

3.0 INTRODUCTION

This chapter examines the potential social, economic, and environmental consequences of the Preferred Alternative consistent with the requirements of the National Environmental Policy Act (NEPA), Federal Transit Administration (FTA) rules, regulations, and guidance documents, and other related federal rules and regulations. The year 2035 is used to evaluate future conditions in the study area for consistency with the North Jersey Transportation Planning Authority (NJTPA) planning horizon. As required by NEPA, a No Action Alternative is also presented to serve as a benchmark against which to compare the effects of the Preferred Alternative.

The Preferred Alternative would extend the West Side Avenue branch 3,700 feet to the west, to a new station that would be constructed on the north side of the proposed Bayfront development. This Environmental Assessment (EA) focuses on a study area based roughly on a 1,000-foot buffer around the alignment of the Preferred Alternative, bounded roughly by John F. Kennedy Boulevard to the east and the Hackensack River to the west (see Figure 1-1).

3.1 SOCIAL CONDITIONS

3.1.1 LAND USE

The Preferred Alternative's alignment stretches via the former Central Railroad of New Jersey (CNJ) right-of-way, from the Hudson-Bergen Light Rail (HBLR) West Side Avenue Station (at West Side Avenue), through the station's park-and-ride lot and the former Cookson Electronics site (Block 1775.1, Lot 83), across Route 440. On the west side of Route 440, the alignment cuts across a small portion of a parking lot associated with the Hudson Nissan car dealership (Block 1290.A, Lot A.1), and a Jersey City Department of Public Works property (Block 1290.A, Lot 2.E), terminating at the northern end of the proposed Bayfront development on land owned by Honeywell (see **Figure 3-1**).

The land use study area comprises a 1,000-foot buffer around the Preferred Alternative alignment. The portion of the study area east of West Side Avenue is occupied in large part by single-family homes, typical of those present along Ege, Grant, and Claremont Avenues (see **Figure 3-2**, Photo 1). Storefront commercial uses are present near the existing HBLR West Side Avenue station and generally along West Side Avenue (see **Figure 3-2**, Photo 2). Several blocks outside this portion of the study area are occupied by the main campus of New Jersey City University (NJCU); the campus is located on the large block bounded by Culver Avenue, John F. Kennedy Boulevard, Audubon Avenue, and College Street; and the College Towers Apartments, a 320-unit cooperative apartment complex, occupies the blocks between the NJCU campus and West Side Avenue.

The central portion of the study area (between West Side Avenue and Route 440) is a mix of residential, commercial, and industrial/manufacturing uses, with a number of vacant properties and parking lots present along Fisk Street and Culver Avenue (see **Figure 3-2**, Photo 3). Between Mallory Avenue and Route 440, the blocks to the south and to the north of the Preferred Alternative alignment (Fisk Street, Carbon Place, Claremont Avenue, and Clarke Avenue) are dominated by large surface parking lots associated with automobile dealerships and trucking companies, auto repair, and industrial uses (see **Figure 3-2**, Photo 4). Several large residential developments are present in this portion of the study area: the Station at West Side (172 Culver Avenue, between West Side Avenue and Mallory Avenue); Grant Street West (319 Grant Avenue, to the south of the HBLR lot); and the West Side Station Condominiums located between Mallory, Grant, Greenwich, and Claremont Avenues, which abuts the proposed alignment (see **Figure 3-2**, Photo 5).

The portion of the study area west of Route 440 consists of the vacant Honeywell property, which is a large formerly industrial site currently undergoing environmental remediation; a Jersey City Department of Public Works equipment maintenance facility and a sewage treatment facility; two car dealerships (fronting Route 440, between Culver and Claremont Avenues); and a portion of Hudson Mall, which consists of several national retailers and restaurants. Jersey City is in the process of relocating the sewage treatment facility and its other public works facilities to facilitate development of the Bayfront project.

As described in Chapter 1, “Project Identification and Purpose and Need,” of this EA, several major developments will change land use in the study area in the future. Major projects will include Bayfront, a major mixed-use development being planned on the Honeywell site on the west side of Route 440; a new West Campus for NJCU; and additional redevelopment including new streets on the blocks between Mallory Avenue, Route 440, Claremont Avenue, and Carbon Place, connecting to NJCU’s West Campus. In addition, Jersey City is planning for a reconstruction and reconfiguration of Route 440.

Figure 3-3 shows land use in the study area in the future, after the development of Bayfront and the construction of the NJCU West Campus. Although not pictured on **Figure 3-3**, the reconstruction of Route 440 as an urban boulevard will require a widening of the roadway right-of-way, with some of the new roadway lanes dedicated for use as bus lanes, local traffic lanes, turning lanes, and dedicated bicycle lanes. Similarly, the City of Jersey City is currently considering a modification to the street plan that would map new streets through the large block bounded by Claremont Avenue, Route 440, Culver Avenue, and Mallory Avenue, and through two blocks to the south (to Carbon Place).

In the No Action Alternative, no new transit station would be provided at Bayfront. Development of this large, mixed-use project was envisioned as a transit-oriented development, and the large-scale plan adopted for Bayfront permits more development there if a transit station is provided than if one is not. The No Action Alternative would not be supportive of the Bayfront development and would not allow development to the full potential density of the site.

The Preferred Alternative would be consistent with the study area’s current and anticipated land use by providing improved accessibility for those working and living in the area and providing access to the planned development west of Route 440 and to the western waterfront

overall. The Preferred Alternative would be designed in coordination with the Route 440 Study such that its infrastructure would not impede plans for an urban boulevard, and in fact, planning for both projects has been and continues to be collaborative.

3.1.2 ZONING

The study area includes portions of several mapped Jersey City Redevelopment Areas (see **Figure 3-4**), areas specifically designated by the Municipal Council of the City of Jersey City as being in need of redevelopment or rehabilitation under the Local Redevelopment Housing Law (LRHL) 40A:12A-1. These designations encourage investment in revitalization and economic development through tax abatement and other incentives. The redevelopment plan areas located within or adjacent to the study area include Bayfront and the NJCU West Campus. The Water Street redevelopment plan area includes the West Side Station Condominiums described above. The West Side Avenue redevelopment plan area, focuses on a portion of the West Side Avenue commercial corridor, south of the existing HBLR West Side Avenue Station. In addition, as mentioned above and shown on Figure 1-2, the City of Jersey City is planning to designate other redevelopment zones in the area, including the Culver Redevelopment Plan area. The remainder of the study area is zoned as HC (Highway Commercial), WPD (Waterfront Planned Development), and R-1 (One and Two Family Housing).

Under the No Action Alternative, planned development in the area, particularly west of Route 440, may be scaled down, since some development plans are directly dependent on the provision of new transit service to western waterfront. For example, the Bayfront I Redevelopment Plan allows for a maximum development density (8,100 residential units and 1.6 million square feet of commercial space) only if direct HBLR service is provided, as compared to 4,200 residential units and 950,000 square feet of commercial space without the extension.

The Preferred Alternative would be consistent with and supportive of the study area's redevelopment plans. In fact, Jersey City's vision of the redevelopment of the study area with residential and institutional uses is dependent in part on implementing the Preferred Alternative.

3.1.3 PUBLIC POLICY

Both Bayfront and NJCU West Campus are products of a larger study of the western waterfront, known as the Jersey City Bayside Development Project. Bayside was a collaborative and comprehensive planning study that identified substantial redevelopment opportunities both east and west of Route 440. It envisioned a new mixed-use community in the industrial areas of the neighborhood with density supportive of transit-oriented, urban living.

Therefore, the No Action Alternative would be inconsistent with public policy focused on developing the western waterfront. While the existing HBLR West Side Avenue station would continue to provide transit service to the area, residents and businesses west of Route 440 would continue to experience a lack of convenient access to this transit option.

Conversely, the Preferred Alternative would be consistent with the study area's relevant public policies, such as the mapped redevelopment plan areas described above, by providing improved transit access to these areas. The Preferred Alternative would also provide access to

new parkland proposed as part of the Bayfront plan and would improve access to existing destinations west of Route 440, such as Hudson Mall.

3.1.4 DISPLACEMENT AND RELOCATION

The No Action alternative would not involve the acquisition of any public or private properties nor would it require any easements on private or public property.

An interest in three properties would be required for implementation of the Preferred Alternative:

- An area extending through the Cookson Electronics site: As this site is currently vacant, no active businesses would be displaced.
- A small area within the southeast corner of Hudson Nissan, west of Route 440: The alignment would span only a small portion of the automobile dealership parking lot. The Preferred Alternative would be carried on a viaduct in this portion of the alignment; however, the land below the viaduct would be fenced off for security purposes and to ensure maintenance access. During the Alternatives Analysis phase of the project, NJ TRANSIT met with the property owner to identify the potential need for this property interest, and it is not anticipated that the interest in this property would adversely impact the continued operation of the automobile dealership.
- An area extending westerly across the northern boundary of the Bayfront development: As mentioned previously, an extension of HBLR service and the construction of a new station near Bayfront would allow Bayfront to be built out at its maximum development density, and therefore, would benefit the Bayfront development. This property is currently owned partly by the City of Jersey City Department of Public Works and partly by Honeywell, but is all intended for redevelopment as part of Bayfront. The Bayfront Redevelopment Plan explicitly provides for right-of-way access for a light rail extension into the Bayfront site, therefore a land transfer or easement granted by Bayfront to NJ TRANSIT is expected to be amicable.

The right-of-way would also extend across two publicly owned properties—HBLR West Side Avenue Station parking lot and City of Jersey City Department of Public Works. The West Side Avenue Station parking lot is owned by NJ TRANSIT. The Jersey City Department of Public Works will relocate to allow for the development of Bayfront, and it is anticipated that any easements or land transfer would be accomplished once the facility is relocated. The remainder of the Preferred Alternative will be constructed over public streets.

3.1.5 COMMUNITY FACILITIES AND SERVICES

There are a limited number of community facilities in the study area. The Coptic Orthodox Church of St. Mark is located at the intersection of West Side Avenue and Clarke Avenue. Two schools, PS 24 Elementary School and Our Lady of Victories School, are located across West Side Avenue, between Ege and Virginia Avenues. Several properties belonging to the Our Lady of Victories Church are located in the eastern portion of the property. There are also a number of properties related to NJCU, including a large athletic facility at West Side and Culver Avenues, however, these facilities are not open to the public. The NJCU campus is located just outside the study area to the south.

The No Action Alternative would not involve any changes to study area community facilities and services.

The Preferred Alternative would not displace any of community facilities or alter access to them. Since the Preferred Alternative would not directly introduce a new population to the study area, it would also not overburden the provision of community services. Emergency services for the HBLR extension would continue to be provided in accordance with established NJ TRANSIT procedures.

3.1.6 PARKLANDS AND OPEN SPACE

As shown on **Figure 3-5**, the study area does not currently contain parkland or other open space. The nearest open space is Cortney Fricchione baseball field, located at West Side and Fulton Avenues outside of the study area.

The Bayfront development will provide new open spaces, including a riverfront walkway, which would include a multi-use path for bicyclists and pedestrians. Two large linear parks running through the development from Route 440 to the river would collect to the riverfront walkway.

In the No Action Alternative, no new transit access would be provided to Bayfront's new open spaces.

The Preferred Alternative would not adversely affect the new open spaces at Bayfront and would improve access to these recreational resources.

3.1.7 VISUAL RESOURCES

A visual resource is a notable physical feature of a particular neighborhood or location, either natural or manmade. Visual resources can include parks or other green space, waterfront views, historic structures or districts, distinct buildings, or important natural features. As described below in the discussion of historic resources, the study area includes a historic structure that is eligible for listing on the National Register of Historic Places, the former Candy Factory located adjacent to the existing West Side Avenue Station (now the Board of Education Building; see **Figure 3-2**, photo 6). Architectural surveys previously conducted in the study area have described the former Candy Factory as an excellent example of early 20th century utilitarian industrial design and can be considered a visual resource. However, none of the other structures or landscapes in the study area are visually significant.

No changes to visual resources in the study area are expected under the No Action Alternative.

The construction of the Preferred Alternative would not diminish the former Candy Factory building's character defining qualities. The building was historically located next to the tracks of the Newark & New York branch of the Central Railroad of New Jersey. In fact, the Preferred Alternative's new viaduct structure would extend the HBLR alignment along the same route as the former Central Railroad of New Jersey and would replace the existing = pedestrian bridge over West Side Avenue. Thus, the new viaduct would not block any existing views of the former Candy Factory buildings or change its setting.

The new viaduct structure would be most visible as it crosses the existing, at-grade parking lot at the HBLR West Side Avenue Station, where views of the new structure would not be obstructed by other buildings. It would also be clearly visible as it crosses Mallory Avenue and

Route 440. On the block between Mallory Avenue and Route 440, the viaduct would run beside existing industrial uses and the residential uses located on that block. At approximately 15 feet above grade, the viaduct platform level would be at approximately the same height as a typical building's second story. As shown in the **Figures 2-4** and **2-5** in Chapter 2, the viaduct would be set back approximately 50 feet from the nearest residential uses on that block.

The new HBLR viaduct would be similar in appearance to the HBLR structures throughout other neighborhoods of Jersey City as well as neighboring Bayonne. With its relatively low profile and the setback from the nearest residential uses, the new structure would not block notable views from existing residences or block important views from public places, such as views of green space, the waterfront, or any landmark structures or distinct buildings. Therefore, no adverse impacts on visual resources in the study area would occur as a result of the Preferred Alternative.

3.1.8 POPULATION AND EMPLOYMENT

The study area for population and employment comprises seven 2010 Census block groups. Block groups were identified as part of the study area if 50 percent or more of their area lies within 1,000 feet of the Preferred Alternative's alignment. Two other block groups that do not fall 50 percent within that distance were added: block group 48.3 was added because of its proximity to the alignment and block group 54.1 was added because it encompasses the existing Society Hill development, which is a large residential area near the alignment.

Approximately 10,000 residents live in the study area. Besides the condominium developments near West Side Avenue Station, the population of the study area is concentrated on the blocks north of Yale Avenue and east of West Side Avenue.

There are approximately 340 businesses located in the study area, with a total of approximately 5,600 employees. Retail (e.g., eating and drinking establishments and clothing stores) comprises the largest portion of businesses at nearly 36 percent; the service industry (including auto repair services) follows with 29 percent. Government employment comprises nearly 9 percent of the jobs in the study area.¹

Under the No Action alternative, population and employment in the area is expected to increase due to the development of the western waterfront. No displacement of existing residents or businesses is expected.

The Preferred Alternative would not displace any residents or businesses and would not result in a loss of employment in the study area. As mentioned previously, the Preferred Alternative would work to support Jersey City's residential, commercial, and institutional development goals with improved transit access for the residents and employees of the study area.

3.1.9 CONCLUSIONS

The Preferred Alternative would extend an existing transit service and provide additional accessibility for those living and working in the neighborhood. In addition, the Preferred Alternative is identified in Jersey City's redevelopment plans in the area to support planned development and help connect the existing neighborhood to the riverfront walkway west of

¹ Source: ESRI Business Analyst Online

Route 440. The viaduct structure that would carry the Preferred Alternative through the neighborhood would be similar in character and appearance to the elevated portions of the HBLR throughout other areas of Jersey City and Bayonne. The construction of the Preferred Alternative would not result in the displacement of any businesses or residents and would therefore not require plans for relocation. No community facilities would be displaced as part of the Preferred Alternative and no parks or visual resources would be affected. Therefore, the Preferred Alternative would not result in adverse impacts on social conditions in the study area.

3.2 HISTORIC RESOURCES

Historic resources include both archaeological and historic architectural resources. Archaeological resources are potentially affected by direct impacts from construction activity resulting in disturbance to the ground surface, e.g., excavation, grading, or pile-driving. Historic architectural resources can be affected either directly or indirectly. Direct effects to historic architectural resources may include demolition or permanent alteration, as well as damage from construction through vibration, subsidence, collapse, etc. Indirect effects to historic architectural resources can include isolation of a resource from its setting or visual relationships with the streetscape, changes to a resource's visual prominence, and introduction of incompatible visual, audible, or atmospheric elements to a resource's setting.

Areas of Potential Effect (APEs) were established to identify and evaluate potential impacts on historic resources. To assess existing historic resources within these APEs and to evaluate potential impacts from the Preferred Alternative, Richard Grubb & Associates (RGA) completed a Historic Architectural Resources Background Study (HARBS) Phase IA Archaeological Survey and Effects Assessment Report (HARBS/Phase IA; September 2012), which included background research, a field visit, and an archaeological assessment.

Since the proposed project is subject to Section 106¹, a letter notifying and soliciting input on the identification of historic resources in the APE was sent to various local preservation groups and individuals with an identified interest in preservation, in addition to the New Jersey Historic Preservation Office (HPO). These interested groups received a copy of the HARBS/Phase IA for review and comment. No responses from interested groups have been received to date. In a letter dated November 21, 2012, the HPO concurred with the conclusions of the report, summarized below.

Because the project APE included one architectural resource eligible for listing on the National Register of Historic Places, the potential effect of the proposed project on this resource was evaluated, using the Criteria of Adverse Effect (36 CFR 800.5(a)(1)). While it was determined that the Preferred Alternative will have no adverse effect on this resource, with certain conditions (described below), the Advisory Council on Historic Preservation (ACHP) was invited

¹ Section 106 of the National Historic Preservation Act of 1966 (NHPA), as implemented by federal regulations appearing at 36 CFR Part 800, which mandates that federal agencies consider the effect of their actions on any properties listed on or determined eligible for listing on the National Register of Historic Places (NR). The basic steps of the Section 106 process are described in **Appendix A**, "Cultural Resources," which also documents Section 106 coordination efforts for this project.

to consult on the proposed project and to become a signatory to the Programmatic Agreement (PA). The ACHP declined to participate in a letter dated March 29, 2013.

The PA—which includes provisions for design review (to avoid adverse effects to architectural resources) and construction monitoring (to avoid adverse effects to archaeological resources)—has been executed and signed by FHWA, HPO, and NJ TRANSIT. A copy of the PA is included at the end of this document.

3.2.1 ARCHAEOLOGICAL RESOURCES

For the Preferred Alternative, the APE for archaeology (APE-Archaeology) includes all locations where the construction of the Preferred Alternative would result in construction-related or long-term ground disturbance, such as the location of the footings for the proposed viaduct and utility trenching. The APE-Archaeology is depicted in **Figure 3-6**. In a letter dated July 19, 2012, the HPO concurred with these APE delineations.

The survey concluded that portions of the APE-Archaeology within approximately 400 feet of Route 440 have a moderate likelihood to contain buried prehistoric archaeological resources (this is referred to as archaeological “sensitivity”). In addition, portions of the APE-Archaeology within the existing West Side Avenue park-and-ride lot have a high sensitivity for prehistoric archaeological resources (see **Figure 3-7**). The western portion of the APE-Archaeology has a high sensitivity for historic archaeological resources (see **Figure 3-7**). In this area, the APE-Archaeology crosses several potential resources:

- The former location of the Morris Canal, which is now listed on the State and National Registers of Historic Places, which is significant for its innovative engineering and its transportation contributions toward fostering the transformation of New Jersey into an industrial state;
- A location formerly occupied by a pipeline used by Standard Oil, the first major oil pipeline system in the United States; and
- Corridors that once housed the New York & New Jersey Water Company Pipeline, which provided drinking water to Newark in the 1890s.

In addition, a circa 1887 building, which was located on the west side of the Morris Canal and may have been related to the iron industry present in the area at the time, may fall within the APE-Archaeology west of Route 440.

The No Action Alternative would not affect archaeological resources in the APE-Archaeology.

If buried archaeological resources are present in the areas identified as sensitive, the Preferred Alternative could adversely affect some of these resources. This would result in an adverse effect on the Morris Canal, which as noted above is listed on the State and National Registers, and if the other potential resources are eligible for listing on the Registers, it would adversely affect those resources. To identify whether intact archaeological resources are present in the areas identified with archaeological sensitivity, additional investigation would be conducted in coordination with the HPO. If resources are present, and it is determined that adverse impacts to eligible resources may occur as a result of construction of the Preferred Alternative, then FTA and NJ TRANSIT would coordinate with the HPO and any relevant Section 106 Consulting Parties to identify ways to avoid, minimize, and/or mitigate adverse effects, as appropriate.

To ensure that this process is followed during the design and construction of the Preferred Alternative, the PA that has been executed among FTA, NJ TRANSIT, and the HPO sets forth the investigation to be conducted in advance of construction in areas identified as having a moderate to high sensitivity for archaeological resources. In areas with moderate to high sensitivity for prehistoric archaeological resources, it is anticipated that a geomorphological examination of geotechnical borings conducted in support of viaduct design would be used to determine if any soils have the potential to contain intact, significant prehistoric archaeological resources, as well as to determine their depths and locations. If the soils are found to retain the potential for intact resources, FTA and NJ TRANSIT would prepare an archaeological protocol in consultation with the HPO and relevant Section 106 Consulting Parties to identify the presence or absence of archaeological resources (Phase IB Survey), determine eligibility for listing in the National Register of Historic Places (Phase II Survey), and assess project effects, if necessary. In areas of high sensitivity for historic archaeological resources (i.e., Morris Canal, Standard Oil pipeline, New York & New Jersey Water Company Pipeline, and former location of a circa 1887 building), it is anticipated that the construction of the Preferred Alternative would be monitored by a professional archaeologist. The archaeologist would be present during any construction activities involving soil disturbance (e.g. excavation) to identify any archaeological resources that are present in the disturbed soils.

3.2.2 HISTORIC ARCHITECTURAL RESOURCES

The APE for historic architectural resources (APE-Architecture) includes the area in which the Preferred Alternative may directly or indirectly cause changes in the character or use of historic properties, if any such properties are located there. To account for potential visual or contextual effects, the APE-Architecture extends beyond the actual construction limits of the Preferred Alternative to include those properties that may be affected by visual changes, patterns of use, or may experience a change in historic character associated with the construction of the Preferred Alternative. The APE-Architecture is depicted on **Figure 3-8**.

The architectural survey conducted as part of the Phase IA investigation identified 34 structures more than 50 years of age in the APE-Architecture. Of these, only one met the criteria for listing in the National Register of Historic Places as an above-ground historic property: the former Candy Factory on West Side Avenue adjacent to the HBLR station (see **Figure 3-9**, photo 1). The former Candy Factory (now the Board of Education Building) has been determined eligible for listing on the National Register of Historic Places (SHPO Opinion: 2/28/1991) under Criterion C for architecture. Previously identified character-defining features include: brick ornament at the segmental-arch bay openings; continuous brick courses at the spandrels; large expanses of horizontal windows within narrow bands of brick piers; suppressed segmental arches at the cornice level; and the setting of the factory building adjacent to the tracks of the former Newark & New York branch of the Central Railroad of New Jersey (which has since been replaced by the HBLR West Side Avenue Station).

The No Action Alternative would not affect the former Candy Factory building or any other historic structures identified within the APE-Architecture.

The construction of the Preferred Alternative calls for the demolition of a nearby bridge abutment and pair of staircases at West Side Avenue (see **Figure 3-9**, photos 2 and 3) and the construction of a new bridge abutment as well as new access stairs and ADA-compliant ramps.

These features were found not to meet the criteria for listing in the National Register. The new access features at West Side Avenue Station would not result in physical changes to the former Candy Factory building. In terms of potential contextual changes, the design of the project has not advanced sufficiently to allow for a full assessment of impacts on the character-defining features of the National Register-eligible former Candy Factory however, available preliminary design indicates that the project would not diminish the historic property's architectural significance or character-defining qualities. Therefore, the Preferred Alternative would have no adverse effect on the National Register-eligible former Candy Factory with the following conditions:

- As the design of the Preferred Alternative progresses, project plans in the vicinity of the former Candy Factory would incorporate the Secretary of the Interior's *Standards for the Treatment of Historic Properties*, including context-sensitive treatments in conjunction with the proposed abutment, staircases, and ramps.
- The HPO will be afforded an opportunity to review and comment on the final design plans as they may affect the former Candy Factory, as outlined in the PA included at the end of this EA.

With the implementation of context-sensitive treatments and HPO coordination, the Preferred Alternative would have no adverse effect on historic architectural resources in the study area.

3.3 TRANSPORTATION

This section discusses potential impacts from the Preferred Alternative on traffic, transit service, pedestrian circulation, and parking.

3.3.1 TRAFFIC

Manual vehicle turning movement counts were performed during a weekday between 7:00 AM and 10:00 AM and 4:00 PM and 7:00 PM at Mallory and Claremont Avenues, the southern parking lot driveway at Pollock Avenue, and at the western parking lot driveway at Mallory Avenue, to characterize existing traffic conditions in the study area. Continuous traffic counts were taken over seven days at two locations across Route 440. The results of the traffic counts are included in **Appendix B**.

Except for Route 440, which serves as a major arterial roadway through the west side of Jersey City, traffic volumes in the study area are light to moderate, and volumes are well below the operating capacities of the area roadways. The West Side Avenue Station parking lot is not well utilized, and therefore, volumes in and out of its driveways are low throughout the day.

In the future, new development on the western waterfront will increase automobile traffic in the study area. A new roadway system will be created at Bayfront, new roads are planned on the east side of Route 440 between the highway and Mallory Avenue, and reconstruction for Route 440 is planned for the long-term future by Jersey City and the New Jersey Department of Transportation (NJDOT).

Without a new Bayfront Station, the number of passengers at the West Side Avenue Station will increase substantially over existing conditions, and the number of passengers who drive to the station and use the park-and-ride lot will also increase. According to ridership forecasts

prepared by NJ TRANSIT, the No Action Alternative would result in approximately 2,700 more passengers per day at West Side Avenue Station over existing conditions.

The Preferred Alternative's alignment would be constructed on a viaduct over several major north-south streets in the study area—West Side Avenue, Mallory Avenue, and Route 440—however, pier placement and vertical clearance design would ensure that the viaduct would not change traffic operations in the area or interfere with the planned street grid there. The Preferred Alternative would reconfigure the West Side Avenue Station parking lot, but would maintain entrances and exits in approximately the same locations as today. As shown in the ridership projections provided in **Appendix B**, patronage at the West Side Avenue Station would grow over the next several years with or without implementation of the Preferred Alternative. However, as shown there, the Preferred Alternative would result in fewer new riders at the West Side Avenue Station than the future baseline (No Action) condition since many riders would instead use the new Bayfront Station. As there would be less demand at this station with the Preferred Alternative, associated vehicle trips would also be lessened. Therefore, vehicle volumes on local streets would be lower than in the No Action Alternative, and the Preferred Alternative would not adversely impact traffic operations.

3.3.2 PARKING

Access to the existing HBLR West Side Avenue Station parking lot is available from Claremont, Mallory, and Pollock Avenues. The existing parking lot provides 800 spaces, and on normal weekdays approximately one-third of the lot is occupied. A passenger drop-off/pick-up facility with 18 spaces is located near the existing station elevator and is accessible from Claremont Avenue.

No changes to the HBLR West Side Avenue Station parking lot are planned under the No Action Alternative and it is assumed that the percentage of passengers utilizing the parking lot would remain unchanged. Therefore, under the No Action Alternative, there would be a demand for approximately 689 parking spaces; the existing 800 spaces would be sufficient to meet parking demand under No Action Alternative.

To accommodate the Preferred Alternative's new viaduct (see **Figure 2-2** in Chapter 2), the existing HBLR West Side Avenue Station parking lot would be reconfigured. The passenger drop-off/pick-up area would be located perpendicular to its existing location, with two access points provided from Claremont Avenue. Six spaces would be provided in the reconfigured passenger drop-off/pick-up area. Access from Claremont, Mallory, and Pollock Avenues would be maintained in approximately the same locations as today. The future lot would provide for 682 spaces, a reduction of 118 spaces.

Ridership forecasts (see **Appendix B**) project an increase in patronage at the West Side Avenue Station with implementation of the Preferred Alternative, but growth in ridership would be lower than in the 2035 No Action condition. As previously noted, visual observations identified the existing parking lot as about 33 percent occupied (264 used spaces and 536 unused spaces). Assuming the percentage of passengers utilizing the parking lot would be unchanged in the future condition, there would be demand for approximately 438 spaces under the Preferred Alternative. As 682 total spaces would be provided, the lot would not be filled, and the Preferred Alternative would not adversely impact parking.

3.3.3 HBLR OPERATIONS

The Preferred Alternative would increase HBLR run times on the HBLR West Side Avenue branch as it would increase the total distance traveled by the trains. A train performance and capacity analysis conducted by NJ TRANSIT indicates that the 8-minute round trip between West Side Avenue Station and the new Bayfront Station could generally be accommodated by existing headways on HBLR trains, during both peak and off-peak periods. There are currently 6-minute headways on the HBLR schedule during limited periods of the peak hour. These headways could be revised to accommodate a full run to the Bayfront Station without significant impacts on HBLR operations from the Preferred Alternative.

In the 2035 analysis year, the Preferred Alternative would result in 4,700 more total riders each day on the HBLR system than the No Action Alternative. As mentioned above, under the No Action Alternative, there would be an increase in riders at the West Side Avenue Station as compared to existing conditions, because of the substantial new development expected in the area. The Preferred Alternative would add the Bayfront Station, which would both attract new riders and divert some passengers from the West Side Avenue Station. As such, the Preferred Alternative results in fewer riders at the West Side Avenue Station than the No Action Alternative. NJ TRANSIT would design the Bayfront Station to safely accommodate projected ridership. Therefore, the Preferred Alternative would not adversely impact station operations.

A capacity analysis was prepared to estimate the potential for crowding on HBLR trains as a result of new riders from the Preferred Alternative. The analysis found that the Preferred Alternative would have a peak hour load factor (passengers vs. available train capacity) of 0.83 at the point where trains are most crowded (i.e., between Jersey Avenue and Liberty State Park). A load factor of less than 1.0 (300 riders per train) indicates that additional capacity is available. Since the estimated load factor is below 1.0, the Preferred Alternative would not adversely impact crowding on HBLR trains.

3.3.4 PEDESTRIAN CIRCULATION AND ACCESSIBILITY

No changes to pedestrian circulation and accessibility at the HBLR West Side Avenue Station are planned under the No Action Alternative.

The Preferred Alternative would not affect pedestrian circulation in the study area since the Preferred Alternative would be constructed on a viaduct throughout the proposed alignment, with pedestrian access provided underneath the viaduct where appropriate. Access to the existing West Side Avenue station would be improved with the Preferred Alternative. West Side Avenue Station would be reconstructed with an elevator and stair tower to the park and ride lot, one of the existing entrances (the staircase on the south side of the proposed alignment), ADA compliant ramps to West Side Avenue and Halstead Street, and a new access point to Orient Avenue on the south side of the station. The Bayfront development west of Route 440 has incorporated the Preferred Alternative in its redevelopment plan and has provided for pedestrian access to the new Bayfront Station to be constructed as part of the Preferred Alternative. Therefore, the Preferred Alternative would result in overall positive impacts to transportation services in the study area.

3.4 AIR QUALITY, ENERGY, AND GREENHOUSE GAS EMISSIONS

The National Ambient Air Quality Standards (NAAQS) were established by the U.S. Environmental Protection Agency (USEPA) under the authority of the Clean Air Act (42 USC §§ 7401 et seq.) and apply for outdoor air throughout the country. Primary standards are designed to protect human health. Secondary standards are designed to protect public welfare from any known or anticipated adverse effects of a pollutant. An area meeting the NAAQS is known as an “attainment area.” If an area does not meet the NAAQS, it is known as a “non-attainment area.”

Hudson County, New Jersey, has been designated by the USEPA as a moderate non-attainment area for the 8-hour NAAQS for ozone. Hudson County is also a non-attainment area for the 1997 and 2006 Particulate Matter (PM)_{2.5} standards.

In the No Action Alternative, absent a convenient public transit option, some future residents of the Bayfront development are expected to commute by car, resulting in an overall increase of vehicle miles traveled (VMT) in the region. Those future residents of the Bayfront Development that choose to commute by public transit area likely to drive to or be dropped off at West Side Avenue Station, resulting in a localized increase in automobile traffic and an associated increase in vehicle emissions.

The Preferred Alternative would not result in an increase in pollutant emissions since the HBLR trains are electrically operated. With schedule modifications, adequate capacity exists with the existing fleet and service levels to accommodate the new ridership projected for the Preferred Alternative; therefore, the Preferred Alternative would not have an adverse effect on emissions related to electricity generation.

The Preferred Alternative would provide a public transit option for the residents of Bayfront who might otherwise commute by car. As noted above, the Preferred Alternative would generate 4,700 new daily boardings on the HBLR system as compared to the No Action Alternative. Since some of these new riders would be diverted from private automobiles, the Preferred Alternative would reduce VMT. This decrease in VMT represents a benefit of the project, as it would lower vehicular emissions, energy demand, and greenhouse gases, as compared to the No Action Alternative, and would therefore improve local and regional air quality, including ozone and PM_{2.5}, which are pollutants of concern for Hudson County.

Therefore, the Preferred Alternative would not result in adverse impacts on air quality, but rather, would result in an overall regional air quality benefit.

3.5 NOISE AND VIBRATION

An assessment of noise and vibration was conducted in accordance with methodologies set forth in *Transit Noise and Vibration Impact Assessment* (Federal Transit Administration [FTA], May 2006) to examine potential impacts that might result from operation of the Preferred Alternative. The assessment accounted for the introduction of new transit service on the proposed alignment, assuming the same levels of service as currently operated on the West Side Avenue Branch.

Sound pressure levels are measured in units called “decibels” (dB). For a uniform noise measurement that simulates people’s perception of loudness and annoyance, the decibel

measurement is weighted to account for those frequencies most audible to the human ear. This is known as the A-weighted sound level, or “dBA.” The sound-pressure level unit of dBA describes a noise level at just one moment, but since very few noises are constant, other ways of describing noise over more extended periods have been developed.

The FTA guidance manual defines noise criteria based on the specific type of land use that would be affected, with explicit operational noise impact criteria for three land use categories. One of the categories, which includes residences, hospitals, and other locations where nighttime sensitivity to noise is very important, requires examination using the 24-hour day/night noise descriptor, which weights nighttime noise because of its greater potential for disruption. This descriptor is referred to as L_{dn} . (Please see **Appendix C** for further detail on the methodologies used to assess the potential for noise and vibration impacts from operation of the proposed HBLR project and calculations used to support the assessment of noise and vibration outlined below.)

For the analysis of noise, two noise receptor sites (i.e., existing residences closest to the alignment of the Preferred Alternative) were selected for the assessment (see **Figure 3-10**). At each receptor location, noise measurements were performed to establish existing noise levels (see **Table 3-1**).

Table 3-1
Noise Receptor Sites and Existing Noise Levels

Receptor Site	Measurement Location	Land Use Category	Type of Measurement	L_{dn} (dBA)
1	West Side Station condominiums on Mallory Avenue	2-Residential	24-hour	62.4
2	Across Grand Avenue from Grant Street West development	2-Residential	AM/MD/PM/LN 20 minute ¹	62.4 ²
Notes:				
¹ AM = morning peak hour; MD = midday; PM = evening peak hour; LN = late night				
² L_{dn} computed by measured values				

In the future, the general increase in traffic around West Side Avenue Station due to new development may result in an increase in ambient noise levels.

The No Action Alternative would not introduce a new fixed-rail transit alignment near the two receptor sites, and therefore would not change noise or vibration levels at those receptor sites.

Table 3-2 shows the results of the noise impact assessment performed for the Preferred Alternative. Moderate impacts would occur at residential residential locations within 75 feet from rail centerline, and severe impacts would occur at residential locations within 30 feet from rail centerline. The nearest sensitive residential uses (i.e., the receptor locations closest to the alignment of the Preferred Alternative) are farther from the rail centerline than those impact locations identified above. Consequently, no residential receptors would experience noise levels that exceed the FTA impact thresholds and the Preferred Alternative would not result in moderate or severe noise at nearby residential uses.

**Table 3-2
Noise Impact Evaluation**

Receptor Site	FTA Land Use Category ¹	Noise Descriptor	Distance to Receptor	Existing Noise Level (dBA)	FTA Impact Criteria ²		Project Noise Exposure (dBA)	Impact?	Distance from Rail Centerline to Onset of Impact (ft)	
					Moderate Impact	Severe Impact			Moderate Impact	Severe Impact
1	2	L _{dn}	100	62.4	59.2	64.7	57	No	75	30
2	2	L _{dn}	110	62.4	59.2	64.7	56	No	75	30

Note:
¹ See Table 3-2 in "Transit Noise and Vibration Impact Assessment" for a description of FTA Land Uses.
² See Table 3-1 in "Transit Noise and Vibration Impact Assessment" for thresholds of FTA Impact Criteria.

Table 3-3 shows the results of the vibration impact assessment performed for the Preferred Alternative. Ground-borne vibration impacts would occur at locations within 60 feet from rail centerline, and ground-borne noise impacts would occur at locations within 80 feet from rail centerline. The project exposure levels at the selected receptors (i.e., the closest possible sensitive residential uses to the Preferred Alternative’s alignment), which are located 100 and 115 feet from the rail centerline respectively, would not exceed the FTA impact thresholds. Consequently, the Preferred Alternative would not result in any adverse vibration impacts at any of the receptor sites.

**Table 3-3
Vibration Impact Evaluation**

Receptor Site	FTA Land Use Category ¹	FTA Impact Criteria ²		Project Exposure Level		Threshold Exceeded	Impact Distance in feet	
		Vibration (VdB)	Ground-Borne Noise (dBA)	Vibration (VdB)	Ground-Borne Noise (dBA)		Ground-Borne Vibration (VdB)	Ground-Borne Noise (dBA)
1	2	72	35	68	33	No	60	80
2	2	72	35	67	32	No	60	80

Notes:
¹ See page 8-2 in "Transit Noise and Vibration Impact Assessment" for a description of FTA Land Uses
² See Table 8-1 in "Transit Noise and Vibration Impact Assessment" for thresholds of FTA Impact Criteria

3.6 INFRASTRUCTURE

HBLR operations under the No Action Alternative would not affect utility infrastructure in the study area. The No Action Alternative would not require utility relocation, since it would not introduce a new viaduct.

Sections of existing utilities in the area, identified through record review and existing engineering design efforts, may have to be relocated to accommodate the alignment of the Preferred Alternative:

- 96" storm drainage chamber running along northern boundary/limits of the Bayfront Redevelopment property.
- 54" sanitary sewer force main running east-west under Route 440 near Culver Avenue intersection.
- 42" water main running north-south under Route 440 median.

- Overhead electrical power lines along Mallory Avenue and Route 440.

All utility relocations would be undertaken in coordination with the respective utility owners and operators, and all efforts would be made to avoid any disturbances to local residents and businesses. Any utility relocations taking place in areas of high archaeological sensitivity (e.g. the 42" water main under Route 440, which may be located within the Morris Canal) would be subject to archaeological monitoring consistent with the executed PA.

3.7 HAZARDOUS MATERIALS

The western waterfront area of Jersey City was the location of numerous industries in the past that are known to have contaminated soil and groundwater in the vicinity. For example, the site proposed for the Bayfront development is known to be contaminated with chromium, among other substances, and is currently undergoing remediation.

To identify the potential contamination that may be present in and near the alignment of the Preferred Alternative, so that appropriate mitigation can be identified, BEM Systems, Inc. (BEM) prepared a Limited Preliminary Assessment Report (PAR) for the Preferred Alternative. The Limited PAR was prepared in general accordance with the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (TRSR), New Jersey Administrative Code (N.J.A.C.) 7:26E (Subchapter 3), amended 7 May 2012, as well as the associated NJDEP January 2012 Linear Construction Project (LCP) Technical Guidance document.

BEM reviewed state and federal environmental records for a 1-mile radius from the Preferred Alternative's alignment. A total of 31 properties with potential Areas of Environmental Concern (AOCs) were identified through this review, which were then refined based on the specific records found and their proximity to the Preferred Alternative. Properties of concern have confirmed releases of hazardous materials and are located within the Preferred Alternative's proposed alignment, adjacent to the alignment or upgradient, i.e., contaminated groundwater can flow to the alignment from these sites. A total of ten such sites, listed in **Table 3-4** and shown in **Figure 3-11** were identified.

The ten identified sites were evaluated in further detail by submitting Open Public Record Access (OPRA) requests to the NJDEP and local governments; searching NJDEP online I-Map Geographic Information Systems (GIS) database for additional information on any properties with known contamination; and reviewing Deed Notices, available historical documents and aerial photographs, Sanborn Fire Insurance Maps, and topographic maps from 1896 to 2006.

The principal suspected contaminants of concern within the Preferred Alternative footprint are volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) (including polycyclic aromatic hydrocarbons [PAHs]), polychlorinated biphenyls (PCBs), and heavy metals. Potential origins of these contaminants are discussed below:

**Table 3-4
Sites Identified for Further Investigation**

Key to Figure 3-11	Site Address, Block/Lot	Site Name
1	575 Route 440, Block 01290A, Lot 16A	JCDPW/Jersey City Incinerator Authority Chrome Site No. 87
2	250 Culver Ave., Block 1775.01 Lot 81	Alpha Metals Inc. (Cookson Electronics)
3	483 and 485 Claremont Ave., 55 Mallory Ave. Block 1775A, Lot 87,81,93	Apex Trucking Terminal/CEFER II Meridian Distribution Service (Centex Homes)
4	475 Claremont Ave., Block 21701, Lot 8	Gaines Motor Lines Inc. (Centex Homes)
5	55 Mallory Avenue Block 21701, Lot 8	Apex Trucking Terminal (Centex Homes)
6	423 Claremont Ave., Block 21802, Lot 1	Shoe Taylor Inc./Robush Corporation (West Side Avenue Station Park & Ride)
7	418 Claremont Ave., Block 21801, Lots 4,5 400 Claremont Ave., Block 21801, Lots 8,16,17,18,19	Brunnquell Iron Works Inc./Elementis Daniel Products Company/Elementis
8	48 Pollock Ave., Block 21802, Lots 31	YT Trucking Co. Inc./Former Y&T Realty (West Side Avenue Station Park & Ride)
9	30 Pollock Ave Block 21802, Lot 29	NJT HBLRTS Initial Operating System (West Side Avenue Station Park & Ride)
10	585 Route 440	Hudson Toyota/Nissan Dealership

- VOCs are compounds that include aromatic compounds such as benzene, toluene, ethylbenzene, and xylene (BTEX), which are found in gasoline and other fuel products, vehicle repair and metal works, as well as many other industries; and chlorinated compounds such as trichloroethylene (TCE) and tetrachloroethylene (PCE), common ingredients in solvents and cleaners used in metal degreasing, dry cleaners, and other industrial facilities.
- SVOCs include PAHs which are common constituents of partially combusted coal or petroleum-derived products; coal-derived products such as creosote applied to protect rail ties; and coal and coal ash used as fill.
- PCBs were commonly used as a dielectric fluid in train-mounted or yard transformers and are therefore of special concern at rail yards and train maintenance locations.
- Heavy metals include lead, cadmium, chromium, and mercury. These have been widely used in many industries, including printers, foundries, and metal working facilities and are found in paint, ink, petroleum products, and coal ash and cinders. Lead is also a common component of paint on bridges or other steel structures, and can be found in elevated concentrations in soil near roadways as a result of the historic use of leaded gasoline.

In the No Action Alternative, no HBLR extension would be introduced. It is likely that the Cookson Electronics site and Bayfront Station site would be developed by others. Any building demolition, subsurface disturbance, and materials removal would be undertaken in accordance

with all applicable rules and regulations to identify potential contamination, reduce worker or public contact with this contamination, and to remediate as necessary.

The sites listed in **Table 3-4** will be further investigated during final design of the Preferred Alternative. The additional investigation will consist of collection and analysis of environmental soil and groundwater samples to determine the type and extent of contamination within the construction area. The data collected will be used to prepare a Materials Management Plan for soil and groundwater for handling these materials during construction activities under the oversight of a Licensed Site Remediation Professional. A Construction Health and Safety Plan (CHASPs), approved by NJDEP, would be developed for the various construction activities associated with the Preferred Alternative to reduce the potential for worker or public contact with soil or groundwater contamination. With the implementation of these preventative measures, the Preferred Alternative would not result in any adverse impacts from hazardous materials.

3.8 NATURAL RESOURCES

This section of the EA describes natural resources present in the study area and evaluates the compliance of the Preferred Alternative with relevant natural resource protection regulations. As the No Action Alternative would not directly result in changes to natural resources, the following discussion focuses on the potential effects of the Preferred Alternative.

There are no designated Critical Environmental Areas, and field reconnaissance identified no significant habitats in the vicinity of the proposed alignment of the Preferred Alternative. The ecological characteristics of the study area are typical of an urban environment.

3.8.1 GEOLOGY, TOPOGRAPHY, AND SOILS

The topography in the general vicinity of the study area is generally flat to very gently sloping.

Subsurface soil in the study area consists of historic fill material ranging between 2 to 25 feet in thickness underlain by natural soils and bedrock. Fill material consists of sand, gravel, and silt with varying amounts of cinders, coal ash, concrete, brick fragments and other miscellaneous debris. Natural soil underlying the fill material consists predominantly of fluvial sands and gravels with lenses of organic clayey silt. The natural sediments range from 17 to 54 feet in thickness. Bedrock consisting primarily of red to brown sandstone with lesser amounts of siltstone would be encountered from 25 to 85 feet below ground surface.

Construction depths for the Preferred Alternative would be limited in depth (a maximum of 20 feet for drilled pier foundations) and extent and would have no adverse impacts on local geology, topography or soils.

3.8.2 WATER QUALITY

The Preferred Alternative would not involve in-water construction activities nor would it result in a net increase in impervious surfaces in the study area. As noted below, the Preferred Alternative would include appropriate best management practices (BMPs) to control the quality of water discharged during construction. Therefore the Preferred Alternative would not result in adverse impacts on water quality.

3.8.3 FLOODPLAINS

Development in floodplains defined by Federal Emergency Management Agency (FEMA) mapping is regulated at the federal level by the Floodplain Management Executive Order 11988 and National Flood Insurance Act of 1968 (44 CFR § 59). Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Because of its close proximity to the river, portions of the study area fall within the 100-year (area with a 1 percent chance of flooding each year) and 500-year (area with a 0.2 percent chance of flooding each year) base flood elevation¹ (see **Figure 3-12**). Based on a review of historic FEMA flood maps, base flood elevations in the study area have remained unchanged (see **Figure 3-13**). Flooding in the study area during Superstorm Sandy in October 2012 was largely consistent with mapped flood zones, except for an area on Route 440 south of the study area and an area north of the proposed alignment on the site of existing car dealership parking lots (see **Figure 3-14**). At the time that Superstorm Sandy hit, FEMA had been in the process of revising its base flood elevation maps, many of which were initially adopted in the 1980s. FEMA released Advisory Base Flood Elevation (ABFE) maps based on the partially completed revisions in order to help recovery efforts. FEMA is now in the process of releasing preliminary work maps which are based on the same underlying data as the ABFE maps, but include the results of a more refined analysis of shoreline conditions, including the effects of erosion and wave run-up. When the new maps are formally adopted, they are anticipated to raise the base flood elevation in the study area by several feet.

One pier of the proposed alignment, in the median of Route 440, would fall within the 500-year flood elevation. However, Route 440 is already entirely paved and the construction of this pier would not constitute an increase in impervious surfaces in the 500-year flood zone. Plans for the redevelopment of Route 440 also include provisions to elevate the roadway out of the floodplain. Furthermore, at this point of the alignment, the height of the viaduct structure would be approximate 19 feet, 10 inches, well above the existing elevation. Therefore, the Preferred Alternative would not result in any adverse impacts to floodplains in the study area. The Preferred Alternative does not constitute a significant floodplain encroachment and therefore complies with the provisions of Executive Order 11988.

3.8.4 WETLANDS

In accordance with Executive Order 11990, "Protection of Wetlands," and U.S. Department of Transportation (USDOT) Order 5660.1a, "Preservation of the Nation's Wetlands," federal agencies must avoid undertaking or providing assistance for new construction in wetlands unless there is no practical alternative to such construction and the proposed action includes all practicable measures to minimize harm to the wetland.

¹ The base flood elevation is the FEMA computed elevation to which floodwater is anticipated to rise during a base flood. The base flood elevation serves as the regulatory requirement for the elevation of flood-proofing of structures.

The Hackensack River and a small area of its shoreline are mapped wetlands (see **Figure 3-15**, “Wetlands Mapped by National Wetlands Inventory and NJDEP”). However, the Preferred Alternative’s alignment is outside of any wetlands boundaries and therefore would not result in any adverse impacts to wetlands in the study area. Executive Order 11990 does not apply to the Preferred Alternative.

3.8.5 COASTAL ZONE CONSISTENCY

The federal Coastal Zone Management Act (CZMA) of 1972 was established to encourage coastal states to manage development within the states’ designated coastal areas to reduce conflicts between coastal development and protection of resources within the coastal zone. Requirements for federal approval of coastal zone management programs and grant application procedures for development of the state programs are included in 15 CFR Part 923, Coastal Zone Management Program Development and Approval Regulations, National Oceanic and Atmospheric Administration (NOAA). The CZMA requires that federal activities within a state’s coastal zone be consistent with that state’s coastal zone management plan.

New Jersey has a federally approved coastal zone management program, which is administered by NJDEP, who released updated coastal zone management regulations in March 2011. NJDEP regulates coastal zone activities under N.J.A.C. Section 7:7, “Coastal Permit Program Rules.” N.J.A.C. 7:7 defines:

“...the procedures by which the Department of Environmental Protection will review permit applications and appeals from permit decisions under the Coastal Area Facility Review Act (CAFRA, N.J.S.A. 13:19-1 et seq.), the Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.) and the Waterfront Development Law (N.J.S.A. 12:5-3). These procedures also govern the reviews of Federal Consistency Determinations issued pursuant to the Federal Coastal Zone Management Act, 16 U.S.C. 1451 et seq., and Water Quality Certificates issued pursuant to Section 401 of the Federal Clean Water Act, 33 U.S.C. 1251 et seq., when the approvals are sought in conjunction with any of the foregoing permit applications. N.J.A.C. 7:7E.”

The study area for the Preferred Alternative is outside the CAFRA Zone. As noted above, small portions of the study area, located away from the Preferred Alternative’s alignment, are mapped as NJDEP and NWI wetlands. As required by the Coastal Permit Program Rules, the study area was also evaluated for the applicability of NJDEP’s Waterfront Development Law which regulates not only activities in tidal waters, but also the area adjacent to the water, extending from the mean high water line to the first paved public road, railroad, or surveyable property line.¹ The mean high water line near the study area is represented by the shoreline depicted on the USGS Jersey City, N.J.-N.Y Quad (photorevised 1981), which is also the nearest surveyable property line (Block 21901 Lot 9, owned by the City of Jersey City). The proposed location of Bayfront Station, the terminus of the Preferred Alternative, is over 500 feet from these boundaries. Therefore, the Preferred Alternative’s alignment is located outside the coastal zone boundary and a determination of consistency with the Coastal Zone Program Rules is not required.

¹ <http://www.nj.gov/dep/landuse/coast.html>. Accessed March 29, 2012.

3.8.6 VEGETATION AND WILDLIFE HABITAT

The Preferred Alternative would be located in a fully developed urban area and does not contain any significant natural features. The Preferred Alternative's alignment is paved and does not provide any substantial habitat for plants and animals. Plants in the study area are limited to a small landscaped area on the Cookson property and landscaping on the Jersey City Department of Public Works property. Therefore, neither the No Action Alternative nor the Preferred Alternative would result in any adverse impacts to terrestrial plant or animal resources in the study area.

3.8.7 THREATENED AND ENDANGERED SPECIES

There are no federally listed or proposed threatened or endangered species known to occur in the vicinity of the Preferred Alternative¹. Correspondence with the NJDEP Natural Heritage Program regarding any state-listed or proposed threatened or endangered species is included in **Appendix D**. This correspondence indicates that no rare plant species, ecological communities, or rare wildlife species or habitat is present in the study area t; therefore, neither the No Action Alternative nor the Preferred Alternative would result in impacts on threatened or endangered species. Several species of waterfowl have the potential to be present near the proposed alignment. No impacts to these waterfowl are expected from the No Action Alternative. The Preferred Alternative would not involve any in-water elements, and Bayfront Station, the closest portion of the Preferred Alternative to the Hackensack River, is located over 500 feet from the shoreline, therefore, no adverse impacts to state-threatened waterfowl are expected.

3.9 CONSTRUCTION IMPACTS

The No Action Alternative would not involve construction activities and therefore would also not result in construction impacts. Therefore, the following discussion focuses on the Preferred Alternative.

3.9.1 DESCRIPTION OF CONSTRUCTION ACTIVITIES

Based on conceptual design information, construction of the Preferred Alternative would last an estimated 36 to 42 months. While the exact construction methods and sequencing is not fully determined, a conceptual outline of major construction activities and their durations is presented in **Table 3-5**. The outline is based on preliminary engineering work performed to date, the general details and elements of the Preferred Alternative, and experience with similar light rail-on-viaduct extension projects.

¹ <http://www.fws.gov/northeast/njfieldoffice/pdf/munlist.pdf> Accessed March 29, 2012

Table 3-5
Conceptual Construction Sequence and Duration

No.	Construction Step	Approximate Duration
1	Mobilization and establishment of staging areas	1 month
2	Establishment of protections and initial sitework	2 to 3 months
3	Relocation of local utilities around the project site	9 to 12 months
4	Demolition of existing features ¹	1 to 2 months
5	Construction of abutment and concrete piers and erection of the superstructure	12 to 15 months
6	Installation of track	3 to 4 months
7	Installation of communications and signals equipment and cables	6 to 9 months ²
8	Installation of overhead catenary system and signals	6 to 9 months ³
9	Construction of Bayfront Station	9 to 12 months ⁴
10	Project "punchlist," commissioning, and closeout	3 to 4 months
Total		36-42 months
Notes:		
1	Demolition can be performed concurrently with initial sitework and utility relocation.	
2	Work can be performed concurrently with installation of overhead catenary system.	
3	Work can be performed concurrently with communications and signals.	
4	Sitework can be performed concurrently with pier structures and trackwork.	
Source: Gannett Fleming, Inc,		

Prior to initiation of construction, the contractor would establish an on-site project office to direct daily project activities, set up construction staging and storage areas, and mobilize heavy equipment. It is assumed that portions of the existing HBLR West Side Station parking lot, the Cookson Site and areas of the Bayfront Site could be utilized for material storage and staging. Activities to prepare the Preferred Alternative's alignment for construction would include surveying, site clearing, and setting protection fencing around work areas, and establishing soil erosion and sediment control measures around planned excavation locations. Barricades, signs, pavement striping and other measures to maintain and protect traffic (both pedestrian and vehicular) would also be set up. The Preferred Alternative's alignment would require the demolition of the building on the Cookson site. The existing pedestrian bridge over West Side Avenue would also have to be demolished.

Construction of the Preferred Alternative's viaduct would begin with construction of 35 new concrete piers to support the viaduct structure, beginning at the West Side Avenue Station and terminating to the west of Route 440 at the proposed Bayfront Station. The piers would have drilled shaft foundations supporting large concrete caps. Multiple spans would be constructed and erected simultaneously. Steel girders would be transported to the site in stages throughout the construction period by flatbed truck. Once on-site, a crane would be used to remove the girders from each flatbed and position them for erection by construction crews, as necessary. Following the erection of the steel girders, the poured concrete deck and plinth construction would occur. Continuously welded rail track would be affixed directly to the concrete plinths.

To carry communications and signals cables, the existing HBLR cable trough system would be extended for the length of the viaduct to the new Bayfront Station. Cable installation would be conducted from on top of the deck itself. The contractor would also install signals on the

viaduct structure itself. The signals would either be located on the edges of the deck on a reinforced extended parapet, or at the centerline of the deck in the separated track sections. A new substation may be required for the operation of Bayfront Station; the need for the substation would be determined as the design of the Preferred Alternative progresses. The substation would be constructed within the footprint of Bayfront Station and would not require any additional construction disturbance.

The existing HBLR train electrification system would remain in operation to maintain train traffic at the West Side Avenue Station until the contractor completes all construction activities for the Preferred Alternative. At that point, bridge-mounted catenary poles would be installed for the length of the viaduct. Once the catenary poles are installed, the contractor would affix wire to the poles using a wire train, which consists of specialized equipment to reach, install, and adjust the catenary system and transport necessary supplies to the work site.

For construction of Bayfront Station, contractors would clear and grade the proposed site, pour the station foundation, frame the building, add mechanical/electrical/plumbing features, install the roof system, and complete finishing details. This work would be conducted in coordination with construction occurring at Bayfront, if any.

3.9.2 TRAFFIC

Construction of the Preferred Alternative would involve temporary traffic impacts along the alignment. Construction on-site would generally occur during normal work hours (e.g., 7AM to 4PM) to minimize effects on residents and workers, and a construction schedule would be coordinated with local agencies. Staging and initial preparation activities may require temporary street closures or short-term interruptions of traffic flow on West Side, Mallory, Claremont, and Pollock Avenues to facilitate deliveries of materials or positioning of heavy equipment. Safe pedestrian corridors around work areas would be established during this phase of construction. There are no mapped bicycle routes in the study area that would have to be relocated as a result of the construction of the Preferred Alternative.

During active demolition of the existing pedestrian bridge from the HBLR West Side Avenue parking lot to the station, West Side Avenue would be temporarily closed to protect traffic and pedestrians from falling debris. Efforts would be made to schedule the demolition for periods of lower traffic and pedestrian activity. A detour—i.e., along Mallory, Claremont, Pollock, and Culver Avenues—would be established to maintain traffic.

Depending on the location of the piers being constructed, temporary closures of sidewalks, travel lanes or curbside parking lanes may be required on local streets. It may also be necessary to close portions of the HBLR West Side Avenue station parking lot. As the design is advanced, NJ TRANSIT would identify the need for road closures and develop a Maintenance and Protection of Traffic (MPT) Plan in coordination with the City of Jersey City.

Where the alignment crosses Route 440, there may be temporary lane closures on Route 440 during construction. Given the volumes of traffic along Route 440, NJ TRANSIT would not close the road altogether and would stage activities to minimize the disruption to traffic. In the average weekday peak hour, Route 440 serves approximately 1,600 vehicles in the peak direction. Without additional capacity, a lane closure during peak hours would adversely impact Route 440 traffic operations. Therefore, NJ TRANSIT would maintain two lanes of traffic

flow in each direction during peak hours. However, it may be necessary to implement temporary nighttime lane closures. Overnight volumes are substantially lower, ranging between 200 and 800 vehicles per hour in each direction. Nighttime closures would increase delays for vehicles traveling through the work zone, but one lane in each direction should provide enough capacity to accommodate vehicle volumes. NJ TRANSIT would prepare an MPT Plan that includes safety and operational requirements for nighttime lane closures on Route 440, including coordination with the City of Jersey City and the New Jersey Department of Transportation. If the Route 440 reconstruction project occurs concurrently with the HBLR extension, NJ TRANSIT would coordinate its construction work and requirements with the City of Jersey City and the New Jersey Department of Transportation to minimize disruption to traffic operations to the extent feasible.

Some temporary traffic impacts from construction may be related to the delivery of construction materials to work areas along the Preferred Alternative's alignment. To minimize impacts, flat-bed trucks would be staged within the designated construction staging areas and/or timed to arrive at the site on an as-needed basis. Delivery times would be carefully coordinated with the City of Jersey City, and traffic control measures would be implemented to minimize the impact on peak hour traffic, pedestrians, and residents. Truck movements would typically be spread throughout the day on weekdays. Wherever possible, the scheduling of deliveries and other construction activities would take place during off-peak travel hours to avoid causing congestion and to minimize interruptions to daytime traffic movements.

Overall, with the implementation of traffic control measures and appropriate timing of material delivery, the construction of the Preferred Alternative would not result in adverse impacts on traffic and parking in the study area.

3.9.3 UTILITY RELOCATION

The construction of the Preferred Alternative would require the relocation of utilities. Final design configuration, geotechnical borings, and detailed survey and investigation would be required to determine the exact extent of utility relocation. Extensive coordination with utility companies and service providers would be required. Projected work zones would be established around the utility relocation sites. Short-term interruptions of traffic flow, temporary detours, or vehicles using the roadway shoulders (including Route 440) surrounding the relocation work sites may be required. Safe pedestrian corridors around work areas will also be established.

3.9.4 WATER QUALITY

During construction, NJ TRANSIT would implement appropriate best management practices (BMPs), to control runoff and pollutants entering nearby waterbodies. The BMPs will be selected through an erosion and sediment control plan—required under the NJDEP Construction Activity Stormwater General Permit—which would be filed with the Hudson-Essex and Passaic Soil Conservation District. Chosen BMPs may include vegetated swales and/or structured stormwater treatment devices, designed to filter a percentage of suspended solids from collected stormwater before release into the nearest waterbody. BMPs will be designed to be consistent with NJDEP's *Stormwater Best Management Practices Manual*.

Therefore, the construction of the Preferred Alternative would not result in adverse impacts on water quality near the study area.

3.9.5 AIR QUALITY

The principal air quality impact associated with construction activities is the possible generation of fugitive dust. Fugitive dust is associated with earth moving, such as site grading, filling, and excavation. Erosion and dust control procedures would be followed during the construction of the Preferred Alternative to reduce fugitive dust emissions would include:

- Minimizing the area of disturbed soil by planning grading operations so that only the areas needed for any particular construction are disturbed;
- Minimizing the time span that soil is exposed;
- Spraying water on dusty surfaces; and
- Using drainage dispersion measures to minimize soil erosion.

Mobile source emissions may result from the operation of construction equipment and from trucks delivering materials to and removing debris from the construction site. Localized increases in mobile source emissions would be minimized by using ultra-low-sulfur diesel fuel for all on-site construction equipment. Delivery trucks and other construction equipment engines would not be permitted to remain idling during unloading or at other inactive times.

With these measures, the construction of the Preferred Alternative would not result in any adverse impacts on air quality.

3.9.6 NOISE AND VIBRATION

Like all construction projects, construction of the Preferred Alternative would generate noise and vibration from construction equipment, construction vehicles, and delivery vehicles traveling to and from the project site. Noise levels caused by construction activities would vary widely, depending on the phase of construction—demolition, excavations, foundation, construction of the structures, etc.—and the specific task being undertaken. The following description of construction activities and protocols to monitor construction noise is provided consistent with FTA's Transit Noise and Vibration Assessment Methodology (2006) which specifically addresses noise and vibration during construction.

- Construction activities would last approximately 36 to 42 months.
- Construction activities would generally take place during weekday, daytime hours (i.e., 7AM to 4PM). For the utility relocation work that may be required for the construction of the Preferred Alternative, work may take place over weekends or at night, to minimize service disruptions.
- The geotechnical exploration, demolition, and pier installation phases of construction would use large equipment that can be noisy. These noisy activities would be limited to daytime hours to the extent feasible.
- Construction specifications would require the contractor to adhere to applicable local, state, and federal noise emission standards, and to use only equipment with appropriate noise controls.

- Contractors would be required to demonstrate that equipment complies with applicable local, state, and federal noise emissions standards.
- Coordination with the City of Jersey City will be maintained, and Jersey City will be advised when the greatest noise generating construction activities are scheduled to occur.

While there may still be some temporary noise impacts created by the construction activities, all efforts will be made to reduce the intrusive nature of these temporary activities. Therefore, construction of the Preferred Alternative would not result in adverse impacts.

Construction vibration is typically of concern when historic or fragile buildings are located near construction activities. As described above under “Cultural Resources,” the former Candy Factory, eligible for listing in the National Register of Historic Places, is located adjacent to the existing West Side Avenue Station. To avoid inadvertent damage to this structure during construction, NJ TRANSIT would implement a Construction Protection Plan (CPP) to ensure that excavation and construction activities would not adversely affect the structure. With the implementation of the CPP, the construction of the Preferred Alternative would not result in adverse effects from construction vibration.

3.10 SAFETY AND SECURITY

The construction of the Preferred Alternative would comply with all federal and state safety requirements, including National Fire Protection Standards (NFPS 30 and 30A), National Electrical Code (NFPA 70), and the International Building Code (IBC). Construction activities would follow regulations and codes put forth by the Occupational Safety and Health Administration (OSHA) and NJ TRANSIT for construction worker safety. Access to the construction site(s) will be appropriately restricted.

Once the Preferred Alternative is operational, it would incorporate all existing NJ TRANSIT standards for lighting, signage, and passenger safety, and would be protected by NJ TRANSIT Police

3.11 COMMITMENT OF RESOURCES

In accordance with NEPA, an Environmental Assessment must include an analysis of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, and of any irreversible or irretrievable commitments of resources that would occur from the construction of the Preferred Alternative.

Short-term effects on the environment typically result from construction of the Preferred Alternative. Long-term effects relate to the maintenance and enhancement of long-term productivity in a region or study area, such as consistency of a project with local and regional economic and social objectives. For the Preferred Alternative, any short-term (temporary) construction impacts would not be significant since NJ TRANSIT would aim to reduce any impacts through the implementation of best management practices. In terms of long-term effects, the Preferred Alternative would increase access to public transit in a developing area of Jersey City, enhancing neighborhood livability and supporting the economic growth planned by local redevelopment projects.

3.12 INDIRECT EFFECTS AND CUMULATIVE IMPACTS

Indirect or secondary impacts are those that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable” (40 CFR 1508.8 (b)). Indirect impacts can occur within the full range of analysis areas, such as changes in land use; economic vitality; neighborhood character; or traffic congestion, with its associated impacts on air quality and noise; water resources; and other natural resources. Indirect effects can be adverse or beneficial and in support of the project goals and objectives, or adverse. No indirect effects are expected from the Preferred Alternative.

Cumulative impacts result “from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). The cumulative effects of an action may be undetectable when viewed in the individual context, but when added to other actions can eventually lead to a measurable environmental change. Therefore, cumulative effects can be direct or indirect, beneficial or adverse.

The Preferred Alternative is being planned by NJ TRANSIT in concert with the proposed redevelopment initiatives in Jersey City. Pursuant to the approved master plan for the Bayfront development, greater development density is granted if direct light-rail service is provided. While the Preferred Alternative would allow for this increased development, local planning initiatives have accounted for the potential effects of increased density at the Bayfront site. Overall, the extension of light rail to serve a more robust development at Bayfront is supported by the City of Jersey City for its potential to revitalize the waterfront and its resultant economic benefits to the community at large.

Cumulative impacts resulting from the implementation of the Preferred Alternative would be limited to construction impacts. The construction of the Preferred Alternative may coincide with work on Jersey City’s planned improvements to Route 440 or other redevelopment projects planned for the study area, however periods of high-impact construction for each project may only overlap for a limited time. Continued extensive coordination with Jersey City officials and planning staff would ensure that the Preferred Alternative would minimize cumulative impacts in the study area. While the construction of the Preferred Alternative may take place concurrently with other development initiatives, it would be limited to the proposed alignment and would employ measures to protect the surrounding communities from construction impacts. Therefore, the Preferred Alternative would not create cumulative impacts in the study area. *