5.0 Potential Impacts of CPIP Alternatives

A. 2020 PORT, WAREHOUSING, AND TRAFFIC CONDITIONS

As an indication of potential port, warehousing, and traffic conditions in future interim years, before CPIP-associated improvements become necessary, this section discusses potential conditions in 2020. Future 2020 conditions would be those that would occur without implementation of any port or associated transportation improvement projects that would be developed in later years, consistent with the alternative scenarios described in Chapter 4.0. The 2020 conditions are characterized according to the capacity requirements and constraints that would relate to accommodating growth in demand for the Port's cargo-handling services as a whole; future needs for warehousing of container imports to the 17-county Port region; and potential for shift in cargo transport from truck to rail. Data and information from which this summary was derived are provided in Appendix B. 2020 Conditions. This characterization of 2020 conditions may facilitate analysis of CPIP-associated projects that are proposed in the future in that a possible future baseline is qualitatively described; this information would need to be updated and further detailed for the year that the environmental review is undertaken for a specific proposed project.

1. Port Throughput and Demand Forecasts

In 1999, the base year used for CPIP planning, the Port handled 12.5 percent of the nation's total imports and exports of containers, 15.6 percent of liquid bulk (other than crude oil), and 16.5 percent of vehicles. The proportion of the Port's tonnage, compared to total U.S. imports/exports, for dry bulk, semi-bulk, and general cargo were relatively modest, with none representing more than 3.4 percent of the U.S. market totals.

The CPIP has forecast that in the year 2020:

- The Port will retain its relative shares of the U.S. market totals for liquid bulk and containers, but its share of the vehicle market will decline slightly, to 13.7 percent. Vehicle demand is forecast to increase from 517,000 units in 1999 to 674,000 by 2020.
- Containers will constitute a significant and rising share of the Port's trade, with volume of total containers nearly doubling, from approximately 3 million TEUs in 1999 to 5.9 million by 2020.
- It is likely that the Port channels will need to be dredged to 50 feet to compete with other ports for deep-draft ships in the container trade[1].
- Liquid bulk demand at the Port will increase from 24 million tons in 1999 to nearly 43 million by 2020.
- Dry bulk demand at the Port will increase from 5 million tons in 1999 to nearly 11 million by 2020.
- General cargo demand at the Port will increase from over 2 million tons in 1999 to over 4 million by 2020.
- Demand can be accommodated at the Port without significant improvements over the next 20 years.

[1] On April 28, 2005, the U.S. Army Corps of Engineers announced that dredging of the Kill Van Kull to 50 feet has begun, and is part of a $1.6 billion effort over the next decade to deepen other key portions of the Harbor, including Newark Bay and Bay Ridge, to that depth.

As noted in Chapter 2.0, Purpose and Need for the Project, the Port of New York and New Jersey serves one of the largest markets in the country, with a primary market area including more than 70 million people. A growing amount of the goods needed in this region arrives from overseas locations, and the volume of maritime trade is forecast to grow. However, the Port of New York and New Jersey is not the sole entry point for maritime-transported goods that come into this region, but competes with other North American ports. If the Port's capacity is insufficient in future decades to accommodate future cargo volumes to meet the region's demand, an increasing portion of the goods will enter the region overland from other ports, via truck and rail. This would exacerbate highway and rail congestion in the region beyond current forecasts of future transportation network conditions, with commensurate impacts to the region's environmental quality. Thus, the CPIP proposes port improvement scenarios to guide port development apace with forecast demand and cargo growth.

2. Cargo Terminal Improvements

CPIP assumes the following improvements, which have been completed:

- Berth deepening, additional cranes, pavement reconstruction, and yard reconfiguration at Port Newark (PNCT-P&O) and Port Elizabeth (Maher and Maersk);
- Full conversion to straddle-carrier operation at Port Elizabeth (Maher);
- Wharf extension and additional cranes at Port Ivory (Howland Hook); and
- General refurbishment at South Brooklyn Marine Terminal.

The Plan assumes that the following types of improvements at the terminals will have been progressively implemented by 2020:

- Phasing in of the use of either rubber-tired or rail-mounted gantries or straddle carriers;
- Introduction of automated container handling equipment;
- Increased working hours of terminal gates and phasing in of electronic check-in systems;
- Consolidation of fragmented automobile storage areas; and
- Introduction of modern mobile off-loading cranes and cargo transfer equipment.

Table 5-1 lists the improvement projects adopted for the CPIP planning effort as the baseline for purposes of assessing the Port's existing capacity and for identifying options for future improvements.

TABLE 5-1: SUMMARY OF BASELINE CARGO TERMINALS AND IMPROVEMENTS

Terminal	Baseline Marine Terminals	Baseline Improvements	Planned Completion
Container Terminals	Port Newark (PNCT)	Berth deepening	2004
		Additional cranes	2004
		Pavement reconstruction	2004
		Yard reconfiguration	2004
	Port Newark (ASI)	None known	
	Port Elizabeth (Maher)	Berth deepening	2004
		Additional cranes	2004
		Pavement reconstruction	2004
		Yard reconfiguration	2004
		Conversion to fully straddle carrier operation	
	Port Elizabeth (APMT)	Berth deepening	2004
		Additional cranes	2004
		Pavement reconstruction	2004
		Yard reconfiguration	2004
	Port Jersey (Global)	None known	

TABLE 5-1: SUMMARY OF BASELINE CARGO TERMINALS AND IMPROVEMENTS (CONTINUED)

Terminal	Baseline Marine Terminals	Baseline Improvements	Planned Completion
Container Terminals (continued)	Port Ivory (Howland Hook)	Wharf extension	2004
		Additional cranes	2004
	North Brooklyn (Red Hook)	None known	
Automobile Terminals	Port Newark (FAPS)	None known	
	Port Newark (Toyota)	None known	
	Port Elizabeth (DAS)	None known	
	Port Jersey (NEAT/BMW)	None known	
General Cargo Terminals	Port Newark Public Berths	None known	
	North Brooklyn Marine Terminals	None known	
	South Brooklyn Marine Terminal	General refurbishment	2004
	Port Ivory Howland Hook	None known	
Bulk Terminals	Port Newark Dry Bulk Berths	None known	
	Port Newark Liquid Bulk Berths	None known	

3. Port Accessibility

In addition to dredging to accommodate a required water depth of 50 feet for container ships, CPIP anticipates that the insufficient height of the Bayonne Bridge will become an increasing concern for container-ship access along the Kill van Kull channel to Port Newark North, Port Newark South, Port Elizabeth, and Howland Hook.

4. Distribution of Cargo by Terminal

The CPIP uses a baseline assumption that the distribution of future cargo will be proportional to existing terminal area. According to CPIP forecasts, commodity types in 2020 would be distributed across terminals as presented in Table 5-2. (South Brooklyn Terminal, not currently operating, is included in future development plans.)

TABLE 5-2: BASELINE DISTRIBUTION OF GOODS BY COMMODITY TYPE TO 2020

Terminal	Commodity[1]	Percent of Port Total	
		2000	2020
Newark	Containers	12.3%	14.4%
	Autos	62.3%	54.2%
	General	5.0%	58.1%
	Dry Bulk	100.0%	100.0%
	Liquid Bulk	100.0%	100.0%
Elizabeth	Containers	61.5%	63.4%
	Autos	11.3%	18.2%
Howland Hook	Containers	15.1%	11.3%
	General	7.8%	0.8%
Global/NEAT/BMW	Containers	9.0%	7.7%
	Autos	26.5%	27.6%
Red Hook	Containers	2.1%	3.2%
	General	87.2%	10.5%
South Brooklyn	General	0.0%	30.5%[2]

Source: Draft CPIP, Volume 1, March 2005

1 Commodity percentages sum to 100% across terminals.

2 If the Brooklyn Waterfront Projects proposed by NYCEDC for Red Hook and South Brooklyn are implemented, distribution of goods would need to be modified to accommodate the reduction in acreage available for port-related uses.

The Plan forecasts that:

- The share of the Port's container market would increase at Port Newark, Port Elizabeth, and at Red Hook, and decrease at Howland Hook and Global (Bayonne);
- The auto market share would increase at Port Elizabeth and NEAT/BMW (Bayonne), and decrease at Port Newark; and
- The market share for general goods would have the most pronounced changes, with increases at Port Newark and South Brooklyn, and decreases at Howland Hook and Red Hook.

Table 5-3 presents the anticipated 2020 distribution of goods, in respective units based on the 2020 percentages in Table 5-2, compared to the existing assessed terminal capacities. The statistics demonstrate that with the 2020 Portwide distribution of commodity types, existing assessed capacity would exceed demand in 2020 for most commodity types at the existing facilities. However, improvements would be required to accommodate demand where there are no existing facilities (South Brooklyn), as well as for general, bulk and liquid cargos at Port Newark and auto cargo at Port Elizabeth, as the existing assessed capacities for these cargo types would be insufficient at these port facilities.

TABLE 5-3: 2020 BASELINE DISTRIBUTION OF GOODS COMPARED TO EXISTING ASSESSED CAPACITY

Terminal	Existing Assessed Capacity	2020 Share of Portwide Demand				
		Containers (TEUs)	Autos (units)	General (tons)	Dry Bulk (tons)	Liquid Bulk (tons)
Newark	901,000 TEUs (PNCT yard) + 171,700 ASI (Marsh St. yard) 1,072,700	784,000				
	208,982 units, autos (FAPS yard) +359,082 (Toyota yard) 568,064		363,960			
	310,000 tons, general (public berths)			2.3 million		
	4.9 million tons, dry bulk				11 million	
	5.7 million tons, liquid bulk					43 million
Elizabeth	3.8 million TEUs (Maher gates) +2.0 million (Maersk yard) 5.8 million	3.5 million				
	108,202 units, autos (DAS berth)		122,668			
Howland Hook	846,600 TEUs	633,000				
	130,000 tons general			32,000		
Global/ NEAT/ BMW	651,000 TEUs (Global berth)	431,000				
	94,403 units, auto (NEAT yard) +162,621 (BMW yard) 257,024		186,024			
Red Hook	217,600 TEUs	179,000				
	1,185,000 tons general (berth)			420,000		
South Brooklyn	not used			1,220,000		
Forecast 2020 Demand, Port of New York and New Jersey		**5.6 million**	**674,000**	**4 million**	**11 million**	**43 million**

Source: Draft CPIP, Volume 1, March 2005

Note: Existing Assessed Capacity figures shown in bold indicate specific cargo capacities at specific port sites that are forecast to be insufficient by 2020. However, Portwide assessed capacities would be sufficient for all cargo types beyond 2020.

Table 5-3 demonstrates that with the 2020 Portwide distribution of commodity types, assessed capacity would exceed demand for most commodity types at the existing facilities. However, improvements would be required to accommodate demand where there are not existing facilities (South Brooklyn), as well as for general, bulk and liquid cargos at Port Newark and auto cargo at Port Elizabeth.

While the shares of Portwide demand in 2020, shown above, indicate the locations where individual improvement options are likely to be implemented, it is assumed for purposes of this Environmental Assessment that, in the year 2020, none of the alternative scenarios described in Chapter 4.0 would be in place. However, the following projects have been identified as improvements that will likely be implemented by 2020.[2]

Portwide channel dredging projects:

- On May 28, 2004, the Port Authority and the USACE signed an agreement that outlined funding commitments and a timeline for a $1.6 billion project to deepen channels in the Port to 50 feet, to improve navigational safety and allow the Port to accommodate the next generation of cargo vessels that require deep water to operate. On April 28, 2005, the USACE announced that dredging of the Kill Van Kull to 52 feet mean low water (52 feet in rock or otherwise hard material) had begun.[3]

New Jersey projects:

- On March 16, 2005, New Jersey Governor Richard J. Codey outlined plans by a major industrial developer to build a distribution facility in Elizabeth near New Jersey Turnpike Interchange 13A, with groundbreaking for the project to be held in spring 2005. Governor Codey also outlined plans to promote the development of additional distribution and logistics facilities around the Port, for which the Port Authority and the New Jersey Economic Development Authority have identified more than 20 Portfields candidate sites in Union, Middlesex, Essex, Bergen, and Hudson counties that would be possible locations for warehouse/distribution centers. These sites, which would have to comply with the appropriate environmental regulations, include:
  - Barszcewski Street property, Kearny (36 acres)
  - BASF property, Kearny (27+ acres)
  - Bendix property, Teterboro (40+ acres)
  - Chevron property, Perth Amboy (70 acres)
  - Catellus property, Elizabeth (75 acres)
  - DuPont property, Newark (45 acres)
  - Elizabeth Bayway property, Elizabeth (70+ acres)
  - Englehard property, Newark (45 acres)
  - I-Port 12 property, Carteret (50+ acres)
  - I-Port 440 property, Perth Amboy (176+ acres)
  - MOTBY property, Bayonne (130+ acres)
  - MOTIVA property, Newark (52+ acres)
  - Newark Industrial Group property, Newark (60+ acres)
  - PJP Landfill property, Jersey City (63+ acres)
  - Port Reading property, Carteret/Woodbridge (300+ acres)
  - PSE&G property, Jersey City (32 acres)
  - South Kearny/River Terminal Group property, Kearny (80+ acres)
  - Tremley Point property, Linden (200+ acres)

[2] As these projects were made public in 2004 and 2005, and identified during preparation of this EA in 2005 and 2006, they were not considered during the earlier CPIP planning process nor factored into the assessment of the port sites' existing capacities.

[3] The environmental effects of the dredging project were evaluated in *Feasibility Report for New York and New Jersey Harbor Navigation Study Final Environmental Impact Statement*, U.S. Army Corps of Engineers, December 1999.

- On August 4, 2004, the Port Authority Board of Commissioners authorized $5 million in planning and design funds for a project to expand the new ExpressRail Elizabeth Intermodal Facility at the Elizabeth—Port Authority Marine Terminal from 10 to 18 tracks. The Board also authorized a 10-year agreement with Millennium Rail to operate and maintain the Intermodal Facility. Created especially to operate the new facility, Millennium Rail is a joint venture of APM Terminals North America, Inc. and Maher Terminals, Inc., the Port's two largest tenants. ExpressRail Elizabeth is part of a comprehensive $600 million rail program to develop the ExpressRail System, which will create dedicated rail facilities for the Port's major container terminals and additional rail support track. These facilities include ExpressRail Elizabeth, ExpressRail Port Newark, ExpressRail Staten Island at Howland Hook Marine Terminal, as well as the ExpressRail Corbin Street Intermodal Support Facility and expanded rail infrastructure on Staten Island.
- On April 27, 2005, Port Authority Chairman Anthony R. Coscia announced authorization of an additional $141 million for the ExpressRail Elizabeth project, which will allow for completion of final design and construction of a second lead track; completion of the on-dock rail terminal, which will ultimately have 18 tracks; and construction of the Corbin Street rail support facility to provide capacity to stage, arrive, and depart two-mile-long trains, and integrate rail traffic from the three on-dock facilities. The work will be completed between 2007 and 2009.

Howland Hook projects:

- On August 10, 2004, New York City Industrial Development Agency (IDA) approved financing assistance for New York Container Terminal at Howland Hook as part of the overall modernization program for the terminal. The IDA Board approved sales tax benefits of $3.5 million for the purchase of additional cargo handling equipment.
- On December 15, 2004, Mayor Michael R. Bloomberg and Governor George E. Pataki announced that construction had begun on the reactivation of the eight-mile Staten Island Railroad, providing direct rail service to the New York Container Terminal, with construction expected to be completed in early 2006.

North Brooklyn projects:

- In April 2004, Mayor Michael R. Bloomberg announced the City of New York's $200 million Master Plan to create three modern cruise ship berths at the New York Cruise Terminal on the west side of Manhattan and one berth in Brooklyn in the next four years. On April 14, 2005, the New York City Economic Development Corporation (NYCEDC) announced an agreement with P&O Princess Cruises International (Carnival Corporation) to relocate Princess and Cunard ship calls from the New York Cruise Terminal to Pier 12 in Red Hook, beginning in April 2006.

South Brooklyn projects:

- On June 9, 2004, NYCEDC issued a Request for Expressions of Interest (RFEI) in leasing Pier 6 in the Sunset Park section of Brooklyn.
- In September 2004, the City of New York announced that Hugo Neu Schnitzer East plans to build a $25 million modern recycling facility at the South Brooklyn Marine Terminal. This proposal is currently undergoing environmental review and other project development activities.
- On November 8, 2004, NYCEDC announced that it had reached an agreement with Axis Group Inc. to lease and develop a modern, 74-acre facility at South Brooklyn Marine Terminal in Sunset Park for automobile-processing and other types of maritime cargo. The proposal is currently undergoing environmental review and other project development activities.

5. 2020 Warehousing Conditions

Of the containers shipped via the Port and destined for some form of warehouse, a majority are handled through facilities outside the Port. There is also a sizable market for shared-user warehousing within the Port; most of this activity is focused on the Port Newark/Port Elizabeth terminal area and, to a lesser extent, around the Global Marine terminal. For warehouses dedicated to single organizations and their supply chains, which serve as regional distribution centers for the northeast U.S., the CPIP indicates that the preferred warehousing locations are south of the Port, close to exits on I-95/New Jersey Turnpike and in Pennsylvania (Harrisburg, York). For warehouses that serve as national distribution centers, the CPIP Warehousing Study (Halcrow, 2004) indicates that the Port area is not the preferred location, as the major source of imported goods is Asia, and the west coast has logically dominated this market.

Standard height warehouses, similar to those in and around the Port area, have an average storage capacity of around 0.05 to 0.10 pallets per square foot (SF). The CPIP Warehousing Study used averages of 0.07 pallets per SF and 12 pallets per container to convert forecasted numbers of imported containers to demand for warehouse floor space. Total container imports were further disaggregated to show imports destined for the 17-county Port area. As shown in Table 5-4, container volumes imported to the 17-county Port area were forecast to be around 570,000 TEUs in 2020, of which around 294,000 TEUs would be destined for warehouses.

TABLE 5-4: CONTAINER IMPORTS IN 1999 AND 2020 FORECAST (TEUS)

	1999 all TEUs	1999 TEUs requiring warehousing	2020 all TEUs	2020 TEUs requiring warehousing
Total Imports to Port	1,646,875	862,637	2,567,185	1,326,136
Total Imports Destined for Port Area	354,892	185,893	569,765	294,324

For imports requiring warehousing, a factor of 12 "stock turns per annum" (derived from Dun and Bradstreet's *Key Business Ratios*) was applied to generate requirements of 12.4 million SF of warehousing in 1999, with 2.7 million SF needed in the Port area, and 18.9 million SF of warehousing space by 2020, with 4.2 million SF needed in the Port area.

As the covered floor space of a warehouse accounts for around 40 percent of the total area of a warehouse facility, a multiplier of 2.5 was used to convert warehouse area to total site area. In 1999, 152 acres of land area was occupied by warehouses related to ocean-borne cargo; in 2020, 241 acres would be required to meet the forecasted demand, an increase of 89 acres over the land area used for this purpose in 1999.

The NJDOT database of Freight Opportunity Sites[4] lists 85 sites for New Jersey towns near the Port, amounting to 4,842 acres. The additional warehouse land requirement of 89 acres in 2020 would represent only 2 percent of the total acreage of available sites in the NJDOT database. The CPIP Warehousing Study also notes that there are existing pier sheds on piers 7, 8, 9b and 11, the 39th Street shed, and the N shed at the South Brooklyn Marine Terminal. Provided that the sites' conditions and access are appropriate, there would be sufficient sites available to serve the likely warehouse development forecasted for 2020. Even if the auto and breakbulk terminal proposed by

[4] New Jersey Department of Transportation, Bureau of Freight Management and Intermodal Coordination, preliminary draft list of underutilized freight opportunity sites of 38 or more acres (individual lots or groupings of adjacent lots) that are less than 30 minutes of travel time to the Port Newark and Elizabeth Industrial Zone.

NYCEDC for the South Brooklyn terminal independently of CPIP (see Chapter 4.0, Section C) were implemented, sufficient suitable acreage would be available in the Port vicinity to accommodate future warehousing demand. However, given ongoing planning and development for multiple purposes and projects in the New York/New Jersey region, consideration of preserving sufficient acreage for future warehouse development may be warranted by elected officials and pertinent state and local agencies.

6. 2020 Traffic Conditions

CPIP estimates indicate that between 85 and 95 percent of all commodities leaving Port terminals are currently transported by truck, rather than by rail or barge services. Fourteen percent of containers are now moved via rail and one percent by barge. The Port Inland Distribution Network (PIDN), a newly emerging system for distributing containers moving through the Port, envisions a mode share under which 23 percent of containers would leave the Port via these non-highway modes in 2010 and 33 percent by 2020. The CPIP further envisions a 35 percent "potential enhanced" mode share for containers by rail, as well as greater rail share for automobiles, general cargo, dry bulk, and liquid bulk, increased in the same proportion as that for containers.

The following Port terminal connector roads, which provide access between the terminals and the major highway corridors, currently carry and would continue in 2020 to carry the majority of Port-related truck movements:

- *Port Newark/Port Elizabeth* – Doremus Avenue, Port Street, Corbin Street, McLester Street, and North Avenue;
- *Port Jersey* – Port Jersey Boulevard, NJ 440 at Pulaski Street;
- *Bayonne* – NJ 440 and Port Terminal Road;
- *Howland Hook* – Gulf Avenue and Goethals Road;
- *Red Hook* – Columbia Street and Hamilton Avenue; and
- *South Brooklyn Marine Terminal* – 39th Street and 2nd Avenue.

The CPIP inventoried planned improvements to the highway system included in the 2002-2005 Transportation Improvement Programs (TIPs) of the North Jersey Transportation Planning Authority (NJTPA) and the New York Metropolitan Transportation Council (NYMTC). Improvements planned by the Port Authority were also inventoried. While noting that the TIPs focused more on maintenance and safety than on addition of significant capacity, the CPIP takes into account the proposed improvements of the "Portway – Connection to New Jersey Terminal" project, which will create a new intermodal corridor for international goods movement and provide a truck route to relieve congestion on area roadways. The improvements that would occur in municipalities including Newark, Elizabeth and Jersey City, include the following:

- *Port Newark/Port Elizabeth* – Doremus Avenue Roadway; Doremus Avenue Bridge;
- *Port Jersey* – Route 1&9 St. Paul's Avenue Bridge Replacement

Concurrent with Portway, specific TIP projects directly relevant to the characterization of 2020 traffic conditions in the Port also include the following:

- *Port Newark/Port Elizabeth* – Port Newark Container Terminal Intermodal Terminal Storage Facility; New Jersey Turnpike Exit 14 and Port Street; New Jersey Turnpike Exit 14 Ingress and Egress to New Jersey Marine Terminals; Crossover North of I-78 Connection (Port Street Bypass); Corbin Street Roadway Realignment; McLester Street Grade Separation and Second Lead Track; McLester Street Curve Realignment; and North Avenue Eastbound Bridge Widening;
- *Port Jersey* – Route 440 Connector;

- *Bayonne* – Route 440 Connector;
- *Howland Hook* – Howland Hook Development of Port Ivory;
- *Red Hook* – Brooklyn Waterfront Rail Improvements; and
- *South Brooklyn* – Brooklyn Waterfront Rail Improvements.

As documented in the CPIP, the 2000 regional highway baseline assumes 320 million daily vehicle miles traveled (VMT), 14 million daily vehicle hours traveled (VHT), 22 mph average speed, and 32 million daily total trips, with Port-related truck trips comprising 0.05 percent of the total. The 2020 regional highway baseline forecast assumes 410 million daily VMT, 22 million daily VHT, 18 mph average speed, and 41 million total daily trips, with Port-related truck trips comprising 0.06 percent of the total. However, as future vehicle emissions are estimated to decrease by more than 60 percent by 2020[5], this would more than offset any potential air quality effects of the increased proportion of Port-related trucks to total traffic (i.e., 0.01 percent increase between 2000 and 2020). The CPIP concludes that although the volume of daily traffic would increase and the average speed would drop by 2020, this should not be attributed to Port-related truck trips but to background traffic growth, as Port-related truck trips will remain at less than 0.1 percent of all traffic. Consequently, Port-related trucks would not have direct significant impact on the regional highway network.

In addition, air quality analyses that will be conducted of CPIP-associated projects proposed in the future will need to address potential toxic air pollution impacts of heavy-duty, diesel-engine trucks and buses, per USEPA's recently established comprehensive national control program to regulate the heavy-duty vehicle and its fuel as a single system. USEPA's new emission standards for heavy-duty highway engines and vehicles will take effect in model year 2007, with the goals of reducing emissions of nitrogen oxides and particulate matter, both of which contribute to public health problems, particularly in urban areas.

Table B.1-20 in Appendix B presents the CPIP's traffic forecast for local Port roadways, which anticipates the following conditions near the Port sites by 2020:

- *Port Newark/Port Elizabeth* – increase in daily traffic volumes; growth in rail mode split.
- *Port Jersey* – large percent increase in daily volume, particularly on NJ Route 440. The majority of this growth would result from the proposed non-Port-related development of The Peninsula at Bayonne Harbor, which is forecast to produce up to 80,000 daily vehicle trips on area roadways at full build-out, when considered without proposed infrastructure improvements.[6]
- *Bayonne* – large percent increase in daily volumes, particularly on Port Terminal Road (due to the proposed non-Port-related development of The Peninsula at Bayonne Harbor).
- *Howland Hook* – likelihood that roads will continue to operate below capacity; growth in rail mode split.
- *Red Hook* – slight increase in daily volumes; no growth in rail mode split, due to limited rail access; congestion on Hamilton Avenue connectors below capacity; Columbia Street south of the BQE ramp at capacity.
- *South Brooklyn* – increased daily volumes would be attributed to new non-Port-related development; 39th Street and 2nd Avenue would operate below capacity.

[5] As predicted by MOBILE 6.2 modeling, carbon monoxide (CO) will decrease by approximately 63 percent between 2000 and 2020; volatile organic compounds(VOC) by 81 percent; nitrogen oxides (NO_X) by 87 percent; particulate matter less than 10 microns in size (PM_{10}) and 2.5 microns in size ($PM_{2.5}$) by 62 and 74 percent, respectively.

[6] *The Peninsula at Bayonne Harbor: Local Roadway Connector Study* (June 2003, City of Bayonne).

Changes to rail infrastructure by 2020, as inventoried in the CPIP, relate to on-dock rail terminals, rail yards, rail terminals, the Conrail Shared Assets system (shared CSX and Norfolk Southern access to terminals and yards), and the wider rail system (mid-Atlantic and New England). The sources and projects included in the CPIP forecast of 2020 rail capacity are as follows:

- *NYMTC* – Odell Avenue Bridge; Croton RR Crossing Elimination; Arlington Intermodal Yard; Brooklyn Waterfront Rail Improvements; and Brooklyn Waterfront Track Rehabilitation.
- *Port Authority* – Port Newark Intermodal Terminal; Port Newark Container Terminal Intermodal Terminal Storage Facility; Maher Container Terminal Redevelopment; McLester Street Grade Separation & Second Lead Track; New Express Rail Facility; Express Rail Track Facility; Cross-Harbor Improvements; Howland Hook Development of Port Ivory; Staten Island Railway Chemical Coast North; Port Ivory Intermodal Terminal; and Staten Island Railway Chemical Coast South.
- *Strategic Plan for the Redevelopment of the Port, NYCEDC* – Elizabeth Connecting Track; Second Elizabeth Connecting Track; Railcar Float Enhancements; Bay Ridge Bushwick Line and Fremont Secondary Upgrades; Oak Point and Hunt's Point Upgrades; Trailer on Flat Car (TOFC) Clearances on Hudson Line; and Tappan Zee Bridge.
- *Private Sector* – signaling upgrade on Passaic & Harsimus; additional track on Passaic & Harsimus; new second main track on the Marion Running Track; County Line Road grade crossing; tunnel clearance improvement; additional trackage on River Line; additional trackage on the Chemical Coast; Port Reading Secondary upgrade; Port Reading Secondary extension; second main track on Trenton Line; Oak Island expansion; and Waverly Loop.

The CPIP forecasts that congestion would occur by or before 2020 at the following rail connections, even if planned and proposed infrastructure enhancements become implemented:

- *Port Newark, Port Elizabeth and Howland Hook* – Chemical Coast connection
- *Port Jersey and Bayonne* – National Docks Secondary connection
- *South Brooklyn Marine Terminal* – New York & Atlantic Bay Ridge Line connection

B. POTENTIAL IMPACTS OF CPIP SCENARIOS

The alternative port improvement scenarios (Orange, Red, Yellow, and Blue), described in Chapter 4.0, have been developed by the CPIP Consortium as alternative strategies for enhancing and expanding port capacity to accommodate projected future demand for goods entering and leaving the Port by the year 2060. The alternative scenarios consider changes in use at port sites, port-site expansions by acquisition or by offshore filling/reclamation, and port improvements through rearrangement of on-site infrastructure and activities. The alternative scenarios do not define specific actions or projects; they represent combinations of port-site-specific uses and Portwide arrangements of uses, for which specific actions or projects could be defined and implemented over time, by 2060, the forecast horizon year. The CPIP forecasts of cargo demand indicate that Port capacity will be adequate for the next three decades, and that additional capacity will not be required until the 2030s and 2040s, depending on cargo type.

Therefore, a qualitative assessment was undertaken to identify the types of potential impacts that may be anticipated to the natural and manmade environments in the vicinities of the seven port sites included in the CPIP. Potential environmental concerns that may be pertinent to implementation of the alternative scenarios are described below, by port site.

For each port site, an introductory overview is provided of the principal differences among the alternative scenarios, as they relate to that specific port site. The predominant differences among

alternative scenarios for a given port site are typically variations in the proposed types of uses or the port site configurations of uses. In a few cases, alternative scenarios differ more significantly, due to proposed land acquisition or site closure.

For each port site discussed below, only those environmental categories for which potential impacts may be anticipated are described. Potential types of impacts that may be anticipated with future projects are also summarized in Tables 5-5 to 5-9 (at the end of this chapter) organized by alternative scenario and port site.

At such time in the future as CPIP-associated improvements are proposed and the requisite environmental reviews are undertaken, future No-Action alternatives – i.e., depiction of conditions in a given proposed project's build year but absent consideration of the proposed project itself – will also need to be defined. The future No-Action alternative will serve as the point of comparison against which the proposed project will be evaluated to identify the project's potential social, economic, and environmental impacts. Absent port and associated transportation improvements, the No-Action alternative will describe conditions that would result as future cargo demand in the region served by the Port is met by means other than CPIP-associated improvements. Without such improvements to enhance the Port's and associated transportation network's capacity, future demand would likely be met via overland transport of cargo to the region from other U.S. ports, i.e., cargo would be shipped to other ports for subsequent transport to this region via truck and rail. This would increase truck volumes, as well as overall vehicle miles traveled, to, from, and within the region, and may consequently affect regional air quality.

Appendix C of this EA includes methodology reports for select environmental impact categories as guidance for future environmental impact analyses that will need to be undertaken when specific port and associated transportation improvement projects are proposed (also see Chapter 6.0 for discussion of future environmental reviews). As noted above, the CPIP scenarios do not define specific actions or projects; therefore, the methodologies described in Appendix C were not applied for these qualitative assessments.

1. Red Hook/North Brooklyn Marine Terminal

a) Overview of Alternative Scenarios

Under alternative scenarios Orange and Red, the existing container operation at Red Hook / North Brooklyn Marine Terminal (RH/NBMT) would be converted to general cargo handling operations. Piers 9 to 12 would be progressively refurbished/rebuilt and redeveloped. Berth space would be provided only at Pier 8. Piers 6 and 7 would not be utilized. These alternative scenarios would require the acquisition of 20 acres. Alternative scenario Yellow is similar to alternative scenarios Orange and Red, except the developed area would be extended to include Piers 6 and 8 for general cargo and requires the acquisition of 50 acres. Alternative scenario Blue is significantly different from the other scenarios in that the site is closed and available for non port-related usage.

b) Environmental Concerns/Issues

i. Traffic

The CPIP estimates indicate that port-related vehicular and truck traffic account for a small percentage of the overall traffic on area roads. Improvements that would generate trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along Hamilton Avenue and other area roadways. The potential for significant traffic impacts would also need to be considered within a larger traffic study area, including the

Brooklyn Battery Tunnel and the Brooklyn Queens Expressway/Gowanus Expressway/I-278 (BQE), as well as in the vicinity of port-related warehouses situated outside the port boundary.

ii. Air Quality

Alternative scenarios may affect local and regional air quality as a result of increased traffic volumes, changes in travel patterns on the roadway networks providing access to and egress from RH/NBMT and on adjoining roadways. Local and regional air quality would need to be examined to determine whether significant impacts would result from modifications to on-site parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operations of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). Short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Many sources of noise originate from within or proximate to the port such as commercial and private vehicles, railroad traffic, industrial machinery, steamship tug/barge operations. Typically, the noise levels from these sources vary with time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related vehicular traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptors to RH/NBMT are residences located along Columbia Street from roughly Congress Street to Degraw Street, and along Degraw Street between Columbia Street and Van Brunt Street.

iv. Cultural Resources

Alternative scenarios Orange, Red and Yellow include site expansion; potential impacts to historic architectural resources located within ½ mile of RH/NBMT (Fire Brick and Clay Retort Building, Cobble Hill Historic District, Boerum Hill Historic District, Carroll Gardens Historic District and Brooklyn Height Historic District) may be possible. Potential effects of other environmental impacts (i.e., traffic, noise, and vibration) that may result from the implementation of the alternative scenarios would need to be examined in relation to these resources.

While the potential for archeological sensitive resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impact to any identified resources. Potential impacts may result from construction activities, particularly including any below-ground disturbances.

v. Hazardous and Regulated Materials

Spills of hazardous materials to the soil and groundwater have been documented on and near the RH/NBMT. The documented history of the site strongly suggests significant use of hazardous materials by prior tenants and owners. As a consequence, there is likely to be subsurface contamination from historic activities, though such impacts have not yet been documented. Future development should be conducted with the recognition that such contamination may, in fact, exist. Therefore, any work must be preceded by appropriate environmental studies to determine what safety and remediation measures should be implemented.

Scenarios Orange, Red, and Yellow include activities that will result in below-ground disturbance and dewatering, such as construction of foundations and infrastructure, grading, and installation of underground utilities. The soil and groundwater encountered may require special handling and disposal, depending upon the chemical constituents at a particular area.

vi. Open Space Resources

Open space resources including Coffey Park, Dimattina Playground, Louis J. Valentino, Jr. Park and Pier and Brooklyn Bridge Park would not be physically encroached upon as a result of any of the alternative scenarios' uses proposed for RH/NBMT. However, future port-related improvement projects resulting in potential changes in traffic volumes and travel patterns, increased pollutant emissions, or increased noise levels would need to be evaluated to determine whether significant impacts to these resources would occur.

vii. Protected Species and Special Habitats

Little natural habitat remains at the RH/NBMT site. Few wildlife species were observed or would be expected to use the area. Neither the state nor federal agencies identified protected species or important habitat on or in the facility's vicinity. NMFS (2005) indicates that federally protected marine species may be found in the vicinity of the RH/NBMT. The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed. Alternative scenario Blue considers the placement of roughly 130 acres of fill in the interpier and waterward areas along the South Brooklyn waterfront. This development will reduce the available tidal, subtidal and open water habitat, including EFH, and may impact directly or indirectly federally protected marine turtles and shortnose sturgeon if they are shown to be using the area.

viii. Aquatic Habitats

No freshwater wetlands are located on or immediately adjacent to the RH/NBMT. Littoral zone and subtidal habitats are present in the interpier areas of the port. Since the expansion of the existing port facility is not called for in any of the alternative scenarios presented in the CPIP, impacts to these resources are not expected.

Water Quality at RH/NBMT must conform to NYDEC Class I standards. The site must employ best management practices for stormwater control, and any point source discharge must be authorized by permit.

ix. Cumulative Impacts

The potential impacts related to implementation of any of the alternative scenarios at RH/NBMT must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. It is likely that future cumulative impact evaluations should focus on the environmental categories identified above, notably for traffic, air quality, noise, hazardous and regulated materials, and open space resources.

2. South Brooklyn Marine Terminal

a) Overview of Alternative Scenarios

Alternative scenario Orange would include the reconfiguration of the berth arrangement along with the refurbishment and reconstruction of piers. Approximately 30 of the 80 acres within the site would be developed for general cargo handling and an auto terminal. The site arrangement is identical in alternative scenario Red, except the auto terminal area would be developed as a dry bulk terminal with an additional two berths. Alternative scenario Yellow would develop the entire site into an auto terminal. Alternative scenario Blue would require the acquisition of 112 acres for the development of two container terminals, a rail terminal, and a waterfront park.

b) Environmental Concerns/Issues

i. Traffic

According to CPIP estimates, truck traffic is a large component of overall vehicular volume within the port area, of which the majority is non-port related. Improvements that would generate future trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along 39th Street and Second Avenue. The potential for significant traffic impacts would also need to be considered for a larger traffic study area, including the Brooklyn-Queens-Expressway (BQE), and in the vicinity of port-related warehouses situated outside the port boundary.

ii. Air Quality

Alternative scenarios may affect local and regional air quality as a result of increased traffic volumes, changes in travel patterns on the roadway networks providing access to and egress from SBMT and on adjoining roadways. Local and regional air quality levels would need to be examined to determine whether significant impacts would result from modifications to on-site parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operations of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). Short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Many sources of noise originate from within or proximate to the port such as commercial and private vehicles, railroad traffic, industrial machinery, steamship tug/barge operations. Typically, the noise levels from these sources vary with time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related vehicular traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptors to SBMT are residences located along 43rd Street, between 2nd and 3rd Avenues and I-278.

iv. Cultural Resources

Since alternative scenario Blue includes site expansion, potential impacts to historic architectural resources located within one mile of SBMT (Bush Terminal Buildings, Sunset Park Historic District) may be possible. Effects of other environmental impacts (i.e., traffic, noise, and vibration) that may result from the alternative scenarios would also need to be examined in relation to these nearby identified resources.

While the potential for archeological sensitive resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impacts to any identified resources. Potential impacts may result from construction activities, particularly including any below-ground disturbances.

v. Hazardous and Regulated Materials

Spills of hazardous materials to the soil and groundwater have been documented on and near SBMT. The documented history of the site strongly suggests significant prior use of hazardous materials by prior tenants and owners. A limited subsurface soil investigation found ash and slag in the subsurface and measurable gasoline, oil, metals, and PCB contamination to the site soils; the gasoline and oil contamination appears high enough to warrant remediation. Therefore, any work must be preceded by the appropriate environmental studies to determine the safety and remediation measures needed to implement the proposed work.

All the alternative scenarios include activities that will result in below-ground disturbance and dewatering, such as construction of foundations and infrastructure, grading, and installation of underground utilities. The soil and groundwater encountered may require special handling and disposal, depending upon the chemical constituents at a particular area.

vi. Open Space Resources

Open space resources, including Sunset Park and PS 1 Playground, would not be physically encroached upon as a result of any of the alternative scenarios' uses proposed for SBMT. However, future port-related improvement projects resulting in potential changes in traffic volumes and travel patterns, increased pollutant emissions, or increased noise levels would need to be evaluated to determine whether significant impacts to these resources would occur.

vii. Protected Species and Special Habitats

Natural habitat is limited on and around the South Brooklyn site. One State-protected bird species may use the water surrounding the site. NMFS (2005) indicates that federally protected marine species may be found in the vicinity of the SBMT. The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed. Alternative scenario Blue considers the placement of roughly 130 acres of fill in the interpier and waterward areas along the South Brooklyn waterfront. This development will reduce the available tidal, subtidal and open water habitat, including EFH, and may impact directly or indirectly federally protected marine turtles and shortnose sturgeon if they are shown to be using the area.

viii. Aquatic Habitats

No freshwater wetlands are located within the bounds of, or immediately adjacent to, the SBMT. Certain interpier areas associated with this port are classified as intertidal and/or support littoral zone/subtidal habitat. Alternative scenario Blue considers development that would significantly impact aquatic habitat resources by filling 130 acres. This area would be permanently lost as habitat. Construction would directly impact resident benthos. Indirect impacts to mobile biota would include the loss of habitat for spawning, foraging and resting.

Water quality at SBMT must conform to NYDEC Class I standards. The site must employ best management practices for stormwater control and any point source discharge must be authorized by permit.

ix. Cumulative Impacts

The potential impacts related to implementation of any of the alternative scenarios at SBMT must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. It is likely that future cumulative impact evaluations should focus on the environmental categories identified above, notably for traffic, air quality, noise, cultural resource, hazardous and regulated materials, protected species and special habitats, and aquatic habitats.

3. Howland Hook Marine Terminal

a) Overview of Alternative Scenarios

Under alternative scenario Orange, a new container terminal would be developed on the recently acquired parcels of land at Port Ivory, east of the existing terminal and intermodal facility. A limited amount (3 acres) of filling into the intertidal and submerged waterfront zone would be considered

with this alternative scenario. Western Avenue would be relocated and a parcel of land on its eastern side would be developed for warehousing. Acquisition of 118 acres would be required (85 acres have already been acquired; the remaining acreage lies north of the existing terminal and is undeveloped, characterized by wetlands).

Alternative scenarios Red, Yellow, and Blue retain the existing container terminal and intermodal railroad facility. The parcel of land recently acquired to the east of Western Avenue would be cleared and developed for warehousing.

b) Environmental Concerns/Issues

i. Traffic

CPIP estimates indicate 80 percent of the truck traffic on local roadways around HHMT is port-related traffic. Improvements that would generate additional future trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along access roadways: Goethals Road and Gulf Avenue. The potential for significant traffic impacts would also need to be considered within a larger traffic study area, including the Staten Island Expressway (I-278) and in the vicinity of port-related warehouses situated outside the port boundary.

ii. Air Quality

Alternative scenarios may affect local and regional air quality levels as a result of increased traffic volumes, changes in travel patterns on the roadway networks providing access to and egress from HHMT and on adjoining roadway networks. Local and regional air quality levels would need to be examined to determine whether significant impacts would result from modifications to on-site parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operations of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). Potential short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Many sources of noise originate from existing within or proximate to the HHMT such as commercial and private vehicles, railroad traffic, industrial machinery, steamship tug/barge operations. Typically, the noise levels from these sources vary with time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related vehicular traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptors to HHMT include a mobile-home park located approximately ¼-mile east of the site, along Goethals Road.

iv. Cultural Resources

Goethals Bridge and Staten Island Railroad Vertical Lift Bridge, the two historic architectural resources located within ½ mile of the site, would not be harmed by the future improvements and developments. Potential effects of other environmental impacts (i.e., traffic, noise, and vibration) that may result from the implementation of the alternative scenarios would need to be examined in relation to these nearby resources.

While the potential for archeologically sensitive resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impact to identified resources. Potential impacts may result from construction activities, particularly below-ground disturbances.

v. Hazardous and Regulated Materials

Leakage of petroleum products from former storage tanks has caused contamination of soil and groundwater at the former Proctor & Gamble/Port Ivory site. Additional sources of contamination may exist at Port Ivory, particularly at the former landfill, which is still undergoing investigation. The Proctor & Gamble/Port Ivory site is currently undergoing remediation in the Voluntary Cleanup Program with oversight by NYSDEC. The significant number of petroleum spills at the neighboring GATX site will likely continue to act as a source of groundwater contamination that has the potential to migrate to the Howland Hook site.

Alternative scenario Orange includes activities that will result in below-ground disturbance and dewatering, such as construction of foundations and infrastructure, grading, and installation of underground utilities. Soil and groundwater may require special handling and disposal, depending upon the chemical constituents at a particular area.

vi. Open Space Resources

Mariner's Marsh Park is located within ½ mile of HHMT. This resource would not be physically encroached upon as a result of any of the alternative scenarios' uses proposed for HHMT. However, future port-related improvement projects resulting in changes in traffic volumes and travel patterns, increased pollutant emissions, or increased noise levels would need to be evaluated to determine whether significant impacts to these resources would occur.

vii. Protected Species and Special Habitats

A state endangered species (peregrine falcon) has been identified by the NYSDEC in the vicinity of HHMT. Several other avian species that are protected in either New York or New Jersey have been observed at HHMT and/or Port Ivory. These species are expected to make use of suitable on-site habitat. Only alternative scenario Orange would impact habitat used by these species. Ecological functions and values would be lost or reduced, and species dependent upon habitat at Port Ivory would be directly affected by impacts during construction or reduced in abundance because of the reduction of habitat for shelter, nesting and foraging.

USFWS has designated the northwest portion of Staten Island as a Significant Habitat Complex, the Arthur Kill Complex. NMFS (2005) indicates that with the "exception of occasional transients, threatened and endangered species under NMFS' jurisdiction are not expected to occur in the vicinity of HHMT." The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed. NYSDEC designates the area adjacent to Howland Hook as a Significant Coastal and Wildlife Habitat (NYSDEC, 2004).

viii. Aquatic Habitats

Only alternative scenario Orange considers development within aquatic habitat on and surrounding the Howland Hook/Port Ivory site. While not mapped by any state or Federal agency, a small pocket of freshwater wetland was identified on the northwest end of the port. The Port Ivory site is divided by Bridge Creek, a tidal channel with associated tidal wetlands. The open water off the Port Ivory site supports both intertidal and subtidal habitat. Alternative scenario Orange would fill these areas, causing direct impacts to resident species and reducing the ecological functions of the area.

Water quality at HHMT must conform to NJDEP Class SE3 standards and NYDEC Class SD standards. The site must employ best management practices for stormwater control, and any point source discharge must be authorized by permit.

ix. Environmental Justice Populations

As described in Chapter 3.0, minority and low-income populations currently represent 79 percent and 25 percent, respectively, within ½ mile of HHMT. The nearest residential community is a mobile home park located approximately ¼-mile east of the site, along Goethals Road.

To determine whether environmental justice communities may be subject to disproportionately high adverse impacts with future proposed port and associated transportation improvement projects, future Census data and available forecasts will need to be analyzed to determine the presence of such communities in the vicinity of HHMT. Any future impact assessments that result in the disclosure of significant impacts would need to compare the degree of impacts on the environmental justice population(s) to the degree of impacts on non-environmental justice populations in the potentially affected area. Outreach to the environmental justice community(ies) would assist in the appropriate characterization of the communities in question; identification of local concerns and issues; and provision of opportunities for the communities to participate in the environmental review process.

x. Cumulative Impacts

The potential impacts related to implementation of alternative scenarios at HHMT must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. It is likely that future cumulative impact evaluations should focus on the environmental categories identified above, notably for traffic, air quality, noise, hazardous and regulated materials, protected species and special habitats, and aquatic habitats, and environmental justice populations.

4. Port Newark Marine Terminal

a) Overview of Alternative Scenarios

Alternative scenarios Orange, Yellow, and Blue have identical arrangements at Port Newark North. Alternative scenario Red is similar to the others, with the exception of the size and location of areas allocated for different cargo uses. The configurations of the alternative scenarios proposed for Port Newark South differ mainly in siting of facilities or the conversion of existing facilities to another type of port-related use. Land acquisition would not be required as part of the improvement options.

b) Environmental Concerns/Issues

i. Traffic

The CPIP estimates of truck traffic in the local Port Newark/Elizabeth area indicate that approximately 90 percent is port-related. Improvements that would generate additional future trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along local access roads: North Avenue, McLester Street, Corbin Street, Doremus Avenue and Port Street. The potential for significant traffic impacts would also need to be considered within a larger traffic study area including the New Jersey Turnpike (which provides access to the port site via Interchange 14 and Port Street) and U.S. Routes 1&9, as well as in the vicinity of port-related warehouses situated outside the port boundary.

ii. Air Quality

All of the alternative scenarios may affect local and regional air quality as a result of increased traffic volumes and changes in travel patterns on the roadway networks providing access to and egress from Port Newark, and on adjoining roadway networks. Local and regional air quality would need to be examined to determine whether significant impacts would result from modifications to on-site

parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operations of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). Potential short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Many sources of noise originate from within or proximate to Port Newark, such as commercial and private vehicles, railroad traffic, industrial machinery, steamship tug/barge operations, and airplanes at Newark Liberty International Airport. Typically, noise levels from these sources vary with the time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptor to Port Newark is Stella Maris Chapel, at 170 Corbin Street, which is already subject to high noise levels from port-related activities.

iv. Cultural Resources

Since none of the alternative scenarios' proposals for Port Newark include site enlargement, the adverse effect to historic architectural resources located within ½ mile of Port Newark (Newark & Elizabeth Branch of the Central Railroad of New Jersey, Newark Airport Buildings, the New Jersey Turnpike) would not be of concern. Potential effects of other environmental impacts (e.g., traffic, noise, and vibration) that may result from the alternative scenarios would need to be examined in relation to these nearby identified resources.

While the potential for archeological resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impact to any identified resources. Potential impacts may result from construction activities, particularly including any below-ground disturbances.

v. Hazardous and Regulated Materials

Many years of operation by former and current tenants at Port Newark have resulted in soil and groundwater contamination, mostly due to leaking storage tanks, poor housekeeping practices, and past disposal practices. The contaminants of concern include heavy metals, creosote, and petroleum constituents. The former Beazer, Inc. site at Maritime and Tyler Streets in Port Newark is contaminated with creosote. Most of the area has been capped with soil and asphalt, and a groundwater remediation system has been installed. Soil at the BP fuel oil terminal at the northern boundary of Port Newark is contaminated from petroleum releases, and the active metal scrap yard at Port Newark has heavy metal contamination in the soils.

All alternative scenarios include activities that will result in below-ground disturbance and dewatering, such as construction of foundations and infrastructure, grading, and installation of underground utilities. The soil and groundwater encountered may require special handling and disposal, depending upon the chemical constituents at a particular area.

vi. Protected Species and Special Habitats

There is limited natural habitat at Port Newark and few wildlife species. However, several protected species have been documented on site, most likely as transients, and New Jersey Heritage Files report that the area includes foraging habitat for waterbirds. Habitat for these species would not be directly affected by any alternative scenario because the Port would be rearranged within the existing footprint, no additional area supporting natural habitat would be used. NMFS (2005) indicates that with the "exception of occasional transients, threatened and endangered species under NMFS'

jurisdiction are not expected to occur in the vicinity of Port Newark." The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed. If in-water work is required to support the existing bulkheads and berths, habitat (including EFH) and aquatic species, including state and federally protected species (four turtles and shortnose sturgeon), must be protected. State and federal permits may be required for potential in-water work depending upon the construction design. Such permits would need to address impacts to marine species.

vii. Aquatic Habitats

Although the National Wetland Inventory (NWI) map for the area including Port Newark shows two small wetlands on Port Newark South, they were not observed on site and are believed to have disappeared. As a result, impacts associated with future development proposals that fall within the existing port boundary are not expected to result in impacts to freshwater wetland resources. In-water fill is not proposed in any alternative scenario, thus impacts to surrounding intertidal and open water subtidal habitat will not result from any of the alternative scenarios presented in the CPIP, as expansion outside of the existing port boundaries is not required.

If in-water work is needed to support the existing bulkheads and berths, aquatic habitat must be protected. State and federal permits may be required for potential in-water work, depending upon the construction design.

Water Quality at Port Newark must conform to NJDEP Class SE3 standards. The site must employ best management practices for stormwater control during construction and operation. Any point source discharge must be authorized by permit.

viii. Environmental Justice Populations

As described in Chapter 3.0, minority and low-income populations currently represent 58 percent and 35 percent, respectively, within ½ mile of Port Newark. The New Jersey Turnpike provides a physical barrier between Port Newark and the nearest residential community, which is located northwest in the Ironbound section of the City of Newark.

To determine whether environmental justice communities may be subject to disproportionately high adverse impacts with implementation of future proposed port and associated transportation improvement projects, future Census data and available forecasts will need to be analyzed to determine the presence of such communities in the vicinity of Port Newark. Any future impact assessments that result in the disclosure of significant impacts would need to compare the degree of impacts on the environmental justice population(s) to the degree of impacts on non-environmental justice populations in the potentially affected area. Outreach to the environmental justice community(ies) would assist in the appropriate characterization of the communities in question; identification of local concerns and issues; and provision of opportunities for the communities to participate in the environmental review process.

ix. Cumulative Impacts

The potential impacts related to implementation of any of the alternative scenarios at Port Newark must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. Notably for Port Newark, the cumulative impact evaluation must also consider projects that may be implemented, for a given alternative scenario, at nearby Port Elizabeth. It is likely that future cumulative impact evaluations will need to focus on the environmental categories identified above, notably for traffic, air quality, noise, hazardous and

regulated materials, protected species and special habitats, and aquatic habitats, and environmental justice populations.

5. Port Elizabeth Marine Terminal

a) Overview of Alternative Scenarios

Alternative scenarios Orange and Red include the acquisition of 230 acres of land southwest of Port Elizabeth (outside the port site boundary) for warehousing and an additional area near the South Elizabeth Channel for use as a container yard. Improvements also include the retention and extension of existing automobile terminals. Other auto terminals and warehouses would be removed with these alternative scenarios. Alternative scenarios Yellow and Blue would retain the existing arrangement of container terminals and do not propose land acquisition.

b) Environmental Concerns/Issues

i. Traffic

The CPIP estimates indicate that 91 percent of local truck traffic operating on North Avenue, McLester Street and Corbin Street is port-related. Improvements that would generate additional future trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along these roadways. The potential for significant traffic impacts would also need to be considered within a larger traffic study area, including the New Jersey Turnpike (which provides access to Port Elizabeth via Interchange 13A), U.S. Routes 1&9, as well as in the vicinity of port-related warehouses situated outside the port boundary, as envisioned in alternative scenarios Orange and Red.

ii. Air Quality

Alternative scenarios Orange and Red may affect local and regional air quality as a result of increased traffic volumes, changes in travel patterns on the roadway networks providing access to and egress from Port Elizabeth, and on adjoining roadway networks. Local and regional air quality would need to be examined to determine whether significant impacts would result from modifications to on-site parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operation of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). These types of activities may be implemented under alternative scenarios Orange and Red. Potential short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Similar to Port Newark, many sources of noise originate from within or proximate to Port Elizabeth, such as commercial and private vehicles, railroad traffic, industrial machinery, steamship tug/barge operations, and airplanes at Newark Liberty International Airport. Typically, the noise levels from these sources vary with time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related vehicular traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptor to Port Elizabeth, which is already subject to high noise levels from port-related activities, is Stella Maris Chapel located at 170 Corbin Street.

iv. Cultural Resources

As alternative scenarios Orange and Red include site expansion, potential impacts to historic architectural resources located within ½ mile of Port Elizabeth (Newark & Elizabeth Branch of the Central Railroad of New Jersey and the New Jersey Turnpike) may be possible. Potential effects of other environmental impacts (i.e., traffic, noise, and vibration) that may result from implementation

of the alternative scenarios would need to be examined in relation to these nearby identified resources.

While the potential for archeologically sensitive resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impact to any identified resources. Potential impacts may result from construction activities, particularly including any below-ground disturbances.

v. Hazardous and Regulated Materials

Many years of operation by former and current tenants at Port Elizabeth have resulted in soil and groundwater contamination, mostly due to leaking storage tanks, poor housekeeping, and past disposal. The contaminants of concern include heavy metals, polychlorinated biphenyls (PCBs), and petroleum constituents. A former landfill with PCB contamination is located where the IKEA furniture store is sited adjacent to Port Elizabeth and is now considered an adjoining source of contamination. The landfill was capped and a groundwater remediation system was installed. The Allied Signal property adjoining Port Elizabeth, a portion of which may be incorporated into the Port under alternative scenarios Orange and Red, is a hazardous waste site that has been undergoing assessment and investigation for sources of contamination since 1986.

Alternative scenarios Orange and Red include activities that will result in below-ground disturbance and dewatering, such as construction of foundations and infrastructure, grading, and installation of underground utilities. The soil and groundwater encountered may require special handling and disposal, depending upon the chemical constituents at a particular area.

vi. Open Space Resources

Elizabethport Little League Field (between Schiller Street and the Chemical Coast rail line) would not be physically encroached upon as a result of any of the alternative scenarios' uses proposed for Port Elizabeth. However, future port-related improvement projects resulting in potential changes in traffic volumes and travel patterns, increased pollutant emissions, or increased noise levels would need to be evaluated to determine whether significant impacts to this resource would occur.

vii. Protected Species and Special Habitats

There is little natural habitat at the existing Port Elizabeth and few wildlife species. However, several protected species have been documented on site, most likely as transients, and New Jersey identifies the area as supporting foraging habitat for waterbirds. Habitat for these species is not directly affected by alternative scenarios Yellow and Blue because the Port would be redeveloped within the existing footprint and no additional area with natural habitat would be used. NMFS (2005) indicates that with the "exception of occasional transients, threatened and endangered species under NMFS' jurisdiction are not expected to occur in the vicinity of Port Elizabeth." The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed. If in-water work is needed to support the existing bulkheads and berths in these alternative scenarios, habitat (including EFH) and aquatic species, including state and federally protected species, must be protected. State and federal permits may be required for potential in-water work, depending upon the construction design. Such permits would need to address impacts to marine species.

Alternative scenarios Orange and Red include the acquisition of land southwest of the site, an area with diverse natural habitats capable of supporting protected species and including protected

wetlands. Adverse impacts to ecological functions in these areas or loss of these habitats would reduce the ability of the region to support species and would likely require mitigation.

viii. Aquatic Habitats

Similar to Port Newark, there do not appear to be freshwater wetlands within the existing boundaries of Port Elizabeth, although some are depicted on the federal maps. Immediately to the south of the port, on the Allied Signal property, both fresh and tidal wetlands are present. In addition, areas of open water around the port include subtidal habitat. Any redevelopment proposed within the existing port footprint will not impact either freshwater or tidal wetlands (alternative scenarios Yellow and Blue).

Port-related improvements that require the expansion of the facility into the Allied Signal property (alternative scenarios Orange and Red) would impact the ecological function of natural habitats, potentially causing impacts to and reductions in the abundance of species using these areas. When detailed design of construction and operations methods are available, an assessment of the unavoidable impacts to natural resources would be required before permits to allow the expansion into regulated resources would be issued.

Water quality at Port Newark must conform to NJDEP Class SE3 standards. The site must employ best management practices for stormwater control, and any point source discharge must be authorized by permit.

ix. Environmental Justice Populations

As described in Chapter 3.0, minority and low-income populations currently represent 58 percent and 35 percent, respectively, within ½ mile of Port Elizabeth. Major infrastructure, including roadways and industrial/warehousing facilities, provide a physical barrier between Port Elizabeth and the nearest residential community, which is located along Schiller Street, as well as residences located east of U.S. Route 1&9, even further from Port Elizabeth.

To determine whether environmental justice communities may be subject to disproportionately high adverse impacts with implementation of future proposed port and associated transportation improvement projects, future Census data and available forecasts will need to be analyzed to determine the presence of such communities in the vicinity of Port Elizabeth. Any future impact assessments that result in the disclosure of significant impacts would need to compare the degree of impacts on the environmental justice population(s) to the degree of impacts non-environmental justice populations in the potentially affected area. Outreach to the environmental justice community(ies) would assist in the appropriate characterization of the communities in question; identification of local concerns and issues; and provision of opportunities for the communities to participate in the environmental review process.

x. Cumulative Impacts

The potential impacts related to implementation of any of the alternative scenarios at Port Elizabeth must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. Notably for Port Elizabeth, the cumulative impact evaluation must also consider projects that may be implemented, for a given alternative scenario, at nearby Port Newark. It is likely that future cumulative impact evaluations should focus on the environmental categories identified above, notably for traffic, air quality, noise, hazardous and regulated materials, protected species and special habitats, aquatic habitats, and environmental justice populations.

6. Port Jersey Global Marine Terminal

a) Overview of Alternative Scenarios

Alternative scenario Orange includes the development of a new container terminal, a warehouse, and intermodal rail facility along a portion of the waterfront, as well as in the location of existing auto terminals (to be removed). The existing container terminal is retained. Alternative scenario Red is similar to alternative scenario Orange, with the exception of the existing container terminal, which would be expanded to occupy the entire peninsula. Alternative scenarios Yellow and Blue are generally the same as existing conditions, with the addition of an intermodal rail facility developed along the northern portion of the site to serve the container and automobile terminals. Land acquisition would not be acquired under any of the alternative scenarios.

b) Environmental Concerns/Issues

i. Traffic

The CPIP estimates indicate that 48 percent of local truck traffic along Port Jersey Boulevard and 13 percent of truck traffic along Pulaski Street is related to Port Jersey. Improvements that would generate additional future trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along these roadways. The potential for significant traffic impacts would also need to be considered within a larger traffic study area, including the New Jersey Turnpike (which provides access to Port Jersey via Interchange 14A), Route 78, Route 440 and in the vicinity of port-related warehouses situated outside the port boundary.

ii. Air Quality

Alternative scenarios may affect local and regional air quality levels as a result of increased traffic volumes, changes in travel patterns on the roadway networks providing access to and egress from Port Jersey and on adjoining roadway networks. Local and regional air quality would need to be examined to determine whether significant impacts would result from modifications to on-site parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operations of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). Potential short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Many sources of noise originate from within or proximate to Port Jersey such as commercial and private vehicles, railroad traffic, industrial machinery, steamship tug/barge operations (on-site station. Typically, the noise levels from these sources vary with time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related vehicular traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptors to Port Jersey are residences in the vicinity of Gates Avenue and Catherine Court in Jersey City and along the northern section of Avenue E in Bayonne.

iv. Cultural Resources

Port Jersey is located within a portion of the Greenville Yard Historic District. The Greenville Yard Piers are located just west of the Auto Marine Terminal, and the former bed of the Morris Canal is located between the New Jersey Turnpike Hudson County Extension and the Auto Marine Terminal. Expansion and development of port facilities proposed in the alternative scenarios may potentially impact these cultural resources. Potential effects of other environmental impacts (i.e., traffic, noise, and vibration) that may result from implementation of the alternative scenarios would also need to be examined in relation to these nearby resources.

While the potential for archeologically sensitive resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impact to any identified resources. Potential impacts may result from construction activities, particularly including any below-ground disturbances.

v. Hazardous and Regulated Materials

Leakage of petroleum products from former underground storage tanks has caused contamination of soil and groundwater at Port Jersey. Existing underground storage tanks and on-going automotive processing and body repair activities involve the storage and use of hazardous materials and petroleum products. These activities have the potential to result in future releases of hazardous materials and petroleum products to site soils and groundwater.

All alternative scenarios include activities, such as construction of foundations and infrastructure, grading, and installation of underground utilities, which will result in below-ground disturbance and dewatering. The soil and groundwater encountered may require special handling and disposal, depending upon the chemical constituents at a particular area.

vi. Open Space Resources

Open space resources, including Russell Golding Park in Bayonne (Avenue E, between E. 49th and E. 51st Streets) and Caven Point Recreational Facility (intersection of Caven Point Road and Chapel Avenue), would not be physically affected by the alternative scenarios proposed for Port Jersey, since they do not physical encroach upon land outside port boundaries. However, port-related improvement options that may result in potential changes in traffic volumes and travel patterns would need to consider the effects of increased air pollutant emissions and increased noise to these resources, as well as Port Jersey Park, which is being planned for the Port Jersey Peninsula.

vii. Protected Species and Special Habitats

Habitat on Port Jersey includes a constructed wetland and constructed tern habitat areas. Several State-protected species have been observed in the vicinity of the site, and the NJDEP identifies the area as supporting foraging habitat for avian species, including waterbirds. NMFS (2005) indicates that federally protected marine species may be found in the vicinity of the Port Jersey Global Marine Terminal. The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed. Alternative scenarios Yellow and Blue proposed in the CPIP will not impact these habitats or the species that use them, as redevelopment would fall within the existing footprint of the port.

Impacts resulting from the implementation of the alternative scenarios Orange and Red, especially the filling of the wetland mitigation area, would reduce the habitat value of the area and would require assessments, permits and mitigation. If in-water work is needed to support the existing bulkheads and berths, habitat (including EFH) and aquatic species, including state and federally protected species, must be safeguarded. State and federal permits may be required for the potential in-water work, depending upon the construction design. Such permits would need to address impacts to marine species.

viii. Aquatic Habitats

Areas within Port Jersey (the constructed wetland) and adjacent to Port Jersey (the west end of the turning basin in Port Jersey Channel and the west end of Greenville Channel) support tidal wetland communities. Subtidal habitat is present in some of the open water surrounding the port on three

sides. While two of the proposed scenarios will have no impact to any of the wetland resources (alternative scenarios Yellow and Blue), alternative scenarios Red and Orange will result in impacts on the constructed wetland that is located in the NEAT section of the facility. Loss of this habitat or loss of the values and functions provided by this habitat would affect the ability of the area to support biota. Some biota with limited mobility may be directly affected and lost.

Water quality at Port Jersey must conform to NJDEP Class SE2 standards. The site must employ best management practices for stormwater control, and any point source discharge must be authorized by permit.

ix. Cumulative Impacts

The potential impacts related to implementation of any of the alternative scenarios at Port Jersey must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. Notably for Port Jersey, the cumulative impact evaluation must also consider projects that may be implemented, for a given alternative scenario, at the nearby Peninsula. It is likely that future cumulative impact evaluations should focus on the environmental categories identified above, notably for traffic, air quality, noise, hazardous and regulated materials, cultural resources, open space resources, protected species and special habitats, and aquatic habitats.

7. The Peninsula at Bayonne Harbor

a) Overview of Alternative Scenarios

Under alternative scenarios Orange and Blue, the entire area of the Peninsula designated for port use would be cleared of unwanted buildings and other infrastructure and developed into an automobile terminal. Instead of an automobile terminal, the area is developed into a container terminal under alternative scenario Red. Alternative scenario Yellow provides a combination of termini, with the majority of the area cleared of existing buildings and developed into a container terminal and a portion of the western area developed into an automobile terminal. Land acquisition would not be required for any of the alternative scenarios.

b) Environmental Concerns/Issues

i. Traffic

Improvements that would generate additional future vehicular trips, particularly truck trips, but also employee trips, would need to be assessed to determine whether significant impacts would occur along access roadways: Port Terminal Boulevard, E. 40th Street and East 45th Street. The potential for significant traffic impacts would also need to be considered within a larger traffic study area, including the New Jersey Turnpike (which provides access to the port via Interchange 14A), Route 78, Route 440 and in the vicinity of port-related warehouses situated outside the port boundary.

ii. Air Quality

Alternative scenarios may affect local and regional air quality levels as a result of increased traffic volumes, changes in travel patterns on the roadway networks providing access to and egress from the Peninsula, and on adjoining roadway networks. Additionally, local and regional air quality levels would need to be examined to determine whether significant impacts would result from modifications to on-site parking, truck storage and maintenance facilities, changes in ship and tugboat operations, and on-site operations of heavy-duty diesel equipment (e.g., cranes, loaders, tractors). Potential short-term air quality effects of significant construction activities would also need to be examined.

iii. Noise

Many sources of noise, such as commercial and private vehicles, railroad traffic, industrial machinery, and steamship tug/barge operations, originate from within or proximate to the Peninsula. Typically, the noise levels from these sources vary with time of day and type of equipment. Potential noise issues associated with the alternative scenarios would include increases in, and potential re-routing of, port-related vehicular traffic, construction activities, and the addition of stationary noise sources. The closest noise-sensitive receptors to the Peninsula include residential uses along Avenue E (between E. 32nd to E. 47th Streets).

iv. Cultural Resources

None of the improvement options and development Scenarios for the Peninsula includes site expansion. As a result, adverse effects to historic architectural resources located within ½ mile of the site (First Dutch Reformed Church, Bayonne Truck House #1, PS # 5, the Central Railroad of New Jersey Historic District, Greenville Yard Historic District, Greenville Yard Piers, New Jersey Turnpike, and Morris Canal) would not be anticipated. However, the potential effects of other environmental impacts (i.e., traffic, noise, and vibration) that may result from implementation of alternative scenarios would need to be examined in relation to these nearby identified resources.

While the potential for archeologically sensitive resources was not investigated for the CPIP EA, future environmental reviews of proposed port and associated transportation improvement projects would need to include such investigation to determine whether there is any potential for significant impact to any identified resources. Potential impacts may result from construction activities, particularly including any below-ground disturbances.

v. Hazardous and Regulated Materials

Past operations at MOTBY resulted in soil and groundwater contamination of the peninsula due to past disposal practices and placement of fill. The Peninsula at Bayonne is currently undergoing remediation under NJDEP oversight. Several Areas of Concern (AOCs) have been identified and are being remediated. The AOCs are being addressed by a remedial action work plan that includes removal of source area "hot spots," capping of disposal areas, and monitoring of site-wide groundwater while allowing for natural attenuation of contaminated groundwater to occur. A No Further Action (NFA) letter is expected to be issued by NJDEP for the remedial actions when complete.

All alternative scenarios include activities, such as construction of foundations and infrastructure, grading, and installation of underground utilities, which will result in below-ground disturbance and dewatering. The soil and groundwater encountered may require special handling and disposal, depending upon the chemical constituents at a particular area. In addition, future port development will require further NJDEP investigation to determine if the proposed site development activities require additional remedial actions.

vi. Open Space Resources

Numerous open space resources are either located or planned within ½ mile of the Peninsula. These resources would not be physically encroached upon as a result of implementation of any of the alternative scenarios' uses proposed for the Peninsula. However, future port-related improvement projects resulting in potential changes in traffic volumes and travel patterns, increased pollutant emissions, or increased noise levels would need to evaluated to determine whether significant impacts to these resources, as well as MOTBY Park, Port Jersey Park, Buffer Park and the Hudson River Walkway, all of which are being planned for the area.

vii. Protected Species and Special Habitats

Several State-protected bird species were observed using on-site habitat (including successional old field, successional shrubland, and successional southern hardwoods). All four alternative scenarios would result in impacts on upland habitat that supports some of the State-protected species observed. Adverse impacts to ecological functions in these areas or loss of these habitats would reduce the ability of the region to support species. Resident species with limited mobility may be directly affected; species capable of avoiding impacts would be affected indirectly through reductions in the amount of habitat available for nesting, resting and foraging.

The Peninsula at Bayonne Harbor supports a variety of habitats, including NJDEP-identified waterbird foraging habitat. Expansion of the Peninsula outside of the existing boundaries is not proposed, and therefore impacts to the waterbird foraging habitat are unlikely unless the construction method proposed requires extensive in-water work to support the existing bulkheads and berths. In such a case, habitat (including EFH) and aquatic species, including state and federally protected species must be safeguarded. State and federal permits may be required for the potential in-water work, depending upon the construction design. Such permits would need to address impacts to marine species.

NMFS (2005) indicates that federally protected marine species may be found in the vicinity of the Peninsula at Bayonne Harbor. The status of these species may change as new information becomes available and additional species may be added, as warranted. Updated species lists must be obtained from the agency at the time that a project is proposed.

viii. Aquatic Habitats

The Peninsula at Bayonne Harbor supports a freshwater wetland complex in its western end, along with an intertidal wetland along its northwest shoreline and subtidal habitat in the open water areas surrounding the port. All fours alternative scenarios proposed in the CPIP propose development in the freshwater wetland. These wetlands will be eliminated or reduced in size, thus reducing ecological functions and resulting in impacts on the resident biota and species using the area for foraging and resting. None of the proposed plans call for expansion of the footprint into intertidal or subtidal habitat.

Water quality at Bayonne Peninsula must conform to NJDEP Class SE2 standards. The site must employ best management practices for stormwater control, and any point discharge source must be authorized by permit.

ix. Cumulative Impacts

The potential impacts related to implementation of any of the alternative scenarios at the Peninsula must also be evaluated in future environmental reviews of proposed port improvement and associated transportation projects in the context of past, present, and other reasonably foreseeable future projects and actions within the study area. Notably for the Peninsula, the cumulative impact evaluation must also consider projects that may be implemented, at nearby Port Jersey. It is likely that future cumulative impact evaluations should focus on the environmental categories identified above, notably for traffic, air quality, noise, hazardous and regulated materials, open space resources, protected species and special habitats, and aquatic habitats.

TABLE 5-5: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO ORANGE (PAGE 1 OF 2)

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues				
				Land Use / Right-of-Way Acquisition	Adjacent/Proximate Roadways	Regional Air Quality Issues	Nearby Noise-Sensitive Receptors	Nearby Cultural Resources
Orange	Port Newark North	1) removal of existing roads and rails track; 2) development of road/rail corridor and terminal support industries zone along northern portion of site; 3) removal of majority of covered storage sheds, warehouses and other large buildings; 4) consolidation of dry bulk storage area at western end of site; and 5) consolidation of auto terminals into large area that may be subdivided.	Yes	No land acquisition.	North Ave; McLester St; Corbin St; Doremus Ave; Port St.	Monitored annual $PM_{2.5}$ level @ NJ Turnpike Int. 13 above NAAQS	Stella Maris Chapel (170 Corbin St)	Newark & Elizabeth Branch of the Central Railroad of New Jersey Mainline Corridor District; New Jersey Turnpike; and Three Newark Airport structures
	Port Newark South	1) removal of existing roads and rail tracks; 2) development of central road access corridor and terminal support industries zone; 3) removal of existing small container terminal, covered storages sheds, warehouses, cool stores and other buildings; 4) allocation of land (progressively) to existing container terminal for expansion and to consolidated auto terminal parking lots; and 5). Conversion of existing dry bulk terminals to auto terminals.	Yes					
	Port Elizabeth	1) retention and extension (by removal of auto terminal and warehouse) of container terminals; 2) designation of land southwest of site (outside port boundary) for warehousing (if it can be acquired); 3) retention of three large cool stores; and 4) acquisition of additional area south of site, near South Elizabeth Channel for use as container yard.	Yes	Acquisition of 230 acres	North Ave; McLester St; Corbin St; Doremus Ave; Port St.	Monitored annual $PM_{2.5}$ level @ NJ Turnpike Int. 13 above NAAQS	Stella Maris Chapel (170 Corbin St)	Newark & Elizabeth Branch of the Central Railroad of New Jersey Mainline Corridor District; New Jersey Turnpike; and Three Newark Airport structures
	Port Jersey	1) retention of existing container terminal; 2) removal of existing auto terminals; 3) development of new container terminal (in area of former auto terminal); 4) development of berths along a large portion of waterfront requiring filling of waterfront and natural reserve area; and 5) development of intermodal rail facility along the northern portion of peninsula to serve both container terminals.	Yes	No land acquisition.	NJ Route 440; Port Terminal Rd; Port Jersey Blvd; Pulaski St; Avenue E; Harbor Ave.	NY/NJ region is non-attainment area for ozone and $PM_{2.5}$	Residential uses in the vicinity of Gates Ave. and Catherine Ct. in Jersey City and along Ave E in Bayonne.	Greenville Yard Historic District; Greenville Yard Piers; New Jersey Turnpike; Morris Canal and Prehistoric Archeological site north of Auto Marine Terminal
	Bayonne Peninsula	Entire area designated for port use would be cleared of unwanted buildings/other infrastructure and developed into an automobile terminal.	Yes	No land acquisition.	NJ Route 440; Port Terminal Rd; Port Jersey Blvd; Pulaski St; Avenue E.	NY/NJ region is non-attainment area for ozone and $PM_{2.5}$	Residential uses along Ave E (32nd to 47th Sts.)	First Dutch Reformed Church, Bayonne Truck House #1, PS #5 and Central Railroad of New Jersey, Main Line Historic District, Greenville Yard Historic District; Greenville Yard Piers; New Jersey Turnpike; Morris Canal
	Howland Hook	1) Development of new container terminal on recently acquired land at Port Ivory (east of existing terminal and intermodal rail facility); 2) requirement of limited filling into the intertidal and submerged waterfront zones; 3) relocation of Western Avenue; and 4) development of warehousing on parcel of land acquired east of Western Avenue.	Yes	Acquisition of 118 acres (85 acres of Port Ivory is included, which has already been acquired but not developed).	Goethals Ave @ Forest Ave	NY/NJ region is non-attainment area for ozone and $PM_{2.5}$	Mobile home park ¼-mile east of site along Goethals Road.	Goethals Bridge; Staten Island Railroad Vertical Lift Bridge
	Red Hook/ North Brooklyn	1) Reconfiguration (some) of berth arrangement; 2) refurbishment/reconstruction and redevelopment of Piers 9 to 12; 3) provision of berth space only at Pier 8; and 4) usage of Piers 6 and 7 not required.	Yes	Acquisition of 20 Acres (Pier 12)	Columbia St. @ BQE Ramps; Atlantic Ave @ BQE Ramps	NY/NJ region is non-attainment area for ozone and $PM_{2.5}$	Residences along Columbia Street (from roughly Congress Street to Degraw Street) and Degraw Street (between Columbia Street and Van Brunt Street).	Fire Brick and Clay Retort Building
	South Brooklyn	1) Reconfiguration of berth arrangement; and 2) refurbishment/rebuilding of piers; and 3) development of cargo handling and auto terminal in landside area (30 to 80 acres).	Yes	No land acquisition.		NY/NJ region is non-attainment area for ozone and $PM_{2.5}$	Residences located along 43rd Street (between 2nd and 3rd Avenues and I-278)	Bush Terminal; Sunset Park Historic District

* 85 acres have already been acquired at the Port Ivory site.

[1] The National Marine Fisheries Service (NMFS) has designated essential fish habitat for 13 managed finfish, 3 managed skate, 2 unmanaged finfish, 4 endangered sea turtles and 1 endangered finfish species as existing throughout the NY/NJ Harbor.

[2] Subtidal Wetlands include Littoral and/or Sublittoral Zones.

Notes:

1. Berth construction or reconstruction at all ports should avoid and minimize impacts to aquatic habitat.
2. Information on hazardous materials should be updated prior to construction.
3. Species identified by both New York and New Jersey may be found on the related port facility should suitable habitat exist.
4. NYSDEC and NJDEP lists should not be substituted for on-site surveys for TES and/or TES habitat.
5. The actual location of species provided by NYSDEC is considered sensitive and may not be released to the public without permission from the agency.
6. The term "regulated materials" includes any surface or subsurface materials that would be disturbed, handled, re-used, or removed from a Port site in the course of development/redevelopment that are governed by specific regulations.
7. "Regulated materials" include hazardous materials, petroleum-contaminated materials (non-hazardous), construction and demolition debris, asbestos-containing materials, lead-based paint waste, and other such materials governed by federal, state, or local regulations.

TABLE 5-5: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO ORANGE (PAGE 2 OF 2)

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues					
				On- and off-site Hazardous and Regulated Materials	Nearby Open Space Resources	On- and off- Site Protected Species and Special Habitats	Water Quality	On- and off-site Aquatic Habitats	Environmental Justice Populations
Orange	Port Newark North	1) removal of existing roads and rails track; 2) development of road/rail corridor and terminal support industries zone along northern portion of site; 3) removal of majority of covered storage sheds, warehouses and other large buildings; 4) consolidation of dry bulk storage area at western end of site; and 5) consolidation of auto terminals into large area that may be subdivided.	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NJDEP:** Black-crowned and yellow-crowned night-heron and colonial waterbird foraging habitats and peregrine falcon on site. Checkered white, savannah sparrow, upland sandpiper within ¼ mile of site. **USFWS:** Transient bald eagle in the vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE3 Standards		Disproportionate minority and low-income community within ½ mile: 58% Black/African American; 33% households and 35% individuals below poverty level.
	Port Newark South	1) removal of existing roads and rail tracks; 2) development of central road access corridor and terminal support industries zone; 3) removal of existing small container terminal, covered storages sheds, warehouses, cool stores and other buildings; 4) allocation of land (progressively) to existing container terminal for expansion and to consolidated auto terminal parking lots; and 5). conversion of existing dry bulk terminals to auto terminals.	Yes						
	Port Elizabeth	1) retention and extension (by removal of auto terminal and warehouse) of container terminals; 2) designation of land southwest of site (outside port boundary) for warehousing (if it can be acquired); 3) retention of three large cool stores; and 4) acquisition of additional area south of site, near South Elizabeth Channel for use as container yard.	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NJDEP:** Black-crowned and yellow-crowned night-heron and colonial waterbird foraging habitats and peregrine falcon on site. Checkered white, savannah sparrow, upland sandpiper within ¼ mile of site. **USFWS:** Transient bald eagle in the vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE3 Standards	Intertidal and Freshwater Wetlands. Impact 27 acres of Aquatic Habitat.	Disproportionate minority and low-income community within ½ mile: 58% Black/African American; 33% households and 35% individuals below poverty level.
	Port Jersey	1) retention of existing container terminal; 2) removal of existing auto terminals; 3) development of new container terminal (in area of former auto terminal); 4) development of berths along a large portion of waterfront requiring filling of waterfront and natural reserve area; and 5) development of intermodal rail facility along the northern portion of peninsula to serve both container terminals.	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.	Russell Golding Park and Caven Point Recreation Facility	**NJDEP:** Black-crowned night heron and colonial waterbird foraging habitats on site. Constructed habitat for state and federally endangered tern on site. **USFWS:** Transient bald eagle in vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE2 Standards	Intertidal and Open Water/Subtidal[2] Wetlands. Wetland mitigation site. Impact 20 acres of Aquatic Habitat.	
	Bayonne Peninsula	Entire area designated for port use would be cleared of unwanted buildings/other infrastructure and developed into an automobile terminal.	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal. NJDEP may require additional remediation by future developers.	Russell Golding Park, Caven Point Recreation Facility, Dr. Morris Park, 40th Street Playground, 28th Street Park. Planned facilities include: MOTBY Park, Port Jersey Park, Buffer Park, Hudson River Waterfront Walkway, and a golf course.	**NJDEP:** Black-crowned night heron and colonial waterbird foraging habitats on site. **USFWS:** Transient bald eagle in vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE2 Standards	Intertidal and Freshwater Wetlands. Impact 17 acres of Aquatic Habitat	
	Howland Hook	1) development of new container terminal on recently acquired land at Port Ivory (east of existing terminal and intermodal rail facility); 2) requirement of limited filling into the intertidal and submerged waterfront zones; 3) relocation of Western Avenue; and 4) development of warehousing on parcel of land acquired east of Western Avenue.	Yes	Former Proctor & Gamble/Port Ivory site in NYSDEC Voluntary Cleanup Program. On-going remediation. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.	Mariner's Marsh Park	**NYSDEC:** Peregrine Falcon on or in immediate vicinity of the site. **NYSDOS:** New York City Significant Coastal Habitats. **USFWS:** Significant Habitat Complex**:** Arthur Kill Complex includes Bridge Creek and Goethals Bridge Pond. **NMFS:** EFH and TES species[1].	Conform to NYSDEC Class SD Standards	Intertidal and Open Water/Subtidal[2] Wetlands. Unmapped Freshwater Emergent Wetland. Impact 20 acres of Aquatic Habitat.	Disproportionate minority and low-income community within ½ mile: 53% Hispanic/Latino; 26% households and 25% individuals below poverty level.
	Red Hook/ North Brooklyn	1) Reconfiguration (some) of berth arrangement; 2) refurbishment/reconstruction and redevelopment of Piers 9 to 12; 3) provision of berth space only at Pier 8; and 4) usage of Piers 6 and 7 not required.	Yes	Spills of petroleum and hazardous materials documented. Current status of Port-wide soils and groundwater unknown. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NMFS:** EFH and TES species[1].	Conform to NYSDEC Class I Standards		
	South Brooklyn	1) reconfiguration of berth arrangement; and 2) refurbishment/rebuilding of piers; and 3) development of cargo handling and auto terminal in landside area (30 to 80 acres).	Yes	Spills of petroleum and hazardous materials documented. Current status of Port-wide soils and groundwater unknown. Limited soil investigation found petroleum contamination. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NYSDEC:** Pied-billed Grebe on or in immediate vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NYSDEC Class I Standards		

TABLE 5-6: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO RED (PAGE 1 OF 2)

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues				
				Land Use / Right-of-Way Acquisition	Adjacent/Proximate Roadways	Regional Air Quality Issues	Nearby Noise-Sensitive Receptors	Nearby Cultural Resources
Red	Port Newark North	Similar to alternative scenarios Orange, Yellow, and Blue; differs due to adjustments in size and location of allocated areas.	Yes	Same as alternative scenario Orange.				
	Port Newark South	Similar to alternative scenario Orange except that liquid bulk terminal is converted to auto terminal use.	Yes	Same as alternative scenario Orange.				
	Port Elizabeth	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.				
	Port Jersey	Similar to alternative scenario Orange except existing container terminal is expanded to occupy entire peninsula as a single entity.	Yes	Same as alternative scenario Orange.				
	Bayonne Peninsula	Entire area designated for port use would be cleared of unwanted buildings/other infrastructure and developed into a container terminal	Yes	No land acquisition	NJ Route 440; Port Terminal Rd; Port Jersey Blvd; Pulaski St; Avenue E.	Same as alternative scenario Orange.	Residential uses along Ave E (32nd to 47th Sts.)	First Dutch Reformed Church, Bayonne Truck House #1, PS #5 and Central Railroad of New Jersey, Main Line Historic District, Greenville Yard Historic District; Greenville Yard Piers; New Jersey Turnpike; Morris Canal
	Howland Hook	1) retention of existing container terminal and intermodal railroad facility; 2) development of warehousing on parcel of land acquired east of Western Avenue.	Yes	No land acquisition*	Goethals Ave @ Forest Ave	Same as alternative scenario Orange.	Mobile home park ¼-mile east of site along Goethals Road.	Goethals Bridge; Staten Island Railroad Vertical Lift Bridge
	Red Hook/ North Brooklyn	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.				
	South Brooklyn	Similar to alternative scenario Orange except auto terminal is developed as a dry bulk terminal with two additional berths.	Yes	No land acquisition.	Gowanus Ramp @ 2nd Ave/39th St	Same as alternative scenario Orange.	Residences located along 43rd Street (between 2nd and 3rd Avenues and I-278)	

* 85 acres have already been acquired at the Port Ivory site.

[1] The National Marine Fisheries Service (NMFS) has designated essential fish habitat for 13 managed finfish, 3 managed skate, 2 unmanaged finfish, 4 endangered sea turtles and 1 endangered finfish species as existing throughout the NY/NJ Harbor.

[2] Subtidal Wetlands include Littoral and/or Sublittoral Zones.

Notes:

1. Berth construction or reconstruction at all ports should avoid and minimize impacts to aquatic habitat.
2. Information on hazardous materials should be updated prior to construction.
3. Species identified by both New York and New Jersey may be found on the related port facility should suitable habitat exist.
4. NYSDEC and NJDEP lists should not be substituted for on-site surveys for TES and/or TES habitat.
5. The actual location of species provided by NYSDEC is considered sensitive and may not be released to the public without permission from the agency.
6. The term “regulated materials” includes any surface or subsurface materials that would be disturbed, handled, re-used, or removed from a Port site in the course of development/redevelopment that are governed by specific regulations.
7. “Regulated materials” include hazardous materials, petroleum-contaminated materials (non-hazardous), construction and demolition debris, asbestos-containing materials, lead-based paint waste, and other such materials governed by federal, state, or local regulations.

TABLE 5-6: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO RED (PAGE 2 OF 2)

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues					
				On- and off-site Hazardous and Regulated Materials	Nearby Open Space Resources	On- and off- Site Protected Species and Special Habitats	Water Quality	On- and off-site Aquatic Habitats	Environmental Justice Populations
Red	Port Newark North	Similar to alternative scenarios Orange, Yellow, and Blue; differs due to adjustments in size and location of allocated areas.	Yes	Same as alternative scenario Orange.					
	Port Newark South	Similar to alternative scenario Orange except that liquid bulk terminal is converted to auto terminal use.	Yes	Same as alternative scenario Orange.					
	Port Elizabeth	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.					
	Port Jersey	Similar to alternative scenario Orange except existing container terminal is expanded to occupy entire peninsula as a single entity.	Yes	Same as alternative scenario Orange.					
	Bayonne Peninsula	Entire area designated for port use would be cleared of unwanted buildings/other infrastructure and developed into a container terminal	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be regulated materials for purposes of handling or disposal.		**NJDEP:** Black-crowned night heron and colonial waterbird foraging habitats on site. **USFWS:** Transient bald eagle in vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE2 Standards	Intertidal and Freshwater Wetlands Impact 17 acres of Aquatic Habitat.	
	Howland Hook	1) retention of existing container terminal and intermodal railroad facility; 2) development of warehousing on parcel of land acquired east of Western Avenue.	Yes	Former Proctor & Gamble/Port Ivory site in NYSDEC Voluntary Cleanup Program. On-going remediation. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.	Mariner's Marsh Park	**NYSDEC:** Peregrine Falcon on or in immediate vicinity of the site. **NYSDOS:** New York City Significant Coastal Habitats. **USFWS:** Significant Habitat Complex**:** Arthur Kill Complex includes Bridge Creek and Goethals Bridge Pond. **NMFS:** EFH and TES species[1].	Conform to NYSDEC Class SD Standards		Disproportionate minority and low-income community within ½ mile: 53% Hispanic/Latino; 26% households and 25% individuals below poverty level
	Red Hook/ North Brooklyn	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.					
	South Brooklyn	Similar to alternative scenario Orange except auto terminal is developed as a dry bulk terminal with two additional berths.	Yes	Spills of petroleum and hazardous materials documented. Current status of Port-wide soils and groundwater unknown. Limited soil investigation found petroleum contamination. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NYSDEC:** Pied-billed Grebe on or in immediate vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NYSDEC Class I Standards		

* 85 acres have already been acquired at the Port Ivory site.

[1] The National Marine Fisheries Service (NMFS) has designated essential fish habitat for 13 managed finfish, 3 managed skate, 2 unmanaged finfish, 4 endangered sea turtles and 1 endangered finfish species as existing throughout the NY/NJ Harbor.

[2] Subtidal Wetlands include Littoral and/or Sublittoral Zones.

Notes:

1. Berth construction or reconstruction at all ports should avoid and minimize impacts to aquatic habitat.
2. Information on hazardous materials should be updated prior to construction.
3. Species identified by both New York and New Jersey may be found on the related port facility should suitable habitat exist.
4. NYSDEC and NJDEP lists should not be substituted for on-site surveys for TES and/or TES habitat.
5. The actual location of species provided by NYSDEC is considered sensitive and may not be released to the public without permission from the agency.
6. The term “regulated materials” includes any surface or subsurface materials that would be disturbed, handled, re-used, or removed from a Port site in the course of development/redevelopment that are governed by specific regulations.
7. “Regulated materials” include hazardous materials, petroleum-contaminated materials (non-hazardous), construction and demolition debris, asbestos-containing materials, lead-based paint waste, and other such materials governed by federal, state, or local regulations.

TABLE 5-7: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO YELLOW (PAGE 1 OF 2)

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues				
				Land Use / Right-of-Way Acquisition	Adjacent/Proximate Roadways	Regional Air Quality Issues	Nearby Noise-Sensitive Receptors	Nearby Cultural Resources
Yellow	Port Newark North	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.				
	Port Newark South	Similar to alternative scenario Orange except with larger container terminal and smaller auto terminal.	Yes	Same as alternative scenario Orange.				
	Port Elizabeth	Retention of existing arrangement of container terminals	Yes	No land acquisition.	North Ave; McLester St; Corbin St; Doremus Ave; Port St.	Same as alternative scenario Orange.	Stella Maris Chapel (170 Corbin St)	Newark & Elizabeth Branch of the Central Railroad of New Jersey Mainline Corridor District; New Jersey Turnpike; and Three Newark Airport structures
	Port Jersey	Similar to existing situation with development of intermodal rail facility along the northern edge of Port Jersey to serve both container and automobile terminals	Yes	No land acquisition.	NJ Route 440; Port Terminal Rd; Port Jersey Blvd; Pulaski St; Avenue E; Harbor Ave	Same as alternative scenario Orange.	Residential uses in the vicinity of Gates Ave. and Catherine Court in Jersey City and along Ave E in Bayonne	Greenville Yard Historic District; Greenville Yard Piers; New Jersey Turnpike; Morris Canal and Prehistoric Archeological site north of Auto Marine Terminal
	Bayonne Peninsula	Entire area designated for port use would be cleared of unwanted buildings/other infrastructure and developed into a container terminal; balance of available area (at western end) is developed into an automobile terminal.	Yes	No land acquisition.	NJ Route 440; Port Terminal Rd; Port Jersey Blvd; Pulaski St; Avenue E.	Same as alternative scenario Orange.	Residential uses along Ave E (32nd to 47th Sts.)	First Dutch Reformed Church, Bayonne Truck House #1, PS #5 and Central Railroad of New Jersey, Main Line Historic District, Greenville Yard Historic District; Greenville Yard Piers; New Jersey Turnpike; Morris Canal
	Howland Hook	Same as alternative scenario Red.	Yes	Same as alternative scenario Red.				
	Red Hook/ North Brooklyn	Similar to Orange and Red scenarios with exception of developed area that is extended to include Piers 6 to 8 for general cargo.	Yes	Acquisition of 50 acres (Piers 6, 7, 8, and 12).	Columbia St. @ BQE Ramps; Atlantic Ave @ BQE Ramps	Same as alternative scenario Orange.	Residences along Columbia Street (from roughly Congress Street to Degraw Street) and Degraw Street (between Columbia Street and Van Brunt Street)	Fire Brick and Clay Retort Building
	South Brooklyn	Development of entire 80 acres into an auto terminal.	Yes	No land acquisition.		Same as alternative scenario Orange.	Residences located along 43rd Street (between 2nd and 3rd Avenues and I-278)	Bush Terminal; Sunset Park Historic District

* 85 acres have already been acquired at the Port Ivory site.

[1] The National Marine Fisheries Service (NMFS) has designated essential fish habitat for 13 managed finfish, 3 managed skate, 2 unmanaged finfish, 4 endangered sea turtles and 1 endangered finfish species as existing throughout the NY/NJ Harbor.

[2] Subtidal Wetlands include Littoral and/or Sublittoral Zones.

Notes:

1. Berth construction or reconstruction at all ports should avoid and minimize impacts to aquatic habitat.
2. Information on hazardous materials should be updated prior to construction.
3. Species identified by both New York and New Jersey may be found on the related port facility should suitable habitat exist.
4. NYSDEC and NJDEP lists should not be substituted for on-site surveys for TES and/or TES habitat.
5. The actual location of species provided by NYSDEC is considered sensitive and may not be released to the public without permission from the agency.
6. The term "regulated materials" includes any surface or subsurface materials that would be disturbed, handled, re-used, or removed from a Port site in the course of development/redevelopment that are governed by specific regulations.
7. "Regulated materials" include hazardous materials, petroleum-contaminated materials (non-hazardous), construction and demolition debris, asbestos-containing materials, lead-based paint waste, and other such materials governed by federal, state, or local regulations.

TABLE 5-7: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO YELLOW (PAGE 2 OF 2)

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues: On- and off-site Hazardous and Regulated Materials	Nearby Open Space Resources	On- and off- Site Protected Species and Special Habitats	Water Quality	On- and off-site Aquatic Habitats	Environmental Justice Populations
Yellow	Port Newark North	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.					
	Port Newark South	Similar to alternative scenario Orange except with larger container terminal and smaller auto terminal.	Yes	Same as alternative scenario Orange.					
	Port Elizabeth	Retention of existing arrangement of container terminals	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NJDEP:** Black-crowned and yellow-crowned night-heron and colonial waterbird foraging habitats and peregrine falcon on site. Checkered white, savannah sparrow, upland sandpiper within ¼ mile of site. **USFWS:** Transient bald eagle in the vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE3 Standards		Disproportionate minority and low-income community within ½ mile: 58% Black/African American; 33% households and 35% individuals below poverty level
	Port Jersey	Similar to existing situation with development of intermodal rail facility along the northern edge of Port Jersey to serve both container and automobile terminals	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.	Russell Golding Park and Caven Point Recreation Facility	**NJDEP:** Black-crowned night heron and colonial waterbird foraging habitats on site. Constructed habitat for state and federally endangered tern on site. **USFWS:** Transient bald eagle in vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NJDEP Class SE2 Standards	Intertidal and Open Water/Subtidal[2] Wetlands. Wetland mitigation site. Impact 6 acres of Aquatic Habitat.	
	Bayonne Peninsula	Entire area designated for port use would be cleared of unwanted buildings/other infrastructure and developed into a container terminal; balance of available area (at western end) is developed into an automobile terminal.	Yes	New Jersey "Known Contaminated Sites" documented. Port soils and/or groundwater may be regulated materials for purposes of handling or disposal.		**NJDEP:** Black-crowned night heron and colonial waterbird foraging habitats on site. **USFWS:** transient bald eagle in vicinity of the site. **NMFS:** EFH and TES species.[1]	Conform to NJDEP Class SE2 Standards	Intertidal and Freshwater Wetlands. Impact 17 acres of Aquatic Habitat.	
	Howland Hook	Same as alternative scenario Red.	Yes	Same as alternative scenario Red					
	Red Hook/ North Brooklyn	Similar to alternative scenarios Orange and Red with exception of developed area that is extended to include Piers 6 to 8 for general cargo.	Yes	Spills of petroleum and hazardous materials documented. Current status of Port-wide soils and groundwater unknown. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NMFS:** EFH and TES species[1].	Conform to NYSDEC Class I Standards		
	South Brooklyn	Development of entire 80 acres into an auto terminal.	Yes	Spills of petroleum and hazardous materials documented. Current status of Port-wide soils and groundwater unknown. Limited soil investigation found petroleum contamination. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.		**NYSDEC:** Pied-billed Grebe on or in immediate vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NYSDEC Class I Standards		

* 85 acres have already been acquired at the Port Ivory site.

[1] The National Marine Fisheries Service (NMFS) has designated essential fish habitat for 13 managed finfish, 3 managed skate, 2 unmanaged finfish, 4 endangered sea turtles and 1 endangered finfish species as existing throughout the NY/NJ Harbor.

[2] Subtidal Wetlands include Littoral and/or Sublittoral Zones.

Notes:

1. Berth construction or reconstruction at all ports should avoid and minimize impacts to aquatic habitat.
2. Information on hazardous materials should be updated prior to construction.
3. Species identified by both New York and New Jersey may be found on the related port facility should suitable habitat exist.
4. NYSDEC and NJDEP lists should not be substituted for on-site surveys for TES and/or TES habitat.
5. The actual location of species provided by NYSDEC is considered sensitive and may not be released to the public without permission from the agency.
6. The term “regulated materials” includes any surface or subsurface materials that would be disturbed, handled, re-used, or removed from a Port site in the course of development/redevelopment that are governed by specific regulations.
7. “Regulated materials” include hazardous materials, petroleum-contaminated materials (non-hazardous), construction and demolition debris, asbestos-containing materials, lead-based paint waste, and other such materials governed by federal, state, or local regulations.

TABLE 5-8: POTENTIAL ENVIRONMENTAL CONCERNS/ISSUES WITH ALTERNATIVE SCENARIO BLUE

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues				
				Land Use / Right-of-Way Acquisition	Adjacent/Proximate Roadways	Regional Air Quality Issues	Nearby Noise-Sensitive Receptors	Nearby Cultural Resources
Blue	Port Newark North	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.				
	Port Newark South	Similar to alternative scenario Orange except with addition of general cargo on northern and eastern berths and most of central area is converted to auto terminal usage. Two liquid berths (provided in alternative scenarios Orange & Yellow) have been reduced to one.	Yes	Same as alternative scenario Orange.				
	Port Elizabeth	Same as alternative scenario Yellow.	Yes	Same as alternative scenario Yellow.				
	Port Jersey	Same as alternative scenario Yellow.	Yes	Same as alternative scenario Yellow.				
	Bayonne Peninsula	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.				
	Howland Hook	Same as alternative scenario Red.	Yes	Same as alternative scenario Red.				
	Red Hook/ North Brooklyn	Close Site	Not applicable					
	South Brooklyn	1) development of two container terminals at the South Brooklyn Marine Terminal extending south, adjacent to Military Terminal; 2) inclusion of rail terminal serving both container terminals and 3) public waterfront walkway.	Yes	Acquisition of 112 acres.	Gowanus Ramp @ 2nd Ave/39th St	Same as alternative scenario Orange.	Residences located along 43rd Street (between 2nd and 3rd Avenues and I-278)	Bush Terminal; Sunset Park Historic District

Scenario	Location	Proposed Action	Potential Impacts?	Environmental Concerns/Issues					
				On- and off-site Hazardous and Regulated Materials	Nearby Open Space Resources	On- and off- Site Protected Species and Special Habitats	Water Quality	On- and off-site Aquatic Habitats	Environmental Justice Populations
Blue	Port Newark North	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.					
	Port Newark South	Similar to alternative scenario Orange except with addition of general cargo on northern and eastern berths and most of central area is converted to auto terminal usage. Two liquid berths (provided in alternative scenarios Orange & Yellow) have been reduced to one.	Yes	Same as alternative scenario Orange.					
	Port Elizabeth	Same as alternative scenario Yellow.	Yes	Same as alternative scenario Yellow.					
	Port Jersey	Same as alternative scenario Yellow.	Yes	Same as alternative scenario Yellow.					
	Bayonne Peninsula	Same as alternative scenario Orange.	Yes	Same as alternative scenario Orange.					
	Howland Hook	Same as alternative scenario Red.	Yes	Same as alternative scenario Red.					
	Red Hook/ North Brooklyn	Close Site	Not applicable						
	South Brooklyn	1) development of two container terminals at the South Brooklyn Marine Terminal extending south, adjacent to Military Terminal; 2) inclusion of rail terminal serving both container terminals and 3) public waterfront walkway.	Yes	Spills of petroleum and hazardous materials documented. Current status of Port-wide soils and groundwater unknown. Limited soil investigation found petroleum contamination. Port soils and/or groundwater may be hazardous or regulated materials for purposes of handling or disposal.	Sunset Park; PS 1 Playground	**NYSDEC:** Pied-billed Grebe on or in immediate vicinity of the site. **NMFS:** EFH and TES species[1].	Conform to NYSDEC Class I Standards	Open Water/Subtidal[2] Wetlands. Impact 130 acres of Aquatic Habitat.	Disproportionate minority and low-income community within ½ mile: 71% Hispanic/Latino; 25% households and 27% individuals below poverty level

* 85 acres have already been acquired at the Port Ivory site.

[1] The National Marine Fisheries Service (NMFS) has designated essential fish habitat for 13 managed finfish, 3 managed skate, 2 unmanaged finfish, 4 endangered sea turtles and 1 endangered finfish species as existing throughout the NY/NJ Harbor.

[2] Subtidal Wetlands include Littoral and/or Sublittoral Zones.

Notes:

1. Berth construction or reconstruction at all ports should avoid and minimize impacts to aquatic habitat.
2. Information on hazardous materials should be updated prior to construction.
3. Species identified by both New York and New Jersey may be found on the related port facility should suitable habitat exist.
4. NYSDEC and NJDEP lists should not be substituted for on-site surveys for TES and/or TES habitat.
5. The actual location of species provided by NYSDEC is considered sensitive and may not be released to the public without permission from the agency.
6. The term "regulated materials" includes any surface or subsurface materials that would be disturbed, handled, re-used, or removed from a Port site in the course of development/redevelopment that are governed by specific regulations.
7. "Regulated materials" include hazardous materials, petroleum-contaminated materials (non-hazardous), construction and demolition debris, asbestos-containing materials, lead-based paint waste, and other such materials governed by federal, state, or local regulations.

TABLE 5-9: COMPARATIVE SUMMARY OF POTENTIAL PORT-WIDE IMPACTS, BY SCENARIO AND ENVIRONMENTAL FACTOR

SCENARIO	Acquisition (acres)	Nearby Roadways	$PM_{2.5}$	Noise Receptors	Historic Resources	Contaminated Sites	Open Space	Species/ Habitat	Aquatic Habitat (acres)	New Berths (acres)	EJ Population
ORANGE[1]	**368**	**6/7**	**7/7**	**7/7**	**7/7**	**7/7**	**3/7**	**7/7**	**84**		**3/7**
Port Newark North/South	—	√	√	√	√	√	—	√	—		√
Port Elizabeth	230	√	√	√	√	√	—	√	27		√
Port Jersey	—	√	√	√	√	√	√	√	20		—
Bayonne Peninsula	—	√	√	√	√	√	√	√	17		—
Howland Hook	118	√	√	√	√	√	√	√	20	**17**	√
Red Hook/North Brooklyn	20	√	√	√	√	√	—	√	—		—
South Brooklyn	—	—	√	√	√	√	—	√	—		—
RED[1]	**250**	**7/7**	**7/7**	**7/7**	**6/7**	**7/7**	**2/7**	**7/7**	**64**		**3/7**
Port Newark North/South	—	√	√	√	√	√	—	√	—		√
Port Elizabeth	230	√	√	√	√	√	—	√	27		√
Port Jersey	—	√	√	√	√	√	√	√	20		—
Bayonne Peninsula	—	√	√	√	√	√	—	√	17		—
Howland Hook	—	√	√	√	√	√	√	√	—	**17**	√
Red Hook/North Brooklyn	20	√	√	√	√	√	—	√	—		—
South Brooklyn	—	√	√	√	—	√	—	√	—		—
YELLOW[1]	**50**	**6/7**	**7/7**	**7/7**	**7/7**	**7/7**	**2/7**	**7/7**	**23**		**3/7**
Port Newark North/South	—	√	√	√	√	√	—	√	—		√
Port Elizabeth	—	√	√	√	√	√	—	√	—		√
Port Jersey	—	√	√	√	√	√	√	√	6		—
Bayonne Peninsula	—	√	√	√	√	√	—	√	17		—
Howland Hook	—	√	√	√	√	√	√	√	—	**17**	√
Red Hook/North Brooklyn	50	√	√	√	√	√	—	√	—		—
South Brooklyn	—	—	√	√	√	√	—	√	—		—
BLUE[1]	**112**	**6/6**	**6/6**	**6/6**	**6/6**	**6/6**	**4/6**	**6/6**	**153**		**4/6**
Port Newark North/South	—	√	√	√	√	√	—	√	—		√
Port Elizabeth	—	√	√	√	√	√	—	√	—		√
Port Jersey	—	√	√	√	√	√	√	√	6		—
Bayonne Peninsula	—	√	√	√	√	√	√	√	17		—
Howland Hook	—	√	√	√	√	√	√	√	—	**17**	√
Red Hook/North Brooklyn	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA
South Brooklyn	112	√	√	√	√	√	√	√	130		√

[1] Totals are shown in shaded areas.

Note: Fractions indicate how many of the total of 7 port sites included in the CPIP would be potentially impacted by a given scenario for each environmental factor. Water quality is not included in this summary table as water-quality impacts are not anticipated.

NA = Not applicable