3.0 EXISTING ENVIRONMENT AND POTENTIAL IMPACTS

3.1 PHYSICAL RESOURCES

This chapter describes the existing conditions for each resource category, including applicable statutes. Resources are described in terms commensurate with potential project impacts. For this reason, some resources are addressed in greater detail than others. This section describes the existing environment in terms of physical, biological, and socio-economic resources and the anticipated direct impacts of the proposed action alternatives. Direct impacts are those that can be attributed to construction of the proposed action alternatives identified in *Section 2.0*. Impacts associated with the operation of the proposed action alternatives are not anticipated to be significant compared to pre-disaster conditions and are not addressed by this PEA. Only construction-related impacts are addressed below and are anticipated to be similar in nature and scope for each project alternative.

On Tuesday, September 11, 2001, multiple terrorist attacks occurred in the United States. Two hijacked airplanes crashed into the World Trade Center (WTC) in New York City. In the aftermath, the North and South towers of the World Trade Center collapsed, causing massive loss of life and generating approximately 1.6 million cubic yards of debris.

In the aftermath of the attack, Buildings 1, 2, and 7 of the WTC collapsed, Buildings 4, 5 and 6 of the WTC partially collapsed, as well as Building 3 (i.e., the Marriott World Trade Center Hotel). Other buildings surrounding the WTC Complex, including the #1 Liberty Plaza, the American Express Building, the U.S. Customs House, East River Savings Bank, the NJ Kallikow Financial Center, South Bridge, St. Nicholas Greek Orthodox Church, 90 West Wall Street, and Bankers Trust, sustained major damage, as did residential, commercial, and public properties in the vicinity. *Figure 3-1* identifies building status as at the end of September 2001 and the area of impact to assist with the identification of proposed projects and alternatives.

Table 3-1

WTC Disaster Building Status September 2001			
Identification No.	**Building Name**	**FDNY Sector**	**Condition**
1	WTC North Tower	West	Destroyed
2	WTC South Tower	Liberty/Church	Destroyed
3	WTC Marriott Hotel	Liberty	Partial Collapse
4	WTC SE Plaza Bldg. (a.k.a. Commodities Exchange)	Church	Partial Collapse
5	WTC NE Plaza Bldg.	Vesey	Partial Collapse

Table 3-1 (continued)

WTC Disaster Building Status September 2001			
Identification No.	**Building Name**	**FDNY Sector**	**Condition**
6	WTC Custom House	West	Major Structural Damage
7	WTC Tishman Center	West	Destroyed
8	North Bridge	West	
9	1 Liberty Plaza	Church	Major Damage
10	Millenium Hotel	Vesey	Damaged/Repairable
11	East River Savings Bank	Vesey/Church	Damaged/Repairable
12	Federal Building/Post Office	Vesey	Damaged/Repairable
13	N.Y. Telephone Co.	West	Major Structural Damage
14	WFC Amex & Lehman Bros.	West	Major Structural Damage
15	WFC Merrill Lynch/Winter Garden	Liberty	Major Structural Damage
16	South Bridge	Liberty	Damaged
17	WFC Dow Jones Oppenheimer	Liberty	Damaged/Repairable
18	St. Nicholas Greek Orthodox Church	Liberty	• Destroyed
19	90 West Street	Liberty	Damaged/Repairable
20	Bankers Trust	Church	Major Structural Damage

The NYC financial district and the stock market were closed for approximately one week following the WTC disaster and over 13,000 businesses have been directly impacted. Consolidated Edison ("ConEd") Substation in lower Manhattan was destroyed and four electric networks in lower Manhattan were shutdown. The natural gas distribution system in lower Manhattan was shutdown for at least a week after the disaster and Verizon lost service from the Operations Center at 140 West Street which affected 200,000 telephone cable lines, mostly in the financial district (Wall Street). George Washington Bridge was closed eastbound and Interstate 95 (I-95) traffic was disrupted for several weeks following the disaster. All bridges and tunnels in lower Manhattan were initially closed except to emergency vehicles. The Holland Tunnel was closed until October 8, 2001; this restricted access to I-78. Twelve New York City public and private schools in the area south of 14th Street were closed for at least a week following the disaster and one fire station was destroyed. Battery Park City, a 92-acre upscale residential and commercial development west of the WTC site along the Hudson River,

was severely affected; after several months, some residents have not returned to their homes. Four area post office stations, on Bowling Green, Wall Street, Church Street, and Peck Slip, were closed (FEMA Situation Report #5 and #14).

3.1.1 TOPOGRAPHY, GEOLOGY, AND SOILS

The WTC site is located in New York County, New York on the Jersey City N.J. – N.Y. 7.5 minute topographic quadrangle map (U.S. Geological Survey [USGS], 1981). The WTC impact area covers approximately 16 acres. The ground surface elevation in the vicinity of the WTC ranges from less than 10 feet near the shore to 30 feet above sea level, National Geodetic Vertical Datum (NGVD) (*Figure 3-2*).

The New York City area is underlain by a sequence of Proterozoic to lower Paleozoic crystalline rocks, consisting of schist, gneiss, and marble (highly metamorphosed sedimentary and igneous rocks). In the lower Manhattan area, bedrock is encountered at least 50 feet below ground surface and typically is described as schist. Ridges of erosion-resistant schist and shallow valleys of weaker marble trend north-northeast in lower Manhattan. The topography of the WTC area has been extensively altered by urban development and much of the soil covering the area is actually fill material. The WTC area is almost entirely developed, except in parks and other open spaces. Major surface water features are the Hudson River and the East River, which is a tidal strait between Long Island Sound and the New York Harbor. Battery Park City is a built-up area along the Hudson River created from the fill material ("landfilled") generated during the construction of the WTC complex (*Figure 3-2*). Substantial sections in lower Manhattan have been graded, filled and landscaped. Soil boring logs in the area of the WTC maintained by the New York City Department of Design and Construction (NYCDDC) were examined to determine the depth of fill and shallow groundwater elevations. Fill materials, including clay, silt sand, and gravel deposits as well as bricks, wood, glass and concrete, range in thickness from 40 to 70 feet (NYCDDC 2001).

There is an underground retaining wall (slurry wall) beneath the WTC site that was constructed in the 1960s to prevent the flooding from the Hudson River and shallow groundwater. This retaining wall is 3,000 feet in circumference and extends down to bedrock, 60 to 70 feet below ground level. The retaining wall was supported from the inside by the concrete floors of the WTC's six-level basement, large portions of which were destroyed. Approximately 40 of the anchors, each consisting of 18 steel cables wrapped together and driven into bedrock, have been constructed along the southern edge of the WTC site near Liberty Street, in an area that was immediately compromised as a result of the collapse of the WTC. As many as 1,100 of the anchors, known as tiebacks, will eventually be connected to the retaining wall. The retaining wall, nicknamed the bathtub, was built to lend stability to the soil around the WTC site and keep groundwater from flooding the area (*The New York Times* 2001a).

The New York City area is characterized by little seismic activity. The faults mapped in the city appear to be related to ancient mountain building and plate tectonic events of the Paleozoic Era (greater than 225 million years before present). An earthquake with a

magnitude of 5.3 occurred on August 10, 1884 at Rockaway Beach, Queens (GSA 1998). This earthquake was the largest recorded in the New York metropolitan area and was felt throughout most of the northeastern United States. There are faults in the WTC area and there is a history of low magnitude earthquakes. Combine these factors with high-density and multi-story structures and there is a moderate risk of earthquake damage to the region.

During earthquake or seismic activity, the liquefaction of soils would be expected to amplify damage in the areas of fill or "weaker" soils, especially landfill areas such as Battery Park City, as indicated by the New York City Consortium for Earthquake Loss Mitigation. Soils in the project area of lower Manhattan are weaker soils that may be subject to liquifaction during earthquake events (NYCEM 2000).

A soil survey of Manhattan has not been performed; however, soils at the WTC would likely be mapped as the Made Land soil map unit. This unit consists of areas of cuts and fills and areas covered almost entirely with streets and buildings in an urban environment. Cuts are of various depths, and the fill material consists of various materials, including materials that are not classified as "soil." Based on an analysis of available soil boring logs, fill material in the vicinity of the WTC ranges in thickness from 40 to 60 feet (NYCDDC 2001).

Environmental Impacts

Since fill material in the vicinity of the WTC consists of various materials including bricks, rock and timber, there is a potential for planned excavation activities to encounter buried construction and other types of debris. In lieu of subsurface testing, specific management practices to address buried debris that may be uncovered during construction may be required by the applicant or responsible party to avoid or minimize delays in the schedule and to protect human health and the environment.

Construction and demolition activities for any of the proposed alternatives would not affect soil characteristics, but may cause the top layers to mix. These activities may also temporarily increase soil erosion. Construction activities that affect 5 acres would require preparation of a Notice of Intent (NOI) under the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit for Construction Activities. The requirements of the NOI include the preparation and implementation of a Stormwater Pollution Prevention Plan (PPP). This PPP must include erosion and sediment controls, including interim and permanent stabilization practices. Recommended methods of erosion control include the use of silt fences, hay bales, check dams, and temporary vegetation or straw cover. In addition, the NPDES permit would require that, during construction, the responsible party immediately report to the National Response Center any spills of regulated hazardous substances that are equal to or exceed the Reportable Quantity levels listed in 40 CFR 110, 117, and 302. The responsible party would also be required to submit a written description of the spill to the EPA Regional Office, would be responsible for any required cleanup, and would be required to modify the Stormwater PPP to document these steps. The responsible party would be required to comply with all

applicable federal, state, and local laws and regulations related to the prevention and mitigation of accidental spills of hazardous substances to the extent practicable (33 USC 1251 *et seq.*; 42 USC 9601 *et seq.*; 42 USC 6901 *et seq*). Additionally, construction activities disturbing 1 to 5 acres are now covered by the NPDES – Regulations for Revision of the Water Pollution Control Program Addressing Stormwater Discharges (Phase II Stormwater Regulations – *Federal Register*, Volume 64, No. 235, Wednesday, December 8, 1999, pages 68722 – 68770). Deadlines were established for completion of both the NPDES permitting authority's and the responsible party's program responsibilities. These requirements are outlined in *Exhibit 2*, page 68738, of the December 8, 1999 *Federal Register*. The permit application deadline for stormwater discharges associated with small project (1 to 5 acres) construction activities was established as 3 years and 90 days from the final rule date, or March 7, 2003. Specific permit requirements and conditions will be followed by the responsible entity.

Before construction proposed under any of the action alternatives described, soil erosion management activities would be performed by the responsible party. The NPDES permit for construction would be obtained and the Stormwater PPP would specify soil erosion control requirements. In addition, development of an Erosion and Sedimentation (E&S) plan prior to construction, and implementation of Best Management Practices (BMPs) and E&S mandates during construction would reduce the potential for soil erosion during construction. The responsible party would be required to follow all federal, state, and local environmental laws and regulations pertaining to spill management, control, and reporting during construction. For these reasons, no significant impacts related to geology or soils are anticipated for any of the action alternatives proposed. Impacts to the project during construction may be caused by the presence of the man-made soils. The potential impacts related to excavating in fill material of unknown composition and strength would be mitigated during project planning by identification of these areas of concern and prior sampling if required. The responsible party would be required to conform to all OSHA health and safety standards, and requirements during excavation and shoring and stabilization measures would be implemented, as needed based on contractor specifications. Health and safety monitoring may also need to occur to identify potentially hazardous safety conditions to avoid exposures or releases to the environment.

New York City (NYC) building codes were designed to control seismic risks in accordance with the Seismic Retrofit Executive Order 12699. National Fire Protection Association (NFPA) supports the adoption proposed by FEMA of seismic provisions contained in the American Society of Civil Engineers (ASCE) standard, ASCE-7, *Minimum Design Loads for Buildings and Other Structures*. NFPA 5000, *Building Code*™ –will be the first building code developed through an American National Standards Institute (ANSI)-accredited consensus process. NYC building codes will directly reference the seismic provisions contained in the latest edition of the ASCE standard. Since new construction would comply with NYC building codes, no impact related to earthquake hazards is expected for any of the proposed projects.

During WTC repair or restoration activities, the construction contractor would need to make provisions for excavation shoring or stabilization necessary to prevent collapse or slumping of excavation walls during construction. To avoid potential impacts to unique geological resources, relevant NYC plans would need to be consulted. Potential risks associated with geohazards can normally be reduced to acceptable levels via proper design developed by the responsible party or applicant. Appropriate geotechnical studies and engineering design would be used by the responsible party to design earthquake resistant facilities to mitigate liquefaction and other seismic hazards to acceptable levels, especially in the Battery Park City area.

The construction, repair or renovation of the damaged subway system would result in extensive excavation activities. The soil characteristics and local geology would influence the tunnel construction methods and excavation stabilization methods. These effects would be considered during project planning and any limitations would be overcome during the design phase. Soil borings and geotechnical testing for parameters of soil strength and cohesion measurements would be collected and this information will be incorporated into subway design. Earthquake frequency and strength data would be incorporated into subway design in accordance with building codes. No significant impact to soils or geology would be expected as a result of repair, construction or operation of the damaged subway system.

3.1.2 CLIMATE AND AIR QUALITY

The climate of New York City is defined as coastal maritime with hot summers and cold stormy winters. The annual mean temperature is 54.6 degrees Fahrenheit (°F). The lowest recorded daily minimum temperature was -3° F and this occurred in January 1994. The highest recorded daily maximum temperature, 107° F, which occurred in July 1966. Weather conditions are variable in the fall and winter with a series of storms producing strong winds; weather conditions are more stable in the summer. The lowest monthly average temperature, 32.3° F, occurs in January. The highest monthly average temperature is 75.4° F and this temperature occurs in July and August. The annual average precipitation is 42.7 inches, and the annual average snowfall is 25.4 inches. As shown below, prevailing winds in the fall and winter months tend to be out of the northwest, although strong northeasterly winds are not uncommon. Northeasterly storms last two to three days and may produce severe conditions with high winds, cold rain or snow with flooding possible along the coast. Prevailing winds in the summer are southerly and occur 9 percent of the time (*Figure 3-3*). In November and December, wind dispersion mechanisms are at the lowest level and atmospheric conditions are stagnant. The area experiences considerable rainfall throughout the year with a slight decrease in total precipitation during the winter months of the year. Mean monthly precipitation ranges from 3 to 4.5 inches.

Table 3-2

Summary of Dominant Wind Direction, Average Speed, and PGU in New York (LaGuardia) by Month			
January - April	**May to August**	**September**	**October – December**
Direction: NW	Direction: South	Direction: NE	Direction: WNW-NW
Average Speed: 14 mph	Average Speed: 11 mph	Average Speed: 11 mph	Average Speed: 13 mph
Average PGU: 63	Average PGU: 58	Average PGU: 64	Average PGU: 72
Source: National Weather Service			

The U.S. Environmental Protection Agency establishes National Ambient Air Quality Standards (NAAQS) for the protection of public health and welfare. Six pollutants have been identified by the U.S. Environmental Protection Agency as being of national concern: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) less than 10 microns in diameter (PM_{10}), sulfur dioxide (SO_2), and lead (Pb). With the removal of lead from gasoline, the primary pollutant emissions from automobiles are CO, hydrocarbons (HC), and nitrogen oxides (NO_x). Concentrations of NO_x are influenced by both mobile and stationary sources, while levels of inhalable PM_{10} and SO_2 are directly associated with stationary sources.

In New York, the Division of Air Resources (DAR) of the New York Department of Environmental Conservation (NYDEC) is responsible for carrying out both the federal and state regulations for controlling air pollution. These regulations can be found at Parts 200-317, Chapter III, Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York. The New York State and NAAQS for criteria pollutants are the same. Under New York law, permits are required for facilities that emit pollutants into the air. The DAR is responsible for issuing both federal and state permits. The project site is located in the New York-New Jersey-Connecticut Air Quality Control Region (AQCR) and within the Metropolitan Air Quality Control Region of DEC Region 2 for air quality monitoring purposes.

All of the New York City metropolitan area is designated NAAQS non-attainment for the pollutant ozone; in addition, Manhattan is designated NAAQS non-attainment for the pollutants CO and PM_{10} (a.k.a., "inhalable PM").

The contaminants NO_x and volatile organic compounds (VOCs) combine to form ozone. Elevated ozone levels are often found many miles downwind of the source of these precursor pollutants. Transportation and construction projects can affect levels of VOCs and NO_x pollutants by changing and increasing automobile, truck, and construction equipment use. Contaminants that would be generated during construction of any of the proposed alternatives would likely include hydrocarbons (VOCs), PM, and CO.

Particulate matter is emitted into the atmosphere from a variety of sources: industrial facilities, power plants, oil burners, construction work, and similar activities. Diesel-powered vehicles, especially heavy trucks and buses do emit particulates; particulate concentrations may therefore be locally elevated near roadways with high volumes of heavy diesel-powered vehicles. Projects involving construction or demolition may increase the level of air pollutants and may adversely affect air quality.

Sources of air emissions are subject to emission standards and design requirements based on the location of the proposed source, potential quantity of emissions and types of emissions. Federal, state and local regulations potentially governing the construction of the proposed projects include the following:

- National and New York Ambient Air Quality Standards (NAAQS and NYAAQS)
- New York State Air Toxic Emission Guidelines
- Air Conformity (40 CFR Part 93)
- New York City Air Pollution Control Code requirements

Environmental Impacts

There may be short-term air impacts during facility (buildings, utilities, bridges, parks, subways and walkways) repair, renovation, replacement, construction, tunneling, and demolition activities. The potential air emission sources during construction and demolition activities could include front-end loaders, trucks, and other predominately diesel-powered construction equipment. Since Lower Manhattan is classified as a severe *non-attainment* area for ozone and particulate matter, proposed federal actions must show conformity to the State Implementation Plan (SIP) before they can be implemented. The action proposed in this PEA would need to produce less than the *de minimis* level of 25 tons per year (TPY) for each of the ozone precursors: NO_x and VOCs—to avoid a conformity determination. For all pollutants, an exceedance of the NAAQS constitutes a significant impact. In addition to the NAAQS, New York City has developed *de minimis* criteria to assess the significance of impacts on air quality that would result from proposed projects or actions being evaluated by the New York City Environmental Quality Review (CEQR).

Emissions produced during construction would consist of exhaust emissions from construction-related equipment and dust generated during soil disturbing activities. Typical pollutants emitted in the exhaust of construction equipment include CO, NO_x, SO_2, particulate matter (PM, PM_{10}) and VOCs. Dust generated during construction may consist of particles primarily larger than PM_{10}; however, some dust may consist of particles smaller than PM_{10}. Mobile source emissions associated with traffic are not anticipated to increase during construction. Mobile and stationary sources of air emissions related to the construction period may affect air quality and compliance with the SIP. A Conformity Determination would be required under 40 CFR Part 93.153 if the anticipated air emissions during construction and operation are greater than 25 tons per year.

The NYMTC recently approved a Transportation Improvement Project (TIP) covering October 1, 2001 through September 30, 2004. Without relief from transportation conformity requirements and metropolitan planning requirements, New York is locked into the transportation priorities that were set prior to September 11, 2001. NYMTC cannot delay a pre-disaster prior non-exempt project and substitute another non-exempt project that would better address transportation needs without voiding the current conformity determination. In effect, the $20 billion, five-year transportation program is locked into a pre-disaster condition. Furthermore, the conformity analysis for the new TIP expires on September 30, 2002. Since the NYMTC will not be able to update the conformity analyses in the coming year, as planned, conformity will lapse on October 1, 2002. After that time, only exempt projects, projects that have no impact on air quality, can move forward. There are in excess of $1 billion in non-exempt highway and transit projects in the NYMTC region in fiscal year (FY) 03 and FY 04 that would not progress during a conformity lapse. As a result, Senator Clinton has introduced legislation to grant New York a three-year extension to meet transportation conformity and transportation planning requirements of the SIP (Legislative Amendment 2001). The draft legislation states that Section 176(c) of the Clean Air Act would be further amended by adding the following statement:

- "(7) Beginning October 1, 2002, paragraph (4)(B)(ii) suspended for the New York State portion of the New York-Northern New Jersey – Long Island Severe Ozone Nonattainment Area until October 1, 2005 for all criteria pollutants with respect to transportation plans, transportation improvement programs, and projects funded or approved by the Federal Highway Administration or the Federal Transit Administration. Notwithstanding the provisions of Title 23 USC 134(h)(1)(D) and 134(h)(2)(A), from October 2, 2002 to October 1, 2005, the area's current plan adopted September 30, 1999, and current Transportation Improvement Plan (TIP) adopted October 1, 2001, will remain viable. From now until October 1, 2005, exempt projects may be added to this plan and TIP. Any transportation projects necessary as a result of the disruption caused by the terrorist attack on lower Manhattan of September 11, 2001, may also be considered exempt projects, as decided through interagency coordination. The consideration of air quality impacts of Putnam county as they relate to conformity determinations made by the Poughkeepsie and Newburgh Metropolitan Planning Organizations (MPOs) shall be determined through interagency consultation."

The provisions would grant a waiver from the CAA transportation conformity requirements and selected Metropolitan Planning requirements of (TEA)-21 through September 2005, for areas under the planning jurisdiction of the New York Metropolitan Transportation Council (NYMTC), the Metropolitan Planning Organization (MPO) for New York City, Long Island, and the lower Hudson Valley.

Construction-related impacts would include temporary increases in dust emissions in the immediate vicinity of construction sites. Fugitive dust from construction and demolition can be prevented from becoming airborne through adherence to local ordinances and implementation of dust control measures such as watering disturbed areas, maintaining and

covering dirt piles, scheduling the siting of staging areas to minimize fugitive dust, and keeping construction vehicles properly maintained. The use of dust control systems will likely be a critical element throughout this project to meet the NYSDEC goals of "zero dust emissions" and to minimize the potential for unnecessary worker exposure to airborne substances. To mitigate for the foregoing impacts, the implementation of the following measures would be required of the applicant or responsible party:

- Use of water to control dust generated by the demolition of existing buildings or structures and by construction operations and during the clearing and grading of land
- Application of water to dirt paths, gravel roads, materials, stockpiles, and other surfaces that can produce airborne dust over extended periods
- Use of low-sulfur containing fuel for diesel engines to control or minimize sulfur emissions
- Use of retrofitted or construction vehicles or equipment with emission control devices
- Periodic street-sweeping and/or wetting down of paved roadway surfaces
- Conformance to permits restricting hours of operation
- General avoidance of construction-related traffic in the vicinity of area schools, hospitals, day care centers, and other sensitive receptors, and
- Construction equipment will be maintained and operated in accordance with manufacturer's recommendations

Construction machinery exhaust emissions are estimated to be of relatively short duration and of moderate intensity. Since construction equipment and activities are required to meet state and local standards pertaining to air pollution control, and the requirements listed above, pollutants emitted to the air directly or indirectly from the proposed construction activities would not significantly impact the ambient air quality of the region and would not jeopardize compliance with state and federal ambient air quality standards. Over the long-term, there would be no significant increase in air emissions associated with transportation from the implementation of the proposed action, assuming that transportation would resume comparable to pre-disaster conditions.

3.1.3 WATER RESOURCES

The portion of the Hudson River adjacent to the shoreline perimeter of the WTC is considered part of the Lower Hudson Reach, which extends for 19 miles Yonkers to the tip of Manhattan (Hart and Milliken 1992). The Hudson River, in its entirety, flows approximately 315 miles from its upstate source in the Adirondack Mountains to the Battery at the southern tip of Manhattan. The portion of the Hudson River along the Manhattan shoreline is highly saline with salinity approaching 30 parts per thousand. From River Mile 0 (at the Battery) north along the Manhattan shoreline the Hudson River is fairly narrow with an average width of about 1,500 feet (ft) and an average depth of about 40 feet. The Hudson River is tidally influenced for 150 miles from The Battery to the Troy Dam near Albany, New York. Tides occur two times a day with a range of approximately 4 to 5 feet (NOAA 2002).

The Hudson River is part of New York-New Jersey Harbor Estuary (a designated Estuary under the federal Clean Water Act Amendments of 1987). The New York-New Jersey Harbor Estuary includes waters of New York Harbor and the tidally influenced tributaries. The core area includes the New York and New Jersey shared waterways of the Hudson River, Upper and Lower Bay, Arthur Kill (a Dutch word meaning stream), Kill van Kull, and Raritan Bay (the latter three are located in Staten Island and New Jersey). New York waterways include the East and Harlem Rivers and Jamaica Bay, New Jersey waterways include the Hackensack, Passaic, Raritan, Shrewsbury, Navesink, and Rahway Rivers, and Newark and Sandy Hook Bays (*Figure 1-1*) (CCMP 1996).

Activities in and discharges to surface waters are controlled by federal, state, and local agencies through a number of permits and approvals, reflecting legislation and regulations promulgated at all levels of government. The State of New York classifies water quality for its surface water resources; issues permits for discharge to state waters; identifies and protects wild, scenic, and recreational waters; and oversees the state's coastal zone management program. At the federal level, a number of programs address activities in navigable waters and protect the environment of those waters. New York City regulates discharges to its sewer system, which then discharges to surface water bodies under the aegis of New York State.

The federal Clean Water Act establishes objectives to provide "fishable and swimable waters for the enjoyment of all." To this end, the NYSDEC has a system of use classifications and discharge standards as defined under 6 NYCRR Part 701. Use classifications are assigned to the state's water bodies to set attainment goals, but do not necessarily indicate existing water quality conditions. The WTC is adjacent to the Hudson River within the lower Hudson River basin, Segment NY-1301-0006-1998. This segment has been classified as Class I, which is suitable for secondary contact recreation (i.e., fishing and boating). Priority organics in contaminated sediment are identified as areas of concern and the designated use is fish consumption.

Article 15, Section 15-2701 of the New York State Environmental Conservation Law (ECL), the Wild, Scenic, and Recreational Rivers System, authorizes the NYSDEC to protect the outstanding natural, scenic, historic, ecological, and recreational resources of certain designated river corridors. The implementing regulations are set forth in 6 NYCRR Part 666. The Hudson River has not been classified as a wild and scenic river, and no permits related to Article 15, Section 15-2701 are necessary. The New York State Department of State, Division of Coastal Resources, has developed a map showing significant coastal fish and wildlife resources (*Figure 3-4*).

According to the year 2001 annual report for New York New York Harbor, water quality continues to improve in New York Harbor for parameters measured including lowered fecal coliform levels and higher dissolved oxygen levels. Sampling data indicate a resurgence of micro- and macro-aquatic organisms. While water quality has improved dramatically in the twenty years since passage of the Clean Water Act, impairments remain in the Harbor/Bight (CCMP 1996). Health advisories are in effect to avoid or severely limit consumption of certain species including striped bass, eel, blue claw crabs,