0
Battleship Cove	88.7	22.3	14.3	5.5	7.2
Stoughton	26.7	26.7	0.0	0.0	0.0
North Easton	0.0	0.0	0.0	0.0	0.0
Easton Village	0.0	0.0	0.0	0.0	0.0
Raynham Park	0.0	0.0	0.0	0.0	0.0
Taunton (Dean Street)	21.1	0.0	5.8	0.0	0.0
Dana Street	27.7	0.0	17.9	28.6	0.0
Taunton Depot	0.0	0.0	0.0	0.0	0.0

Source: U.S. Census data (2000), MassGIS.

- 1 Environmental justice areas can be designated based on multiple independent criteria. The table presents the cumulative environmental justice areas for all criteria as well as the total area designated by the specific criteria indicated.
- 2 MassGIS calculates environmental justice populations assuming the entire sample population within an environmental justice-designated block group is an environmental justice population. If a block group meets one or more environmental justice criteria, then all population within that block group is considered as part of the environmental justice population. Additionally, environmental justice populations may meet one or more criteria for designation; therefore, the total percentage of environmental justice populations defined by any criterion is not a sum of the percentage of each individual criterion.
- 3 English language proficiency data are calculated based on households, not population, and total household information is not provided for block groups. However, the overall English language proficiency was calculated for the population within 0.5 mile of the Battleship Cove Station assuming the same percentage of households are within each block group, as population (for example, if 10 percent population is within one block group, then 10 percent of the households are within the block group also). When more than one block group reported households meeting the English language proficiency environmental justice criteria, the average percentage was calculated for these block groups.

Station Sites Common to All Rail Alternatives

Both the Stoughton and Whittenton Alternatives would have eleven new commuter rail stations. Ten stations are common to all rail alternatives. The Taunton (Dean Street) Station would be constructed under the Stoughton Alternatives while the Dana Street Station, also in Taunton, would be constructed under the Whittenton Alternatives.

A brief discussion of each station is provided below, including an evaluation of state-listed environmental justice populations within 0.5 mile of each station. Those stations common to both rail alternatives are listed first and the two unique stations are provided at the end of this section.

Stoughton Station—The relocated Stoughton Station would be shifted from its present location between Porter and Wyman streets to a new location south of the Wyman Street at-grade crossing (see Chapter 3). The proposed station site is privately owned and is currently occupied by commercial and industrial uses, including warehouses/office space used by the Alpha Chemical Company and property of the Murphy Coal Company (fuel storage and materials handling yard, parking lot, and vehicle repair garage).

The Stoughton Station site is surrounded by developed land in the center of Stoughton. Land uses within 0.5 mile of the relocated Stoughton Station include a mix of industrial, commercial, and residential, along with community facilities such as the Stoughton Public Library.

In 2000, the population of Stoughton was 27,149, while the population within 0.5 mile of Stoughton Station was 4,121. Environmental justice neighborhoods were identified within 0.5 mile of the site under the foreign-born (26.7 percent) criterion, as summarized in Table 4.4-7. Environmental justice communities in the vicinity of the relocated Stoughton Station are shown in Figure 4.4-3a. Environmental justice-classified foreign-born residents were identified on the northern, eastern and western sides of the proposed Stoughton station.

King's Highway Station Site—The King's Highway Station, in northern New Bedford along King's Highway east of Route 140, would occupy part of an approximately 55-acre site that is now a shopping plaza. The site would serve walk-in, bike-in, and drive-in customers.

In 2000, the population of New Bedford was 93,768, while the population within 0.5 mile of the King's Highway Station site was 5,866. Environmental justice neighborhoods were identified within 0.5 mile of the site under the low-income (2.6 percent) criteria, as summarized in Table 4.4-7 and shown on Figure 4.4-5. Environmental justice-classified low-income residents were identified along the eastern side of the New Bedford Main Line, approximately 0.5 mile south-southeast of the King's Highway Station site.

Whale's Tooth Station Site—The Whale's Tooth Station, at the Whale's Tooth parking lot, would be sited on an approximately 14-acre parcel on the New Bedford waterfront and was identified as the preferred site in the 2002 Final EIR on South Coast Rail. The City of New Bedford has constructed a parking lot on the site in anticipation of the South Coast Rail project. The station would include intermodal connections, potentially including ferry services. The site would serve walk-in, bike-in and drive-in customers.

In 2000, the population of New Bedford was 93,768, while the population within 0.5 mile of the Whale's Tooth Station site was 10,067. Environmental justice neighborhoods were identified within 0.5 mile of the site under the minority (37.6 percent), foreign-born (12.4 percent) and low-income (24.3 percent) criteria (Table 4.4-7 and Figure 4.4-6). Nearly all residents living within 0.5 mile of the proposed Whale's Tooth Station site are classified as environmental justice populations under the minority and low-income designation. A neighborhood approximately 0.4 mile north of the Whale's Tooth Station site is classified as environmental justice based on foreign-born residents, as well as minority and low-income resident concentrations.

Freetown Station Site—The Freetown Station on South Main Street would be located on an approximately 18-acre site is currently industrial and occupied by a self-storage business, and is near the Fall River Executive Park and the River Front Park. The vicinity of the proposed site is mainly forested, agricultural, and undeveloped, with some residential and industrial uses. The site would serve drive-in customers and customers shuttled between the station and the industrial parks.

In 2000, the population of Freetown was 8,472, while the population within 0.5 mile of the Freetown Station site was 1,002. Environmental justice neighborhoods were not identified within 0.5 mile of the site. Although minority, low-income, foreign-born, and limited English proficiency residents were reported within 0.5 mile of the Freetown Station site, these populations were not reported in concentrations high enough to meet Massachusetts' environmental justice criteria and therefore, are not considered environmental justice neighborhoods.

Fall River Depot Station Site—The Fall River Depot Station, 1 mile north of downtown Fall River at Route 79 and Davol Street, is currently occupied primarily by private commercial and industrial property, although a portion is owned by the City of Fall River.

In 2000, the population of Fall River was 91,938, while the population within 0.5 mile of the Fall River Depot Station site was 9,336. Environmental justice neighborhoods were identified within 0.5 mile of the site under the minority (5.1 percent) and low-income (50.1 percent) criteria (Table 4.4-7 and Figure 4.4-7). Environmental justice populations identified within 0.5 mile of the Fall River Depot Station site are due primarily to the concentrations of low-income residents. Neighborhoods meeting the minority and low-income environmental justice criteria were also identified along the Fall River Secondary, south of the Fall River Depot Station site, between Taylor Street and North Central Street.

Battleship Cove Station Site—The Battleship Cove Station, an approximately 2.2-acre site on the Fall River waterfront behind the Ponte Delgada Plaza, is anticipated to be a platform-only station and would be designed to serve walk-in customers, and pick-up/drop-off customers. The station would serve the downtown area and the Battleship Cove tourist area. The City of Fall River constructed a pick-up/drop-off loop road for the future commuter rail station as part of the Ponte Delgada Plaza.

In 2000, the population of Fall River was 91,938, while the population within 0.5 mile of the Battleship Cove Station site was 12,353. Environmental justice neighborhoods were identified within 0.5 mile of the site under the minority (5.5 percent), low-income (14.3 percent), foreign-born (22.3 percent), and English language proficiency (7.2 percent) criteria (Table 4.4-7 and Figure 4.4-8). Nearly the entire population surrounding the Battleship Cove Station site is classified within one of six environmental justice areas. Residents within 0.5 mile of the Battleship Cove Station site primarily meet the low-income environmental justice criterion, though foreign-born and minority populations are also present to the south.

North Easton Station Site—The North Easton Station would be located at the rear of the Roche Brothers Shopping Plaza. This retail plaza, anchored by a Roche Brothers Supermarket, occupies an approximately 10-acre site. New medical buildings have been constructed nearby and two additional buildings are planned. The station would likely share parking facilities with the medical buildings and would primarily serve drive-in customers, although the station may attract some walk-in customers from the shopping plaza and from nearby residential developments in Stoughton and Easton.

In 2000, the population in Stoughton was 27,149, in Easton 22,299, and the population within 0.5 mile of the North Easton Station site was 6,375. Environmental justice neighborhoods were not identified

within 0.5 mile of the site. Although minority, low-income, foreign-born, and residents with limited English proficiency were reported within 0.5 mile of the North Easton Station site, these populations were not reported in concentrations high enough to meet Massachusetts' environmental justice criteria and, therefore, are not considered environmental justice neighborhoods.

Easton Village Station Site—The Easton Village Station would be sited south of the historic H.H. Richardson train station. The site is limited to the railroad right-of-way and is within walking distance of downtown Easton. The site would be a village-style station serving walk-in and bike-in customers.

In 2000, the population in Easton was 22,299, while the population within 0.5 mile of the Easton Village Station site was 6,831. Environmental justice neighborhoods were not identified within 0.5 mile of the site. Although minority, low income, foreign-born, and residents with limited English proficiency were reported within 0.5 mile of the Easton Village Station site, these populations were not reported in concentrations high enough to meet Massachusetts' environmental justice criteria and therefore, are not considered environmental justice neighborhoods.

Raynham Park Station Site—The Raynham Park Station, at the former Raynham-Taunton Greyhound Park in Raynham, is now occupied by a simulcast/off-track betting facility and has large surface parking lots along Route 138 near the Raynham/Easton town line. The station would be on a portion of this approximately 80-acre site. The site would be designed to serve mostly drive-in customers with additional walk-in customers being drawn from future redevelopment on or near the site.

In 2000, the population of Raynham was 11,739, while the population within 0.5 mile of the Raynham Park Station site was 2,438. Environmental justice neighborhoods were not identified within 0.5 mile of the Raynham Park Station site. Although minority, low income, foreign-born, and limited English language proficiency residents were reported within 0.5 mile of the Raynham Park Station site, these populations were not reported in concentrations high enough to meet Massachusetts' environmental justice criteria and therefore, are not considered environmental justice neighborhoods.

Taunton Depot Station Site—The Taunton Depot Station, at the rear of the Target Plaza, would be located on a site approximately 14 acres in size and accessible via Route 140. The shopping plaza is a newer big-box retail site that contains Target, Home Depot, and other stores. The station would serve customers that drive to the station, as well as potential future walk-in or bike-in customers if redevelopment were to occur.

In 2000, the population of Taunton was 55,976, the population of Berkley was 5,749, and the population within 0.5 mile of the Taunton Depot station site was 6,320. Environmental justice neighborhoods were not identified within 0.5 mile of the site. Although minority, low income, foreign-born, and limited English language proficiency residents were reported within 0.5 mile of the Taunton Depot Station site, these populations were not reported in concentrations high enough to meet Massachusetts' environmental justice criteria and therefore, are not considered environmental justice neighborhoods.

Station Sites that Differ Between the Rail Alternatives

Taunton (Dean Street) Station Site – Stoughton Alternatives—The Taunton Station is at the Dean Street site (Figure 4.4-19). The site is approximately 8 acres and is near Route 44 just north of the historic train station. Downtown Taunton is approximately 0.75 to 1 mile from the site. The site is bounded by Arlington Street, Belmont Street and the existing railroad and is primarily vacant. Currently, parcels comprising the site are owned by the City and by private entities. The City-owned parcel was a former

rubber plant that burned. The City of Taunton has invested in remediating this Brownfield site in anticipation of a future train station. The site is within walking distance of downtown and would be utilized for future TOD. The site would be a multi-modal transportation center serving walk-in, bike-in, and drive-in customers.

Adjacent parcels are forest to the north and east, residential to the west, and commercial to the south. Industrial, institutional (nursing home), and recreational/municipal (ball fields) properties interspersed with forest are east of the railroad right-of-way, and accessed from Longmeadow Road or Dean Street. Moderate-density residential is the predominant land use within 0.5 mile of the Taunton Station site, particularly north and west. A few commercial, industrial, and religious use, and undeveloped parcels are scattered throughout the vicinity.

In 2000, the population of Taunton was 55,976, while the population within 0.5 mile of the Taunton Station site was 8,252. Environmental justice neighborhoods were identified within 0.5 mile of the site under the low-income (5.8 percent) criterion, as summarized in Table 4.4-7 and shown on Figure 4.4-9. Environmental justice areas were identified approximately 0.4 mile west of the Taunton Station site. Residents in this environmental justice area meet the low-income criterion for designation.

Dana Street Station Site – Whittenton Alternatives—The Dana Street Station would be located just south of the Danforth Street grade crossing, within walking distance of downtown Taunton. The site is currently a vacant lot. Surrounding land uses include industrial, residential, and agricultural. The station would serve walk-in, bike-in, and drive-in customers.

In 2000, the population of Taunton was 55,976, while the population within 0.5 mile was 2,882. Environmental justice neighborhoods were identified within 0.5 mile of the proposed Dana Street station site which meet the low income (17.9 percent) and minority (28.6 percent) criteria, summarized in Table 4.4-7 and shown on Figure 4.4-10. The area west of the Dana Street station site is classified as an environmental justice neighborhood based on the percentage of low income and minority residents, but populations immediately adjacent to the station site were not reported in concentrations high enough to meet Massachusetts' environmental justice criteria.

Layover Facilities

Both the Stoughton and Whittenton Alternatives (diesel and electric alternatives) would require two overnight layover facilities—one on the Fall River Branch and one on the New Bedford Main Line.

Weaver's Cove East Facility Site

The proposed Weaver's Cove East site layover facility would be located on the east side of the right-of-way, opposite the formerly proposed Weaver's Cove LNG Site in Fall River (Figure 4.4-11). It would be located approximately 1.5 miles north of Fall River Depot Station and 2.6 miles north of Battleship Cove Station.

Currently vacant land, a portion of the Weaver's Cove East site was previously developed. Approximately one-half of the site is cleared of vegetation or includes remnant building foundations; the remainder of the site is vegetated. Surrounding land to the north, east, and south is residential; industrial land use is present to the southwest. Undeveloped land is immediately west of the site, adjoining the Taunton River. The industrial site to the southwest is a former Shell Oil facility, and

consists of completely cleared land with several large aboveground storage tanks and a short shipping dock.

Although there are no environmental justice communities within the layover site, an environmental justice neighborhood is located south of the proposed layover facility, to the east of the Fall River Secondary Rail Segment. Residents living within this neighborhood meet low income criteria for designation.

Wamsutta Facility Site

The proposed Wamsutta site layover facility would be located on the east side of the right-of-way, opposite the proposed Whale's Tooth Station and adjacent to an existing CSX freight yard (Figure 4.4-12). The site would be located 0.3 mile north of Whale's Tooth Station. The area is primarily characterized by industrial land uses and no commercial or residential properties or open space areas are located within close proximity to this site.

The Wamsutta site layover facility is located within an environmental justice neighborhood that meets low income and minority criteria for designation. Adjacent to the north of the proposed layover facility is an environmental justice neighborhood that also meets foreign-born criteria for designation.

Summary

The data indicate the South Coast Rail environmental justice study area has a substantial environmental justice population based on MassGIS criteria for determining such populations. The area around the Southern Triangle alignments contains the largest percent of the population (36 percent around the Fall River Secondary Rail Segment and 50.4 percent around the New Bedford Main Line Rail Segment) living within environmental justice-designated neighborhoods (as defined by block groups). Environmental justice populations living within 0.5 mile of the alternative alignments are primarily classified based on the low income criterion with the exception of the New Bedford Main Line Rail Segment where minority populations comprise the majority of the environmental justice designations.

MassGIS-designated environmental justice neighborhoods were identified within 0.5 mile of 7 of the 12 proposed station sites (see Table 4.4-8). The area within 0.5 mile of the Battleship Cove Station site in Fall River contains the largest percentage of population living within environmental justice-designated neighborhoods, at 88.7 percent. Low income was identified as the primary criteria for environmental justice designation around these station sites.

In general, the highest concentration of environmental justice populations is present near the southern portion of the Southern Triangle in urban areas of Fall River and New Bedford. The primary criterion for environmental justice designation in these areas is low income, although concentrations of minority and foreign-born residents were also identified in the study area, in particular, around proposed station sites. In many cases, populations met more than one of the environmental justice criteria, such as low income and minority, or foreign-born, minority, and low income. Environmental justice populations identified in New Bedford and Fall River were more widespread and diverse (met more criteria for environmental justice) than the populations in other towns in the South Coast region. Environmental justice populations in the other towns in the South Coast area, such as Canton, Stoughton, or Taunton, had moderate to high concentrations of environmental justice populations meeting one or two criteria for designation.

Table 4.4-8 Summary of State-Listed Environmental Justice Populations within 0.5 Mile of the Proposed Station Sites

Station Sites	Percentage of Total Population Living within a Designated Environmental Justice Area—Defined by Any Criterion ^{1,2}	Population Living within a Designated Environmental Justice Area—Defined by Any Criterion ^{1,2}	Primary Criteria for Designation
Stoughton	26.7	520	Foreign Born
King’s Highway	20.9	1,213	Low Income
Whale’s Tooth	85.6	8,937	Minority
Freetown	0.0	0	N/A
Fall River Depot	50.2	4,652	Low Income
Battleship Cove	88.7	10,965	Foreign-Born
North Easton	0.0	0	N/A
Easton Village	0.0	0	N/A
Raynham Park	0.0	0	N/A
Taunton	21.1	1,857	Low Income
Dana Street	27.7	411	Minority
Taunton Depot	0.0	0	N/A

Source: U.S. Census data (2000), MassGIS.

- 1 Environmental justice areas can be designated based on multiple independent criteria. The table presents the cumulative environmental justice areas for all criteria.
- 2 MassGIS calculates environmental justice populations assuming the entire sample population within an environmental justice - designated block group is an environmental justice population. If a block group meets one or more environmental justice criteria, then all population within that block group is considered as part of the environmental justice population. Additionally, environmental justice populations may meet one or more criteria for designation; therefore, the total percentage of environmental justice populations defined by any criterion is not a sum of the percentage of each individual criterion.

4.4.3 Impacts and Mitigation

4.4.3.1 Introduction

This section identifies adverse impacts to environmental justice populations as well as any benefits to these populations that may result from the implementation of the South Coast Rail project. Specifically, the evaluation considered property acquisition, change in noise or vibration levels or air quality, and the presence of traditional cultural properties and open space. If adverse impacts were identified, they were further evaluated to determine if state-listed environmental justice communities would experience a disproportionately high and adverse share of these impacts. The evaluation also considered beneficial effects that may be recognized as a result of the South Coast Rail project. Beneficial impacts include improved access to transit services making it easier to reach employment and educational opportunities, general mobility, and improved air quality.

Detailed information regarding potential impacts is provided in pertinent resource chapters in the FEIS/FEIR, including but not limited to Land Use, Socioeconomics, Transportation, Open Space, Visual Resources, Air Quality, Noise, Vibration, and Indirect Effects and Cumulative Impacts.

4.4.3.2 Property Acquisitions

No-Build (Enhanced Bus Alternative)

The improvements to existing bus service under the No-Build Alternative would not require property acquisitions and therefore there would be no property acquisition-related impacts to environmental justice areas.

Southern Triangle (Common to All Rail Alternatives)

Portions of the rail lines within the southern part of the South Coast Rail study area are common to all rail alternatives. These rail lines form a rough triangular shape running south from Myricks Junction to Fall River (Fall River Secondary Rail Segment) and from Weir Junction through Myricks Junction to New Bedford (New Bedford Main Line), and are therefore referred to as the Southern Triangle (Figure 1.4-1).

Fall River Secondary

Along the Fall River Secondary, one privately owned parcel would be acquired within an environmental justice neighborhood for the right-of-way and one parcel for a traction power facility (for the electric alternatives only) (Table 4.4-9 and Figure 4.4-2c).

Table 4.4-9 Fall River Secondary Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
Right-of-Way (All Rail Alternatives)						
Fall River	O-23-4	Private	Industrial	Industrial	Income, Minority	0.02
Traction Power Facility (All Electric Alternatives)						
Fall River	O-22-8	Private	Industrial	Commercial	Income, Minority	0.17
TOTAL (Right-of-Way and Traction Power Facility, All Electric Alternatives)						0.19

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various).

The small portion of the parcel that would be acquired for the right-of-way is along the west side of the Fall River Secondary Rail Segment near the intersection of Davol Street and Cedar Street. The land, which is industrial in nature, is necessary for construction of the upgraded railroad in this segment.

The portion of the parcel that would be acquired for the traction power facility is also along the west side of the Fall River Secondary Rail Segment, adjacent to the proposed Fall River Depot Station. This land is necessary for construction of a parallel substation for the electric alternatives. This parcel is a portion of a vacant industrial property and does not serve residential purposes.

Because of the small size of the acquisitions and the current function of affected parcels, no jobs or residences would be lost. Therefore, no adverse impacts to state-listed environmental justice populations would result.

New Bedford Main Line

One portion of a parcel in an environmental justice neighborhood would be acquired for the New Bedford Main Line right-of-way improvements and one portion of a parcel would be acquired for a traction power facility, as listed in Table 4.4-10 and shown in Figures 4.4-1a and 4.4-1e.

Table 4.4-10 New Bedford Main Line Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
Right-of-Way (All Rail Alternatives)						
Taunton	78-188	Public	Industrial	Industrial	Income	0.03
Traction Power Facility (Electric Alternatives)						
New Bedford	84-113	Private	Industrial	Industrial	Income, Minority	0.18
TOTAL (Right-of-Way and Traction Power Facility, Electric Alternatives)						0.21

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various).

The parcel in Taunton is along the east side of the right-of-way near Weir Junction. The parcel is identified as publicly owned, but is a small portion of an industrial property. A portion of the parcel is required to allow for construction of the upgraded railroad in this segment. There would be no impact to environmental justice populations from acquiring a small portion of this parcel because there would be no residence or job loss.

The parcel in New Bedford is along the west side of the right-of-way near the intersection of the railroad with Purchase Street. The parcel is a portion of a vacant industrial property. The parcel is required to allow for construction of a parallel substation for the electric alternatives. There would be no impact to environmental justice populations from acquiring a small portion of this parcel because there would be no residence or job loss.

Stoughton Alternatives (Electric and Diesel)

The Stoughton Line is currently used for commuter service from Canton to Stoughton. Rail service from there south to Weir Junction was discontinued in the 1950s and some track removed; however, the right-of-way still exists and the southernmost portion is used for freight service. In Stoughton, portions of four parcels in environmental justice neighborhoods would be acquired for the right-of-way; a portion of one parcel in Taunton would be acquired for a traction power facility, as listed in Table 4.4-11 and shown in Figures 4.4-13 and 4.4-3e.

Table 4.4-11 Stoughton Line: Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
Right-of-Way						
Stoughton	053-101	Private	Industrial	Commercial	Foreign-Born	0.04
	053-102	Private	Industrial	Commercial	Foreign-Born	0.06
	054-110	Private	Commercial	Industrial	Foreign-Born	0.24
Subtotal (Electric and Diesel Alternatives)						0.41
Traction Power Facility (Electric Alternative)						
Taunton	78-121	Private	Industrial	Undeveloped	Income	0.36
TOTAL (Right-of-Way and Traction Power Facility, Electric Alternative)						0.77

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various).

The four parcels in Stoughton are privately owned and located near the existing Stoughton Station. The parcels, which are vacant commercial/industrial property, are required to allow for construction of the upgraded railroad. The parcel in Taunton is privately owned land on the west side of the Stoughton Line right-of-way near Weir Junction; it is zoned for industrial use but the portion that would be acquired under the Stoughton Electric Alternative is undeveloped land. This portion of the parcel would be used for a parallel substation for the Stoughton Electric Alternative. No jobs or residences would be lost from acquiring these parcels.

Whittenton Alternatives (Electric and Diesel)

The property impacts in Stoughton described above for the Stoughton Alternatives would also occur under the Whittenton Alternatives.

There are no environmental justice areas along the Whittenton Branch. The portion of the Attleboro Secondary that would be used for the Whittenton Alternatives and the siting of the proposed traction power facility in Taunton (Electric Alternative only) would not require property acquisitions from communities that have been identified as having high concentrations of environmental justice populations. Therefore, no adverse impacts to residences, community facilities, and businesses owned or staffed by environmental justice populations would result.

Stations

No property acquisition impacts in environmental justice areas would be required at the following stations: King's Highway, North Easton, Easton Village, Raynham Park, Taunton Depot, Taunton (Dean St.) and Canton Center Station. Stations with property acquisitions potentially affecting environmental justice areas are described below.

Stoughton—The proposed site of the relocated Stoughton Station is within an environmental justice neighborhood in Stoughton (Figure 4.4-13). The neighborhood meets environmental justice foreign-born criteria.

The relocated Stoughton Station would require acquisition of 7.44 acres of privately owned land. Three parcels would be obtained in entirety; 10 percent or less of three other parcels would be acquired. Two of these parcels may be eliminated as the project is further refined (Table 4.4-12 and Figure 4.4-13). No residential or community facility displacements would result from these acquisitions. Acquired parcels would be commercial and industrial in nature and have the potential to displace businesses.

Employees may be residents of the surrounding environmental justice neighborhoods. Job losses from these businesses would be expected and could adversely impact the surrounding environmental justice neighborhood. Adverse impacts to affected businesses may be offset should they be relocated within close proximity to their existing site. All acquisitions would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act).

Table 4.4-12 Stoughton Station: Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
Stoughton	053-101	Private	Industrial	Industrial	Foreign-Born	1.05
Stoughton	053-102	Private	Industrial	Commercial	Foreign-Born	4.42
Stoughton	054-110	Private	Commercial	Commercial	Foreign-Born	0.04
Stoughton	054-401	Private	Commercial	Commercial (vacant)	Foreign-Born	0.01
Stoughton	054-406	Private	Industrial	Industrial	Foreign-Born	1.90
Stoughton	054-407	Private	Industrial	Undeveloped (residential)	Foreign-Born	0.02
TOTAL						7.44

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various). Shading denotes parcel takings that may be reduced or eliminated in final design.

Whale’s Tooth—Portions of five parcels within an environmental justice neighborhood would be acquired for the Whale’s Tooth Station, as listed in Table 4.4-13 and shown Figure 4.4-14.

Table 4.4-13 Whale’s Tooth Station: Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
New Bedford	66-101	Public	Industrial	Industrial	Income, Minority	1.92
New Bedford	66-121 ¹	Public	Industrial	Industrial	Income, Minority	0.38
New Bedford	66-133	Public	Industrial	Industrial	Income, Minority	3.38
New Bedford	66-133A	Private	Industrial	Industrial	Income, Minority	0.05
New Bedford	66-157	Public	Industrial	Industrial	Income, Minority	0.26
Total						5.99

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various).

1 This parcel would be acquired for the train station (all rail alternatives).

Four of the parcels that would be acquired for the Whale’s Tooth Station are publicly owned and one is privately owned. All are zoned for industrial purposes and the general land use is industrial and they are all currently used for transportation/utilities. None are used for residential purposes. MassDOT may lease, rather than acquire, publicly owned parcels from the City of New Bedford. All of the land would be used as a parking lot for the station. There would be no impacts to environmental justice populations because no residences or jobs would be lost.

Fall River Depot—Portions of four parcels within an environmental justice neighborhood would be acquired for the Fall River Depot Station, as listed in Table 4.4-14 and shown Figure 4.4-15. Another five parcels outside of the designated environmental justice neighborhood would also be acquired. All acquired parcels are privately owned and used for commercial or industrial purposes. Businesses that may need to be acquired include a flooring store (Jay Vee’s Discount Flooring), electrical companies (GEMCO electrical contractors and Cotter Electrical), tire service shop (Jimmy’s Used Tires), and automobile detail service (Auto Accent). Acquisition of these nine parcels would result in a property tax revenue loss of \$40,411 for the City of Fall River or approximately 0.0006 percent of real estate tax revenues collected in fiscal year 2011.

No readily available information suggests that these businesses are owned by environmental justice populations. Employees may be residents of the surrounding environmental justice neighborhoods. Job losses from these businesses would be expected and could adversely impact the surrounding environmental justice neighborhood. Adverse impacts to affected businesses may be offset should they be relocated within close proximity to their existing site. All acquisitions would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act).

Table 4.4-14 Fall River Depot Station: Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
Fall River	O-22-5	Private	Industrial	Commercial	Income, Minority	0.12
Fall River	O-22-6	Private	Industrial	Commercial	Income, Minority	0.10
Fall River	O-22-7	Private	Industrial	Commercial	Income, Minority	0.12
Fall River	O-22-11	Private	Industrial	Industrial	Income, Minority	0.47
Total						0.81

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various).

Battleship Cove Station—A portion of one parcel within an environmental justice neighborhood would be acquired for the Battleship Cove Station, as listed in Table 4.4-15 and shown in Figure 4.4-16.

Table 4.4-15 Battleship Cove Station: Environmental Justice Property Acquisition

Municipality	Parcel Number	Ownership	Generalized Zoning	General Land Use	Environmental Justice Categories	Area (acres)
Fall River	Y-1-3	Public	Industrial	Undeveloped	Income	0.08

Source: MassGIS 2002, 2005; municipal data 2009, aerial mapping, and online research (various).

The portion of the parcel that would be acquired for the Battleship Cove Station is owned by the City of Fall River and is part of the Ponta Delgada plaza. The land would be used for accessing the station platform. MassDOT may negotiate a lease arrangement with, rather than acquire from, the City for this parcel. There would be no impacts to the environmental justice population. No privately owned environmental justice neighborhood land would be acquired for constructing the Battleship Cove Station.

Layover Facilities

No parcels within an environmental justice neighborhood would be acquired for the Weaver’s Cove East site layover facility. One parcel owned by the City of New Bedford would be affected by the Wamsutta site layover facility, but no privately owned environmental justice neighborhood land would be acquired (Figure 4.4-17). There would be no impacts to environmental justice populations due to property acquisitions from the layover facility sites because no residences or jobs would be lost.

Mitigation

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), MassDOT would work with affected property owners to identify possible relocation sites. The same protocols would be followed for all property owners, regardless of designation. MassDOT will not mitigate other financial impacts or indirect displacement effects to environmental justice

neighborhoods that may result from property acquisition. Increased transit options and economic activity that may be induced by the South Coast Rail project has the potential to provide new employment opportunities for affected business owners and designated environmental justice populations in the area.

4.4.3.3 Socioeconomics

This section addresses neighborhood fragmentation and indirect socioeconomic effects related to transit-oriented development in the vicinity of stations.

Neighborhood Fragmentation

Southern Triangle (Common to All Rail Alternatives)

The Fall River Secondary and New Bedford Main Line segments are active freight railroads. Fragmentation of environmental justice neighborhoods, or any other neighborhoods, would not result from adding commuter rail service to the Fall River Secondary or New Bedford Main Line.

Stoughton Alternatives

The Stoughton Line between Canton and Stoughton is used as an active commuter railroad. Fragmentation of environmental justice neighborhoods, or any other neighborhoods, along this segment would not result from adding commuter rail service to the Stoughton Line.

South of the Stoughton Station, informal and unauthorized residential and recreational use of the railroad bed in several communities has established neighborhood continuity where none may have existed during the active phase of the railroad. Some neighborhood fragmentation may result in the segment between Stoughton Station and Weir Junction, but would not impact the environmental justice neighborhoods in Taunton. As described in Chapter 4.2, *Land Use*, the Stoughton Line in Taunton is adjacent to or passes through commercial, industrial, and residential development. The alignment crosses most residential neighborhoods perpendicular to main thoroughfares. Although temporary delays in traffic patterns may occur at road/railroad crossings, it is unlikely that the presence of the railroad in this segment would fragment the neighborhoods or disrupt continuity. Fragmentation of environmental justice neighborhoods would be negligible.

Whittenton Alternatives

The potential for neighborhood fragmentation under the Whittenton Alternatives along segments shared with the Stoughton Alternatives and along the Attleboro Secondary is negligible. Environmental justice neighborhoods are not located along the Whittenton Branch.

Indirect Effects of Transit-Oriented Development

As described in the *South Coast Rail Economic Development and Land Use Corridor Plan*,¹⁴ transit-oriented development (TOD) in the vicinity of train stations would provide benefits to environmental justice populations. TOD emphasizes “compact, generally mixed-use development at or near transit

¹⁴ EOT. 2009. *South Coast Rail Economic Development and Land Use Corridor Plan*. Commonwealth of Massachusetts, Executive Office of Transportation and Public Works, and Executive Office of Housing and Economic Development. Prepared by Goody Clancy, Inc.: Boston.

stops whose design encourages walking and transit use.” Environmental justice populations generally have less access to automobiles than the statewide average; improved access to transit and jobs resulting from TOD would benefit these populations.

Environmental justice populations may also benefit from increased property values in the vicinity of station sites, and TOD could further amplify that effect. Conversely, property values may decrease along the alignments, due to negative impacts of increased noise from train operations. Near station sites there may also be a “gentrification” effect, a process whereby neighborhood revitalization or investment is accompanied by the influx of higher-income populations that displace lower-income residents in a community. Environmental justice populations (specifically, those defined as low income) are displaced from homes or apartments if property becomes unaffordable. The effects of gentrification may vary among property owners and renters. While owners may benefit from increased property values, renters may experience unaffordable rental increases. As described in the Corridor Plan, TOD may offset this effect if affordable housing is a required component.¹⁵ Further discussion of potential property value impacts and a review of the relevant literatures is provided in Chapter 4.3, *Socioeconomics*. Overall, impacts to environmental justice populations due to property value changes are possible, but are too uncertain to predict precisely. Numerous factors other than transit contribute to changes in housing prices, such as the state of the national and regional economy, changes in income, inflation, tax policy and many other factors.

Because the impact is speculative and the mitigation measures are beyond the authority of USACE or MassDOT to implement, no mitigation for displacement/gentrification impacts is proposed. State and local programs that provide assistance to renters and home buyers at least partially offset impacts. Such programs include Section 8 housing programs, HomeBASE, Massachusetts Rental Vouchers, and the Alternative Housing Voucher Program, among others, as well as project based voucher plans like the Neighborhood Rental Initiative.¹⁶ Additional tools are available to municipalities to minimize impacts of new transit service, such as programs to preserve affordable rental housing. Municipalities with stations in designated environmental Justice neighborhoods are Canton, Fall River, New Bedford, and Stoughton. A range of planning tools to address the potential adverse effects of establishing transit service in traditionally underserved communities, focusing on local agencies coordinating with state or regional agencies, is provided in *Maintaining Diversity in America’s Transit-Rich Neighborhoods: Tools for Equitable Neighborhood Change* (Pollack et al, 2010). It would be the municipalities’ responsibility to select and implement the appropriate tools.

Section 4.4.3.7 describes anticipated improvements in access to jobs, schools, and hospitals that would be experienced by communities—both designated and non-designated environmental justice neighborhoods—across the South Coast Rail corridor. It is anticipated that increased access to these services would help offset or mitigate minor and localized adverse impacts that may result from the South Coast Rail project.

Station-Level Indirect Effects

The following sections provide an overview of potential indirect socioeconomic changes in the vicinity of stations in environmental justice neighborhoods.

¹⁵ Ibid.

¹⁶ Commonwealth of Massachusetts. Executive Office of Housing and Economic Development. *Rental Assistance Management*. <http://www.mass.gov/hed/housing/rental-assistance/>.

Stoughton Station

While the relocated Stoughton Station would be sited within immediate proximity to the existing station, increased ridership along the line and the availability of new developable land near the station may encourage additional development in the area. While it is difficult to predict with any certainty how the introduction of the proposed station would affect the community, including environmental justice populations in the area (Figure 4.4-13), it is anticipated that because the area is already served by transit options that the relocation of the station would not induce development that would disproportionately and adversely affect environmental justice populations. Investment in and incentives for the area would be dependent on municipal goals, which may support smart growth and TOD that would help contain sprawl and support mixed-use development. Increased ridership would support new development in the area and would likely offer employment opportunities for environmental justice populations in the area. Because the proposed station site is located along an existing rail line, it is not anticipated that the South Coast Rail project would adversely affect community cohesion or fragment neighborhoods, including those in designated environmental justice neighborhoods.

King's Highway

The King's Highway Station site would not require development of an undeveloped area and has adequate infrastructure to serve the station and support nearby redevelopment. The site is near employment opportunities and environmental justice neighborhoods (Figure 4.4-5). The station could also help spur redevelopment on a nearby site currently occupied by an aging shopping plaza. The site presents an opportunity for joint development. This redevelopment opportunity could induce growth in nearby environmental justice neighborhoods.

Property values in environmental justice neighborhoods surrounding the King's Highway Station site may increase due to a perceived market value of residences or businesses close to a transit center. Additionally, TOD in the vicinity of the site could further enhance property values. Because of the undeveloped nature of the proposed station site and the availability of adjacent land, the introduction of the proposed station through redevelopment opportunities would likely introduce a certain amount of economic activity that may not otherwise occur. Such development, if properly planned, would help support community cohesion and would not fragment neighborhoods.

In New Bedford, 68.2 percent of the population is defined as living in environmental justice neighborhoods. The site is near (within 0.5 mile of) one neighborhood meeting environmental justice income criteria. Approximately 20.9 percent of the population (1,213 persons) within 0.5 mile of the King's Highway Station site resides in a designated environmental justice neighborhood. Neighborhoods meeting a full range of environmental justice criteria are outside of the 0.5-mile radius around the King's Highway Station site.

Approximately 21.7 percent of the households in New Bedford had no registered motor vehicles in 2000, compared to a statewide average of 12.7 percent. Based on these data, this portion of the New Bedford environmental justice populations in particular is likely to realize an improvement in local employment or access to transit services for employment and/or educational opportunities inside or outside the community.

Whale's Tooth

The Whale's Tooth Station site is located within and near environmental justice neighborhoods in New Bedford (Figure 4.4-6). This station may also serve environmental justice populations in nearby Fairhaven and Dartmouth.

The Whale's Tooth Station site would not require development in an undeveloped area and has adequate infrastructure to serve the station and support nearby redevelopment. The site is close to the New Bedford waterfront, downtown New Bedford, and the Hicks Logan redevelopment area. The station would be near employment opportunities and environmental justice populations. Immediately adjacent to the site are old mill buildings in the process of being converted to homes. The station could be used as a catalyst for TOD. The Hicks Logan area presents an opportunity to develop a mixed-use waterfront neighborhood that would be served by rail. This redevelopment opportunity could spur growth in nearby environmental justice neighborhoods.

Property values in environmental justice neighborhoods surrounding the Whale's Tooth Station site may increase due to a perceived market value of residences or businesses close to a transit center. Additionally, TOD in the vicinity of the site could further enhance property values. Because the proposed station site is located along an existing rail line, it is not anticipated that the South Coast Rail project would adversely affect community cohesion or fragment neighborhoods, including those in designated environmental justice neighborhoods. Such development, if properly planned, would help support community cohesion and would not fragment neighborhoods.

Statistical information suggests that environmental justice populations may benefit from the Whale's Tooth Station. In New Bedford, 68.2 percent of the population is defined as living in environmental justice neighborhoods. The site is within a neighborhood meeting environmental justice income and minority criteria, and is close to (within 0.5 mile of) other neighborhoods meeting foreign-born, minority, and/or income criteria. Approximately 85.6 percent of the population (8,937 persons) within 0.5 mile of the Whale's Tooth Station site resides in a designated environmental justice neighborhood.

Approximately 21.7 percent of the households in New Bedford had no registered motor vehicles in 2000, compared to a statewide average of 12.7 percent. Based on these data, this portion of the environmental justice population in New Bedford, in particular, may benefit from increased business activity in the area as well as transit services that would provide access to employment and/or educational opportunities outside the community.

The Whale's Tooth Station site is approximately 2 miles from downtown Fairhaven, where 9.7 percent of the population is defined as living in environmental justice neighborhoods (low income). It is approximately 4 miles from downtown Dartmouth, where 11.8 percent of the population is defined as living in environmental justice neighborhoods (foreign-born and/or income criteria). The data suggests that the environmental justice population in Fairhaven and Dartmouth, in particular, is likely to realize an improvement in access to transit services for employment and/or educational opportunities outside the community. Induced development around the proposed station may also provide new employment opportunities.

Fall River Depot

The Fall River Depot Station site is partially within and would therefore serve an environmental justice neighborhood in Fall River (Figure 4.4-8), and would also serve environmental justice populations in

nearby Swansea. The adjacent neighborhood meets environmental justice minority and low income criteria. The following subsections describe the direct and indirect impacts to environmental justice populations in Fall River and Swansea potentially resulting from constructing and using the Fall River Station along the Fall River Secondary.

The Fall River Depot Station site is located 1 mile north of downtown Fall River. It is within close proximity to a dense residential neighborhood and aging shopping plaza and across from the waterfront on Route 79, which is currently experiencing redevelopment. This site is close to employment opportunities and environmental justice neighborhoods. Through enhanced transit options, the station could help support redevelopment goals for the waterfront. Initiatives and incentives that are beyond the scope of this project would need to be implemented to ensure that all populations, including state-listed environmental justice populations, experience the benefits on increased transit and economic activity in the area that may be induced because of the South Coast Rail project. Such development, if properly planned, would help support community cohesion and would not fragment neighborhoods.

Statistical information suggests that the Fall River environmental justice populations may benefit from access to transit services at the Fall River Depot Station. As noted above, 57.3 percent of the Fall River population is defined as living in environmental justice neighborhoods. The site is close to (within 0.5 mile of) neighborhoods meeting environmental justice income and/or minority criteria. Approximately 50.2 percent of the population (4,652 persons) within 0.5 mile of the Fall River Station site resides in a designated environmental justice neighborhood. Neighborhoods meeting a full range of environmental justice criteria are near the Fall River Station site.

Approximately 20.7 percent of the households in Fall River had no registered motor vehicles in 2000, notably higher than the statewide average of 12.7 percent. Based on these data, this portion of the environmental justice population in Fall River is likely to realize an improvement in local employment and access to transit services to employment and/or educational opportunities both inside and outside the community. Induced development around the proposed station may also provide new employment opportunities.

The Fall River Depot Station site is approximately 4 miles from downtown Swansea, where 5.7 percent of the population is defined as living in environmental justice neighborhood (low income). Improved transit access to employment centers may provide new opportunities for environmental justice populations in Swansea. Induced development around the proposed station may also provide new employment opportunities.

Battleship Cove

The Battleship Cove Station site is in and near environmental justice neighborhoods in Fall River (Figure 4.4-9). The surrounding neighborhood meets low income criteria; nearby neighborhoods meet foreign-born, minority, income, and/or limited English proficiency criteria. The following subsections describe the direct and indirect impacts to the Fall River environmental justice populations potentially resulting from the construction and operation of the Battleship Cove Station along the Fall River Secondary Rail Segment.

The Battleship Cove Station site would be located on the Fall River waterfront, close to downtown, near the Fall River Heritage Park and other tourist attractions. The site is close to employment opportunities and environmental justice populations. Although the site is too small for redevelopment to occur right at

the station, the station could spur redevelopment in the waterfront area, a place with old manufacturing buildings and vacant land that the city would like to redevelop.

Property values in environmental justice neighborhoods surrounding the Battleship Cove Station site may increase due to a perceived market value of residences or businesses close to a transit center. Additionally, TOD in the vicinity of the site could further enhance property values. Through enhanced transit options, the station could help support redevelopment goals for the waterfront. Initiatives and incentives that are beyond the scope of this project would need to be implemented to ensure that all populations, including state-listed environmental justice populations, experience the benefits on increased transit and economic activity in the area that may be induced because of the South Coast Rail project. Such development, if properly planned, would help support community cohesion and would not fragment neighborhoods.

Statistical information suggests that the Fall River environmental justice populations may benefit from the Battleship Cove Station. In Fall River, 57.3 percent of the population is defined as living in environmental justice neighborhoods. The Battleship Cove Station site is within a neighborhood meeting environmental justice income criteria, and is close to (within 0.5 mile of) other neighborhoods meeting foreign-born, minority, income, and/or English language fluency criteria. Approximately 88.7 percent of the Fall River population (10,965 persons) within 0.5 mile of the Battleship Cove Station site resides in a designated environmental justice neighborhood.

Neighborhoods meeting a full range of environmental justice criteria are present outside of the 0.5-mile radius around the Battleship Cove Station site. Approximately 20.7 percent of the households in Fall River had no registered motor vehicles in 2000, compared to a statewide average of 12.7 percent. Based on these data, this portion of the environmental justice populations in Fall River may realize an improvement in local employment and/or educational opportunities both inside and outside the community due to improved options for transit access. However, the populations' choice to utilize the rail service is subject to individual factors, such as the commuter cost of the new rail service, as well as the income and availability of job opportunities inside and outside the community. Further discussion of potential local economic impacts and a review of the relevant literatures is provided in Chapter 4.3, *Socioeconomics*.

Taunton Depot

The Taunton Depot Station site is not within an environmental justice neighborhood (Figure 4.4-1a), but environmental justice neighborhoods are present in nearby Taunton.

The Taunton Depot Station site has adequate infrastructure to serve the station and support redevelopment. It is located close to employment opportunities and services as well as multi-family housing. The station would be near a key highway junction for Freetown, Berkley, and Lakeville. The use of this site could be a catalyst for TOD in that it offers an opportunity in the future to redevelop the existing shopping center into a mixed-use neighborhood or lifestyle center. The distance of this site from environmental justice neighborhoods limits the potential growth-inducing effects that this station may have on those neighborhoods. However, increased economic activity in the station area as a result of the proposed station and redevelopment initiatives may offer new employment opportunities for environmental justice populations.

As noted above, no environmental justice neighborhoods are present within 0.5 mile of the Taunton Depot Station site. Statistical information suggests that the Taunton environmental justice population

may benefit from access to transit services at the Taunton Depot Station. The site is approximately 2.25 miles from downtown Taunton, where 12.7 percent of the population is defined as living in environmental justice neighborhoods. These neighborhoods are identified as meeting minority and/or income environmental justice criteria.

Only 9.3 percent of the households in Taunton had no registered motor vehicles in 2000, compared to a statewide average of 12.7 percent. Based on these data, this portion of the environmental justice population in Taunton in particular is likely to realize an improvement in local employment and access to transit services for employment and/or educational opportunities outside the community.

Canton Center

The Canton Center Station is in an environmental justice neighborhood in Canton (Figure 4.4-3a). The neighborhood meets environmental justice minority criteria. Given the current active status of the Canton Center Station in a developed area of Canton, it is unlikely that direct or indirect effects to environmental justice populations would result from using this station.

Taunton (Dean Street) Station – Stoughton Alternatives

The Taunton Station site is located near, but not within, an environmental justice neighborhood in Taunton (Figure 4.4-3e). The nearby environmental justice neighborhood meets low income criteria.

The Taunton (Dean Street) Station site would not require development in an undeveloped area and has adequate infrastructure to serve the station and support nearby redevelopment. The site is near downtown Taunton, close to employment opportunities and near environmental justice neighborhoods. Enhanced transit options may help support redevelopment efforts. Initiatives and incentives that are beyond the scope of this project would need to be implemented to ensure that all populations, including state-listed environmental justice populations, experience the benefits on increased transit and economic activity in the area that may be induced because of the South Coast Rail project. Such development, if properly planned, would help support community cohesion and would not fragment neighborhoods.

Dana Street – Whittenton Alternatives

The Dana Street Station is not located in an environmental justice neighborhood, but a designated environmental justice area for the income and minority criteria is located adjacent to the site and several other environmental justice areas are designated in nearby downtown Taunton (Figure 4.4-4).

The station could also catalyze TOD and presents an opportunity to spur economic growth in Taunton. This redevelopment opportunity could spur growth in the surrounding environmental justice neighborhoods.

Property values in environmental justice neighborhoods surrounding the Dana Street Station site may increase due to a perceived market value of residences or businesses close to a transit center. Additionally, TOD in the vicinity of the site could further enhance property values.

Statistical information suggests that environmental justice populations may benefit from the Dana Street Station. Approximately 27.7 percent of the population (411 persons) within 0.5 mile of the Dana

Street Station site resides in a designated environmental justice area. Approximately 21.1 percent of the population of Taunton is defined as living in environmental justice areas.

Only 9.3 percent of the households in Taunton had no registered motor vehicles in 2000, compared to a statewide average of 12.7 percent. Based on these data, the this portion of the environmental justice population in Taunton in particular is likely realize an improvement in local employment and access to transit services for employment and/or educational opportunities both inside and outside the community.

4.4.3.4 Noise

Stoughton Alternatives

The Stoughton Alternatives pass through or near residential environmental justice neighborhoods in Stoughton, Taunton, New Bedford, and Fall River. These environmental justice neighborhoods would experience similar impacts under both the Stoughton Electric and Diesel Build Alternatives.

Noise impacts from the Stoughton Electric Alternative to environmental justice and non-environmental justice neighborhoods in communities through which it passes are listed in Table 4.4-16 and shown in Figures 4.4-18a-d, 4.4-19, and 4.4-20a-d.

Table 4.4-16 Stoughton Electric Alternative: Summary of Noise Impacts¹

	Affected Residences within Environmental Justice Neighborhoods	Affected Residences within Non- Environmental Justice Neighborhoods	Total Affected Residences	Percent of Affected Residences within Environmental Justice Neighborhoods
Stoughton	7	98	105	6.7
Easton	0	322	322	0.0
Raynham	0	86	86	0.0
Taunton	21	72	93	22.6
Berkley	0	55	55	0.0
Lakeville	0	35	35	0.0
Freetown	0	99	99	0.0
New Bedford	41	114	155	26.5
Fall River	292	204	496	58.9
TOTAL	361	1,085	1,446	25.0

¹ Values based upon a combination of train operational noise and horn use at crossings.

The noise analysis concluded that the electric train alternative along the Stoughton line would result in noise impacts (combined moderate and severe) to 1,446 residences. The number of impacted environmental justice neighborhood residences (361) is 25.0 percent of the total, while the number of noise-impacted non-environmental justice neighborhood residences (1,085) is 75.0 percent of the total.

Whittenton Alternatives

Noise impacts from the Whittenton Electric Alternative to environmental justice and non-environmental justice neighborhoods in communities through which it passes are listed in Table 4.4-17. These

environmental justice neighborhoods would experience similar impacts under both the Whittenton Electric and Diesel Build Alternatives.

Table 4.4-17 Whittenton Electric Alternative: Summary of Noise Impacts¹

	Affected Residences within Environmental Justice Neighborhoods	Affected Residences within Non- Environmental Justice Neighborhoods	Total Affected Residences	Percent of Affected Residences within Environmental Justice Neighborhoods
Berkley	0	55	55	0.0
Easton	0	322	322	0.0
Fall River	292	204	496	58.9
Freetown	0	99	99	0.0
Lakeville	0	35	35	0.0
New Bedford	41	114	155	26.5
Raynham	0	86	86	0.0
Stoughton	7	98	105	6.7
Taunton	502	932	1,434	35.0
TOTAL	842	1,945	2,787	30.2

¹ Values based upon a combination of train operational noise and horn use at crossings.

The noise analysis concluded that the Whittenton Electric Alternative trains would result in noise impacts (combined moderate and severe) to 2,787 residences. The number of impacted environmental justice neighborhood residences (842) is 30.2 percent of the total, while the number of noise-impacted non-environmental justice neighborhood residences (1,945) is 69.8 percent of the total.

Fall River

The Fall River Secondary, common to all rail alternatives, passes through or near state-listed environmental justice neighborhoods in Fall River. The current sound environment along this segment of the Fall River Secondary includes the active freight use of the railroad, heavy traffic on several major highways (Routes 6, 79, and 138, and I-195), and industrial and commercial activities. Noise impacts from the Fall River Secondary Rail Segment that would be experienced by both designated and non-designated environmental justice communities through which the railroad passes are shown in Figures 4.4-18a-d. In Fall River, environmental justice neighborhood residences impacted by noise would account for 58.9 percent of the total number of impacted residences by the Stoughton Electric Alternative; likewise, 58.9 percent of the total number of residences impacted by the Whittenton Electric Alternative would be environmental justice neighborhood residences.

New Bedford

The New Bedford Main Line Rail Segment, also common to all alternatives, passes through or near residential environmental justice neighborhoods in New Bedford. Noise impacts from the New Bedford Main Line to environmental justice and non-environmental justice neighborhoods in communities through which the railroad passes are shown in Figure 4.4-19. In New Bedford, environmental justice neighborhood residences impacted by noise from the Stoughton Electric Alternative would account for 26.5 of all impacted residences; likewise, the Whittenton Electric Alternative would impact 26.5 environmental justice neighborhood residences of all impacted residences.

Taunton

The current sound environment along the Taunton segment of the alignment includes the active freight use of the New Bedford Main Line and Attleboro Secondary through Weir Junction, heavy traffic on one major highway (Route 138), and industrial and commercial activities. In Taunton, environmental justice neighborhood residences that would experience noise impacts from the Stoughton Electric Alternative would account for 22.6 percent of the total number of impacted residences; 35.0 percent of total residences impacted by the Whittenton Electric Alternative would be environmental justice neighborhood residences.

Stoughton

The current sound environment in Stoughton includes the active commuter rail use of the Stoughton Line, and industrial and commercial activities. In Stoughton, environmental justice neighborhood residences impacted by noise would account for 16.7 percent of the total number of impacted residences by the Stoughton Electric Alternative; 6.7 percent of the total number of residences impacted by the Whittenton Electric Alternative would be environmental justice neighborhood residences.

Berkley, Easton, Freetown, Lakeville and Raynham

There are no environmental justice neighborhoods (as defined by the criteria cited in Section 4.4.1) along the Stoughton or Whittenton Electric Alternative in Berkley, Easton, Freetown, Lakeville, or Raynham; accordingly, there are no noise impacts to environmental justice neighborhoods in these communities.

Mitigation

Noise mitigation policy and process are described in detail in Chapter 4.6, *Noise*. In general, reasonable mitigation would be incorporated to address severe impacts. In areas where noise barriers are not cost-effective, alternative mitigation such as building sound insulation would be used. Two severely impacted sensitive receptor areas within designated environmental justice neighborhoods that meet MBTA's policy for a noise barrier:

- Murray Street area from Brightman Street to Cory Street in Fall River; and
- Almy Street area from Cory Street to President Avenue in Fall River.

The implementation of the proposed noise barriers would mitigate severe impacts to 36 sensitive receptors in designated environmental justice neighborhoods. The southernmost extent of the barriers, the one-block segment from Brownell Street to President Avenue on both sides of the Fall River Secondary, is beyond the boundary of the designated environmental justice neighborhood.

For the remaining severely impacted sensitive receptor locations, building insulation is the most cost-effective noise mitigation for reducing the noise impacts associated with rail operations. Building insulation would mitigate severe impacts to 38 sensitive noise receptors in designated environmental justice neighborhoods. The implementation of this measure would occur in both designated and non-designated environmental justice neighborhoods.

In selecting mitigation measures to offset adverse impacts associated with increased noise levels in designated environmental justice communities, the affected property owners would be consulted and

permitted to identify preferred building noise mitigation measures for their property from a potential list of measures that would be provided by MBTA.

4.4.3.5 Vibration

The results of an updated vibration impact analysis for the Stoughton Alternatives is provided in Table 4.4-18. The table compares the vibration impacts prior to mitigation that would be experienced by environmental justice communities to those that would be experienced by non-environmental justice neighborhoods.

There would be approximately 50 more vibration impacts in environmental justice neighborhoods under the Whittenton Electric Alternative than the Stoughton Electric Alternative because of the impacts along the Attleboro Secondary through downtown Taunton. Vibration impacts under the Stoughton and Whittenton Diesel Alternatives would be the same as the corresponding electric alternative.

Table 4.4-18 Stoughton Alternatives Vibration Impacts

Municipality	Vibration Impacts to Residential Receptors		Total
	Environmental Justice	Non-Environmental Justice	
	Neighborhoods	Neighborhoods	
Stoughton	0	22	22
Easton	0	76	76
Raynham	0	34	34
Taunton	10	36	46
Berkley	0	20	20
Lakeville	0	7	7
Freetown	0	31	31
New Bedford	0	10	10
Fall River	76	47	123
Total	86	283	369

Table 4.4-18 shows that the combined total number of residences impacted by vibration from the Stoughton Alternative’s trains prior to mitigation would be 369. Environmental justice neighborhoods contain only 23 percent of the impacted sensitive receptors, while non-environmental justice neighborhoods contain 77 percent of the impacted sensitive receptors. Based on these proportions, the Stoughton Alternatives would not result in disproportionate vibration impacts when considering the alignment as a whole. However, the potential for disproportionate vibration impacts exists at the local level in Fall River where 62 percent of impacts would occur in environmental justice communities.

For the Whittenton Alternatives, approximately 25 percent of the total vibration impacts (105 out of 417) would be borne by environmental justice communities (specifically in Taunton and Fall River). For the overall alignment, this would not result in disproportionate vibration impacts to environmental justice communities. However, as with the Stoughton Alternatives, the Whittenton Alternatives would have the potential for disproportionate adverse vibration impacts in Fall River. In addition, the Whittenton Alternatives would have the potential for disproportionate adverse vibration impacts to environmental justice areas in Taunton (along the Attleboro Secondary). With incorporation of mitigation measures, the majority of vibration impacts would be eliminated and no disproportionate adverse impacts would occur. Vibration impacts to environmental justice and non-environmental justice

neighborhoods would be mitigated under either the Stoughton or Whittenton Alternatives, as summarized below.

Several vibration mitigation measures were assumed to be incorporated in the project design, including:

- Continuously welded rail
- Ballast and sub-ballast would be placed to standard depths to reduce transmission of vibration to the ground
- Turnouts would be located at least 100 feet away from sensitive receptors
- Trains and track would be maintained to minimize vibration generated by the trains

Additional mitigation measures to be determined during final design would include ballast mats (rubber mats placed under the ballast). Ballast mats would be provided where vibration mitigation is justified and soil conditions are appropriate. A detailed evaluation of the source-receiver soil conditions would be required during final design to assess the effectiveness of the ballast mat at impacted receptor locations along the corridor. Ballast mats were considered cost effective to offset vibration impacts at the 39 locations shown on Figures 4.4-18a-d, 4.4-19 and 4.4-20a-d. Under the Stoughton Alternatives, mitigation measures for 55 impacted residential receptors would be within designated environmental justice neighborhoods in Taunton and Fall River. Table 4.4-19 lists the proposed location of ballast mats in environmental justice neighborhoods in Taunton and Fall River. It is anticipated that the implementation of appropriate mitigation measures would offset vibration impacts borne by both designated and non-designated environmental justice communities throughout the South Coast Rail corridor.

The same types of mitigation measures noted above for the Stoughton Alternatives could be used to mitigate the vibration impacts specific to the Attleboro Secondary in Taunton.

Table 4.4-19 Stoughton Alternatives, Proposed Ballast Mat Locations in Environmental Justice Neighborhoods

Municipality	Number of Receptors within Designated Environmental Justice Areas
Taunton	
High Street/Paul Bunker Drive	6
Ingell Street	2
Fall River	
Cory Street	27
Durfee Street/Cedar Street	20
Total	55

4.4.3.6 Public Safety

As discussed in Chapter 4.1, *Transportation*, there would not be any significant impact to public safety and therefore environmental justice neighborhoods would not be disproportionately impacted from an at-grade crossing and public safety perspective.

Outreach materials including those available from Operation Lifesaver – a nationwide, non-profit public information program that promotes highway-rail grade crossing safety – would be available in English, Spanish, Portuguese, French creole, and French, to ensure that all populations, including those with limited English proficiency are informed about the South Coast Rail project and possible safety risks.

4.4.3.7 Access and Travel Time Impacts

This section describes the impacts to access and travel time that would be realized by environmental justice populations as a result of the South Coast Rail project.¹⁷ This includes evaluation of the improvements in access to employment centers, and colleges and hospitals, as well as improvements in travel time to Boston from Taunton, Fall River, and New Bedford for both environmental justice and non-environmental justice populations (Appendix 4.4-A).

Each travel scenario was compared to the No-Build Alternative (Enhanced Bus) on a percent change basis, and results are provided for both environmental justice and non-environmental justice neighborhoods.

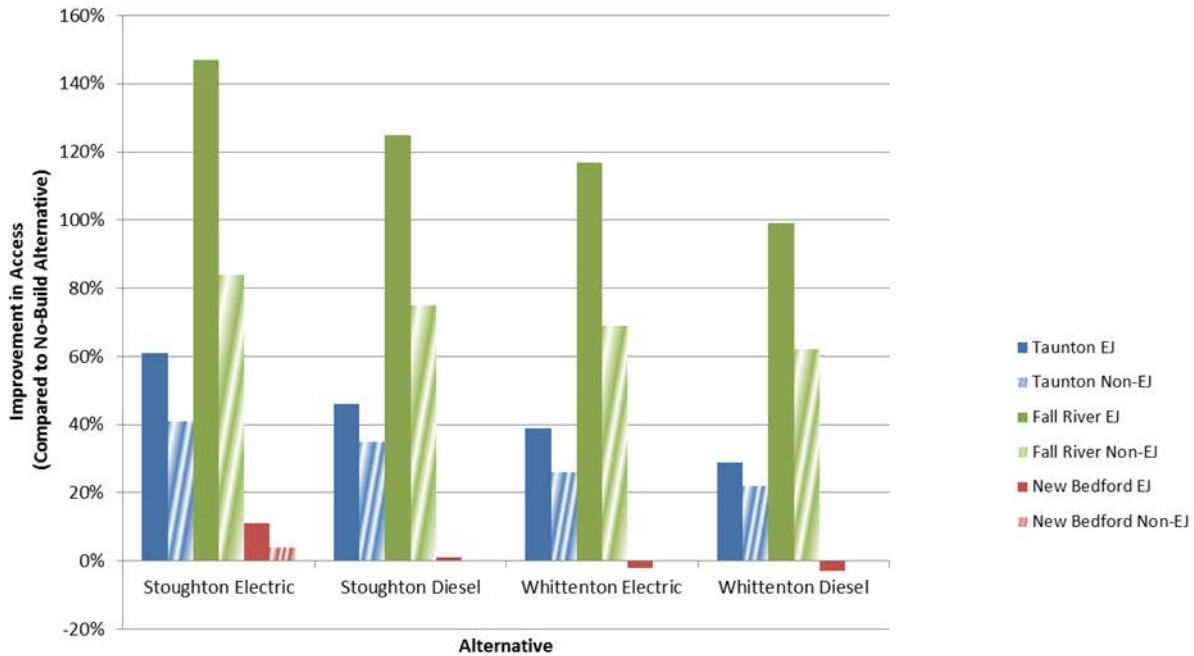
Potential Effects on Job Access

The South Coast Rail project would improve access to jobs for both environmental justice and non-environmental justice populations. The CTPS report identifies the relative improvements for each of the Build Alternatives as compared to the No-Build Alternative in transit access to employment opportunities from environmental justice and non-environmental justice neighborhoods in Taunton, Fall River, and New Bedford to jobs within 90 minutes' travel time.

Selected job access data are presented graphically in Figure 4.4-21. The relative improvement in access to basic jobs for environmental justice populations in the three communities is shown for each alternative as compared to the No-Build Alternative. The transit access percentages represent the change in the number of jobs that would be accessible within 90 minutes of these communities in reference to the No-Build Alternative. These values reflect a given population's change in the capacity to travel farther (to employment sites) within a 90-minute radius, as a result of changes in access to transit, from neighborhoods in each of the communities. Positive values represent improvements in access (more jobs accessible), while negative values represent degradations in access (fewer jobs accessible). Negative values are possible if a population (whether environmental justice or non-environmental justice) would realize less of a benefit by using a particular alternative than by using the Enhanced Bus system of the No-Build Alternative.

¹⁷CTPS. 2009. South Coast Rail Environmental Justice Study. Central Transportation Planning Staff, Boston Metropolitan Planning Organization: Boston.

Figure 4.4-21 Improvements in Job Access



These data suggest that, on average, access for environmental justice populations to basic jobs resulting from any of the South Coast Rail alternatives would be improved over the No-Build Alternative. The changes in access to basic jobs realized by environmental justice populations in the three communities vary considerably by alternative with the greatest improvements seen by Fall River populations using any of the alternatives. New Bedford populations would experience the least overall improvement. For New Bedford residents using the either of the Whittenton Alternatives, access to basic jobs would not be improved over the No-Build Alternative. The greatest average improvement would be accomplished by the Stoughton Electric Alternative where access to basic jobs for environmental justice populations in the three communities would improve by an average of 73 percent.

Potential Changes in Access to Colleges and Hospitals

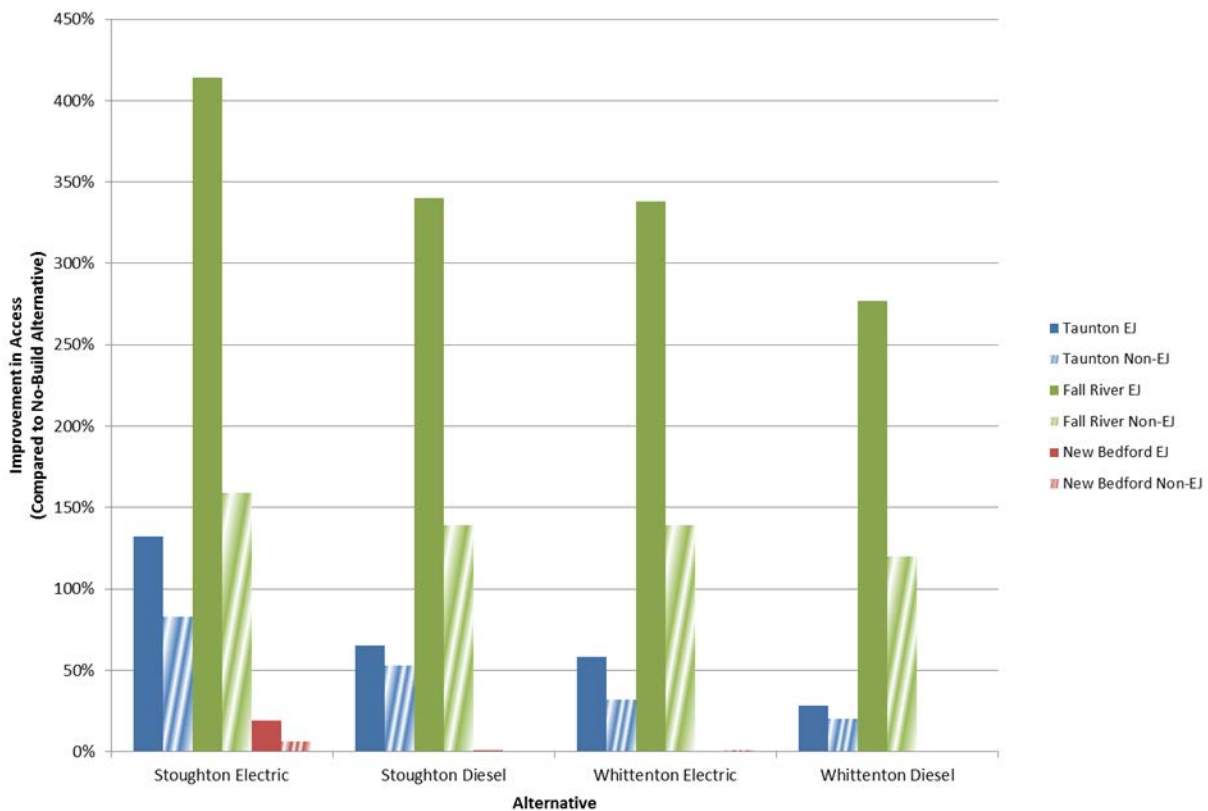
The South Coast Rail alternatives would result in improved access to colleges and hospitals for environmental justice and non-environmental justice populations. The CTPS report indicates that the project would improve transit access to higher education (i.e. commutation access to college enrollment slots) and non-emergency medical facilities (i.e. “hospital beds”) for both environmental justice and non-environmental justice populations. The CTPS report identifies the relative improvements in transit access for each of the Build Alternatives as compared to the No-Build Alternative as reflected in the increase in the number of colleges and hospitals within 90 minutes’ travel time by transit from environmental justice and non-environmental justice neighborhoods in Taunton, Fall River, and New Bedford.

Hospital access data are presented graphically in Figure 4.4-22. The relative improvement in access to hospitals for environmental justice populations in the three communities is shown for each alternative as compared to the No-Build Alternative. The transit access percentages represent the change in the number of medical facilities (as expressed in the total number of hospital beds) that are within the 90-

minute travel time radius. As with the access to basic jobs data described above, these values reflect a given population’s change in the capacity to travel farther (to hospitals) within a 90-minute radius, as a result of changes in access to transit, from neighborhoods in each of the communities.

These data suggest that, on average, access for environmental justice populations to hospitals resulting from any of the South Coast Rail alternatives would be improved over the No-Build Alternative. The changes realized by environmental justice populations in the three communities vary considerably, again with the greatest improvements in access to hospitals seen by environmental justice populations in Fall River under any alternative. The least improvement would be seen by New Bedford populations using any alternative. CTPS attributes these minimal improvements to station locations (such as Whale’s Tooth Station) that do not directly connect with existing Southeastern Regional Transit Authority bus terminals in New Bedford.

Figure 4.4-22 Improvements in Access to Hospitals



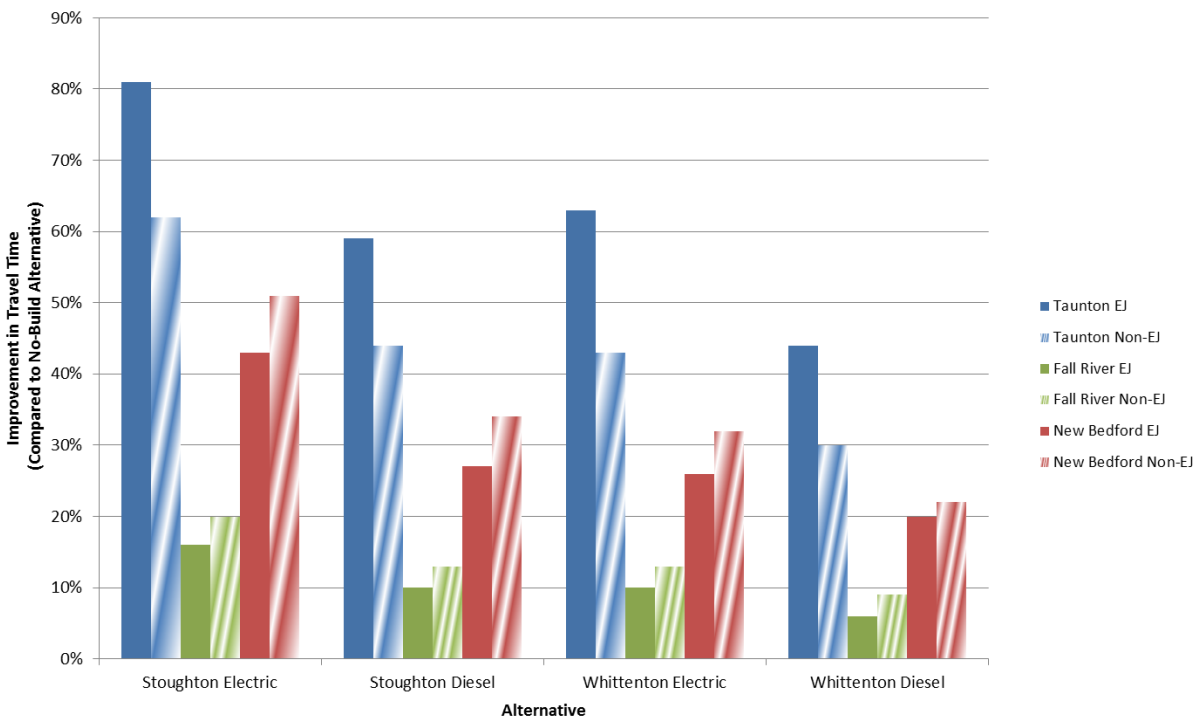
Potential Effects on In-Vehicle Travel Time to Boston

The South Coast Rail project would also result in improved as compared to the No-Build (Enhanced Bus) Alternative travel times to Boston from three South Coast communities for environmental justice and non-environmental justice populations. All alternatives would reduce in-vehicle travel times from the three communities to a selected location (South Station) in Boston for both environmental justice and non-environmental justice populations. Figure 4.4-23 graphically presents the relative improvements for each of the Build Alternatives as compared to the No-Build Alternative in travel time from environmental justice and non-environmental justice neighborhoods in Taunton, Fall River, and New Bedford to South Station.

These data suggest that, on average, travel times to Boston for environmental justice populations would decrease as compared to the No-Build Alternative as a result of any of the Build Alternatives proposed for the South Coast Rail project. The changes realized by environmental justice populations in the three communities vary moderately with environmental justice populations in Taunton experiencing the greatest benefit from all rail alternatives. Fall River populations (both environmental justice and non-environmental justice) would receive the least benefit from any of the Build Alternatives.

In some cases, the improvements for non-environmental justice populations are greater than for the environmental justice populations. This is a result of the relative locations of existing or proposed train stations in relationship to the environmental justice or non-environmental justice neighborhoods. None of the Build Alternatives would result in an increase of travel time from Taunton, Bedford or Fall River to Boston as compared to the No-Build Alternative for either environmental justice or non-environmental justice populations in these communities.

Figure 4.4-23 Improvements in Travel Time to Boston (South Station)



4.4.4 Summary of Impacts by Alternative

Table 4.4-20 summarizes potential adverse and beneficial effects to designated environmental justice communities that may result from the implementation of each alternative of the South Coast Rail project.

Table 4.4-20 Summary of Effects on Environmental Justice Populations

Effects	Stoughton Electric	Stoughton Diesel	Whittenton Electric	Whittenton Diesel
Adverse Effects				
Neighborhood Disruption/Fragmentation	None	None	None	None
Residential Displacements	None	None	None	None
Business/Job Displacements ¹	Minimal	Minimal	Minimal	Minimal
Noise Impacts in Environmental Justice Neighborhoods (number of residences impacted by moderate and severe increases in noise levels) ²	361	361	842	842
Percent of Total Noise Impacts in Environmental Justice Neighborhoods	25%	25%	30%	30%
Vibration Impacts in Environmental Justice Neighborhoods (impacted sensitive receptors) ³	86	86	105	105
Percent of Total Vibration Impacts in Environmental Justice Neighborhoods	23%	23%	25%	25%
Beneficial Effects (percent improvement compared to No-Build Alternative)				
Access to Jobs ⁴				
Taunton	118	77	67	44
Fall River	187	151	140	113
New Bedford	21	4	-1	-2
Access to Colleges ⁵	78	46	52	33
Access to Hospitals ⁶	188	135	132	102
Travel Time to Boston ⁷	47	32	33	23
Station Area TOD ⁸	Yes	Yes	Yes	Yes

- 1 Business and job displacements would result from private property acquisition for the Fall River Depot Station, and would be minor as compared to the overall workforce in the surrounding community. See Chapter 4.2, *Land Use*, and Chapter 4.3, *Socioeconomics*.
- 2 Noise impacts data is based on the Stoughton and Whittenton Electric Alternatives; however the impacts of the diesel alternatives would be similar
- 3 Diesel and electric vibration impacts would be the same.
- 4 Provided as an average in improvement, as compared to the No-Build Alternative, in access to basic, service, and retail jobs within a 90-minute radius of each municipality. Source: CTPS 2009.
- 5 Provided as an average in improvement, as compared to the No-Build Alternative, in access from Taunton, Fall River, and New Bedford to colleges and hospitals. Source: CTPS 2009.
- 6 Provided as an average in improvement, as compared to the No-Build Alternative, in travel times from Taunton, Fall River, and New Bedford to Boston’s South Station. Source: CTPS 2009.
- 7 Qualitative assessment of the potential for transit-oriented development in the vicinity of the station site that would benefit environmental justice populations. Source: Goody Clancy

Adverse effects to environmental justice populations that would result from the South Rail project are similar for all applicable resource topics with the exception of noise and vibration. Among the rail alternatives, the Whittenton Alternatives would impact the greatest number of residences, and the Stoughton Alternatives the least. Additionally, a greater percentage of noise impacts would be experienced by designated environmental justice populations under the Whittenton Alternatives than

the Stoughton Alternatives. Under all rail alternatives and on a regional level, adverse noise impacts would not be disproportionately borne by state-listed environmental justice communities. However, on the municipal level, the analysis concludes that state-listed environmental justice populations in Fall River would experience disproportionately high and adverse noise impacts as compared to non-environmental justice populations (prior to mitigation) under the Stoughton and Whittenton Alternatives.

Vibration impacts would be experienced across the region in both designated and non-designated environmental justice communities. Overall, adverse impacts would not be predominately borne by designated environmental justice communities under the Stoughton or Whittenton Alternatives. At the local level, designated environmental justice communities would experience a disproportionately high share of vibration impacts in Fall River under both the Stoughton and Whittenton Alternatives. Environmental justice communities in Taunton would experience a disproportionately high share of vibration impacts under the Whittenton Alternatives. Identified mitigation measures would be able to offset these impacts.

There are also benefits associated with the rail alternatives that would be recognized by all populations regardless of designation. Increased access would reduce travel times to Boston and other employment centers. Average travel time savings from Fall River, Taunton, and New Bedford greatest under the Stoughton Electric Alternative, followed by the Whittenton Alternative which would improve travel times by 14 percent. The Stoughton Electric also represents the greatest travel time savings to colleges and hospitals. The Whittenton Diesel Alternative typically represents the least travel time savings of the rail alternatives.

The beneficial effects to environmental justice populations that would result from the South Coast Rail project vary considerably by alternative and community. Property values in environmental justice neighborhoods near stations may increase as a result of improved access to transit and subsequent TOD. If property values get too high, environmental justice populations may be priced out of their current locations. Conversely, property values in environmental justice neighborhoods along the alternative alignments may decrease as a result of increased noise from train operations.

4.4.5 Public Outreach

In October 2008, project fliers inviting participation in planning activities were sent to more than 80 churches and community centers in environmental justice neighborhoods in New Bedford, Fall River, and the surrounding areas. A bilingual flier (English and Portuguese or English and Spanish) was distributed which invited residents to participate in public meetings on potential sites and development opportunities for rail stations in the New Bedford area. To better accommodate non-English speaking populations, all meeting notices offered translation services at public meetings.

In July 2009, a large-scale mailing was issued of a brochure with general project information in English, Spanish and Portuguese. The Southeastern Regional Planning and Economic Development District (SRPEDD) was consulted to further widen the outreach to environmental justice communities, including many of the same churches and community centers from the earlier mailing, as well as commissions on disability, housing authorities, councils on aging and newspapers such as the Cape Verdean News and the Portuguese Times, based in New Bedford. In addition, brochures were sent to the 31 public libraries and town planners in the region. In total, brochures were mailed to 250 recipients.

Planning and economic development staff and elected officials (including mayors) in New Bedford, Fall River and Taunton (and all of the other South Coast communities which may host stations) were consulted to gather ideas on economic development, sustainability and smart growth related to the project. These leaders and SRPEDD work with environmental justice groups in the communities on a regular basis, facilitating coordination with the public outreach team. The direct approaches have been through the community workshops on stations (one each in Fall River and Taunton and two in New Bedford).

In addition, MassDOT's South Coast Rail website has been maintained and updates are made as necessary. The website provides access to technical reports, fact sheets, flyers, and project updates. Targeted outreach efforts would be undertaken prior to public meetings and other outreach activities. Meeting notices would continue to be provided in foreign languages (Portuguese and Spanish) and translation services at meetings and for technical documents would continue to be provided upon request. Project staff would continue to meet with churches, community groups, and other organizations to engage environmental justice populations in the decision-making process.

In selecting mitigation measures to offset adverse impacts associated with increased noise levels in designated environmental justice communities, affected property owners would be consulted.