

Permitting

A variety of state and federal permits and authorizations would be required to repair the bulkhead, rehabilitate existing structures, and construct new buildings on the Belford Seafood Co-op and the Seaport Associates Inc. sites. New Jersey protects coastal waters and the land adjacent to them under a variety of laws, including the Waterfront Development Act (N.J.S.A. 12:5-3), the Coastal Area Facility Review Act (CAFRA) (N.J.S.A. 13:19), and the Wetlands Act of 1970 (N.J.S.A. 13:9A). The New Jersey Department of Environmental Protection (DEP) applies the New Jersey Coastal Permit Program Rules (N.J.A.C. 7:7) and the Coastal Zone Management Rules (N.J.A.C. 7:7E) to regulate development. NJDEP also regulates freshwater wetlands under the recently revised (10/6/08) Freshwater Wetlands protection Act Rules (N.J.A.C. 7:7A). Construction within a flood hazard area would be subject to the recently revised Flood Hazard Area Control Act Rules at N.J.A.C. 7:13.

Other state permits or certifications that may be required for the proposed project include a New Jersey Pollutant Discharge Elimination System permit, New Jersey Soil Erosion and Sediment Control Act Permit, Water Quality Certification; and Coastal Zone Consistency Determination under the Coastal Zone Management Rules (N.J.A.C.7:7E). Section 10 of the Rivers and Harbors Act of 1899 requires approval prior to the accomplishment of any

work in or over navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into the waters of the United States, including wetlands.

Coastal Area Facility Review Act (CAFRA)

The CAFRA law regulates almost all development activities involved in residential, commercial, or industrial development, including construction, relocation, and enlargement of buildings or structures; and all related work, such as excavation, grading, shore protection structures, and site preparation within the CAFRA zone. The Belford Seafood Co-op and the adjacent Seaport Associates Inc. properties are located within the zone regulated by CAFRA.

Waterfront Development Law

The Waterfront Development Law seeks to limit problems that new development could cause for existing navigation channels, marinas, moorings, other existing uses, and the environment. Any proposed development in a tidally flowed waterway anywhere in New Jersey requires a Waterfront Development Permit. Examples of projects that need a Waterfront Development Permit include docks, piers, pilings, bulkheads, marinas, bridges, pipelines, cables, and dredging. Under any development scenario, the bulkheads of the Belford Seafood Co-op and the adjacent Seaport Associates Inc. properties will need to be rebuilt. The Water-

front Development Program exempts the repair, replacement or reconstruction of some legally existing docks, piers, bulkheads and buildings, if the structure existed before 1978 and if other conditions are met. There are also exemptions for some structures located more than 100 feet from the high tide line.

Wetlands Act of 1970

The land immediately adjacent to tidal waters often contains coastal wetlands, which are vital coastal resources serving as habitat for many creatures. Coastal wetlands also serve as buffers that protect upland areas from the flooding and damage caused by storms. The Wetlands Act of 1970 requires the DEP to regulate development in coastal wetlands. A coastal wetlands permit is required in order to excavate, dredge, fill or place a structure on any coastal wetland shown on the wetland mapping of 1970 or as shown on the NJDEP GIS coverages. While the Belford Seafood Co-op and the adjacent Seaport Associates Inc. properties are adjacent to the tidal water bodies of Raritan Bay and Compton's Creek, they are entirely bulkheaded, and may contain existing or historic coastal wetlands.

Freshwater Wetlands Protection Act Rules

There appears to be at least one small, isolated freshwater wetland on the Seaport Associates property which has formed in a low-lying area since the fish plant was demolished. Freshwater wetlands are regulated by NJDEP, as well as the associated transition area. It is likely that these wetlands may be considered non-

tributary (isolated) wetlands. The size and character of any freshwater wetlands potentially present on the site would need to be determined and verified by NJDEP prior to seeking permits authorizing impacts to them or the associated transition area. As these freshwater wetlands are likely under ½ acre in area, temporary or permanent impacts to them may qualify for use of a General Permit No. 6 – Non-Tributary Wetlands. Impacts to these wetlands would need to be mitigated for through the implementation of an approved compensatory wetland mitigation plan. Compensatory mitigation could include the purchase of credits from a wetland mitigation bank, monetary donation to an approved in-lieu fee organization, or the completion of permittee-responsible mitigation, which could be carried out on- or off-site. As impacts to freshwater wetlands would likely be less than 5 acres in area, no federal wetland permits would be required.

Coastal Zone Management Act

Any new facilities at either property would need to demonstrate concurrence with New Jersey's Coastal Management Program. The Coastal Zone Management Act of 1972 (16 U.S.C. §§1451-1464) was enacted by Congress to balance the competing demands of growth and development with the need to protect coastal resources. Its stated purpose is to "preserve, protect, develop and, where possible, to restore or enhance, the resources of the nation's coastal zone..." New Jersey's Rules on Coastal Zone Management are employed by the state's Division of Land Use Regulation in

the review of permit applications and coastal decision-making; they address issues of location, use, and resources. New Jersey's rules provide for a balancing between economic development and coastal resource protection, recognizing that coastal management involves explicit consideration of a broad range of concerns, in contrast to other resource management programs which have a more limited scope of concern.

Other State-issued Permits and Authorizations

Flood Hazard Area

Based on a review of the FEMA Flood Insurance Rate Map for Compton Creek and its vicinity, nearly the entire area lies within the 100-year floodplain. Based on the extent (and FEMA designations) of the floodplains in this area, the consistent flood elevations, and the site's close proximity to the tidal Raritan/Sandy Hook Bay, it can be determined from the map that the site is located within a tidal flood hazard area, and would be subject to the recently revised Flood Hazard Area Control Act Rules at N.J.A.C. 7:13 (adopted on November 5, 2007). As the project area lies within the CAFRA review area, the Flood Hazard Area Control Act Rules would likely be implemented via a CAFRA permit.

As per N.J.A.C. 7:13-10.4(d)1, projects within tidal flood hazard areas are not subject to the flood storage volume displacement limits of the Flood Hazard Area Control Act Rules,



Figure 7.2: Study area waterfront



Figure 7.3: Environmental conservation and minimal development impact are central themes of the plan

provided that it can be demonstrated that the tidal flood governs in the area. Therefore, the 0% "Net Fill" requirements within the Flood Fringe (i.e., the area between the Floodway and the Regulatory Floodplain limits) would not apply to this project, based on the reasoning that flooding in these areas is governed by the

Atlantic Ocean storm surge, and the loss of flood storage volume associated with fill in these areas would be negligible in comparison to the expanse of the tidally influenced floodplain.

Fill within the Floodway (Compton's Creek) is prohibited, with the exception of bridge/culvert structures, and any fill or new/modified structures along Compton Creek or other waterways in the area may still need to be evaluated in a hydraulic backwater analysis.

It is important to note that although Flood Fringe fill may be allowed in tidal flood hazard areas, additional requirements may need to be satisfied. For example, as per N.J.A.C. 7:13-11.3, the project must ensure that the overland flow of stormwater is not impeded and floodwaters can freely enter and exit the disturbed area. As another example, the Rules at N.J.A.C. 7:13-4.1 provide for Riparian buffers along each waterway, wherein disturbance of vegetation above specified amounts requires mitigation. Compliance with all applicable provisions of the Flood Hazard Area Control Act Rules will be required.

Water Quality

The New Jersey Pollutant Discharge Elimination System (NJPDDES) permitting program regulates and issues permits for the discharge of pollutants to surface and ground waters of the State, pursuant to the State and Federal Acts, except for those activities specifically prohibited or exempted pursuant to N.J.A.C. 7:14A-2.4(d) and 2.5, respectively. A NJPDDES

permit is specifically required for discharges from aquaculture projects, and would likely be required for a commercial-scale live fish holding facility.

Under Section 401 of the Clean Water Act, a Water Quality Certificate from the NJDEP (N.J.S.A. 58:10A-5) would be required for any discharge to surface waters during construction activities. Dredging in conjunction with bulkhead replacement would constitute such a discharge.

Construction of building foundations, roads, bulkheads etc. requires the excavation of soils and existing concrete decking, pilings etc. To ensure that erosion and transport of sediment to local waters is avoided and minimized, a New Jersey Soil Erosion and Sediment Control Act Permit would be required.

Federal Permits

Dredging/filling in conjunction with bulkhead replacement would also require a Section 404/Section 10 Permit from the U.S. Army Corps of Engineers (USACE). Section 10 of the Rivers and Harbors Act of 1899 requires approval prior to the accomplishment of any work in or over navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into the waters of the United States, including wetlands. Due to the severely deteriorated condition of the bulkhead, and its relatively long length, individual permits are likely to be re-

quired for bulkhead work on the two properties.

Threatened and Endangered Species

To determine whether any federally listed or candidate species may occur in the project area, the U.S. Fish and Wildlife Service's (USFWS) *Federally Listed and Candidate Species Occurrences in New Jersey by County and Municipality* (June 2008) was reviewed. This document lists the piping plover and seabeach amaranth, both federally threatened species, as potentially occurring in Middletown Township. If a proposed project is located in a municipality with extant, historic, or potential occurrence of a federally listed species, USFWS recommends that the habitat requirements of each species that may occur in that municipality be reviewed to evaluate whether the project's impact area contains potentially suitable habitat for any federally listed species. If existing information or field surveys demonstrate that no potentially suitable habitat is located within the project's impact area, no further action is required under the Endangered Species Act for both Federal and non-Federal projects. Both species require relatively undisturbed, natural beach habitat. A small amount of beach habitat approximately 100 feet in length and composed largely of cobble and concrete rubble remnants of the collapsed decking from the old fish plant exists at the extreme western end of the Seaport Associates property. The remainder of the shoreline of the two properties is bulkheaded. Therefore, suitable habitat for the Piping Plover and seabeach amaranth is

lacking at the Belford Seafood Co-op site, and appears to be lacking at the Seaport Associates Site.

NJDEP's Landscape Project website was also searched to determine whether habitat for any priority species may be present. The Landscape Project is an ecosystem-level approach for the long-term protection of imperiled species and their important habitats in New Jersey, with the goal of protecting New Jersey's biological diversity by maintaining and enhancing imperiled wildlife populations within healthy, functioning ecosystems. In the project area, the entire shoreline area of the Seaport Associates Site is depicted as suitable habitat for state-endangered beach-dependent species. The state-listed black skimmer (breeding populations are state-endangered, nonbreeding populations are state-threatened) is documented as occurring in the shoreline area of the Seaport Associates shoreline. In the summer, black skimmers are frequently seen feeding in Compton's Creek. As discussed above, most of the shoreline of the Seaport Associates site is bulkheaded, with about 100 feet of disturbed beach present at the western end.

Green Infrastructure Design Guidelines

Design guidelines outlined in this report will provide standards for new construction, rehabilitation of existing buildings, and landscaping and site improvements. The guidelines are for the purpose of promoting quality development and rehabilitation that is environmentally sustainable, attractive, convenient and compatible with surrounding uses. Green infrastructure design guidelines involves the following:

- Minimize Site Disturbance
- Stream Restoration
- Bioretention Systems
- Reduced Water Use
- Stormwater Management
- Heat Island Reduction
- Native Landscaping
- Permeable Pavement and Buffer Strips

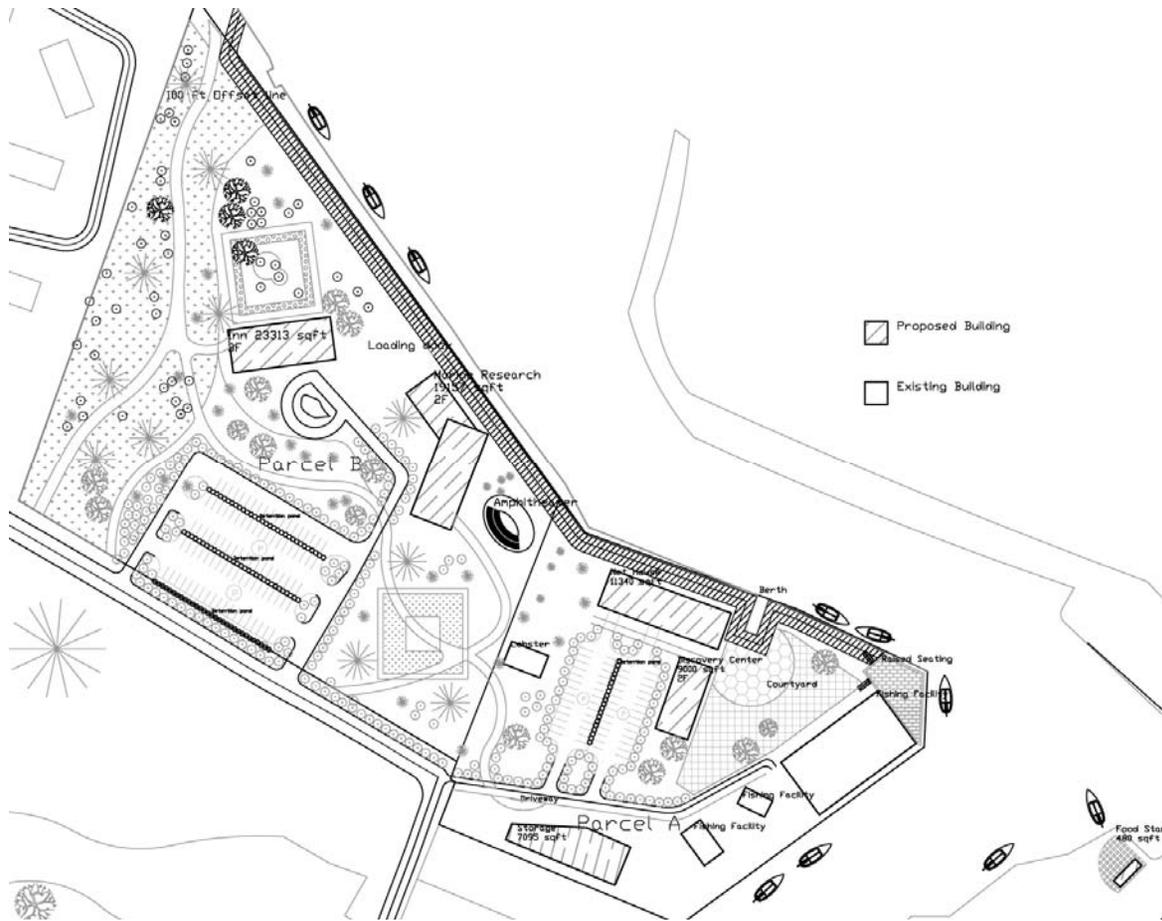
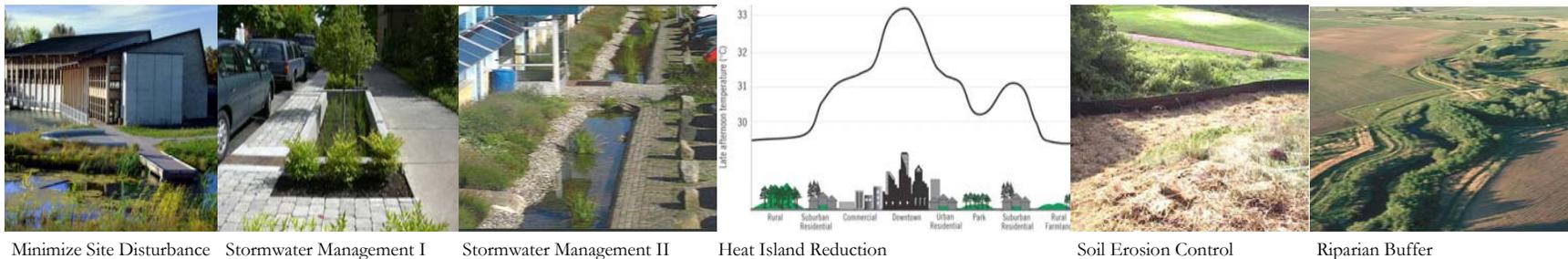


Figure 7.4: Green infrastructure strategies shown below can be implemented throughout the study area.



Minimize Site Disturbance

Maintain or improve existing hydrologic processes, including infiltration, detention, filtering, and storage.

1. *Reduce and slow down surface runoff.*
 - Protect soils and vegetation to enhance absorption, retention, and infiltration of precipitation.
 - Maintain and protect natural drainage pathways and water bodies.
 - Protect and enhance seasonal flooding of wetlands.

Maintain or enhance physical condition of on-site and off-site receiving water bodies.

2. *Avoid ditching and concentrating surface runoff.*
 - Avoid burying, piping, or culverting stream channels.
 - Prevent soil erosion and excessive sediment loading to receiving waters using rainwater and vegetation management.
 - Avoid the creation of large, shallow, non-shaded water features which may increase water temperatures.



Figure 7.5: James Clarkson Environmental Discovery Center, White Lake Township_Michigan (American Society of Landscape Architects, 2008). Building and surrounding infrastructure may designed so pre-construction hydrology is maintained or enhanced. This site incorporates the hydrologic benefits of wetland systems, such as groundwater maintenance and stormwater management.

Minimize Site Disturbance

Vegetation

Maintain and design vegetation so on-site and surrounding ecosystem services are sustained or enhanced.

1. *Repair and/or restore vegetation to maximize ecosystem services provided by plants*
 - Protect and preserve contiguous vegetated areas as much as possible, avoiding habitat fragmentation.
 - Protect and preserve existing habitat corridors.
 - Protect and increase plant diversity.
 - Avoid bare soil.
 - Minimize soil compaction, which may increase surface water runoff and decrease on-site water retention and groundwater recharge.
1. *Conserve existing appropriate vegetation*
 - Assess existing vegetation to determine which plants should be retained, favoring native species, significant trees, and plant associations.
 - Establish minimal zones of disturbance, limiting damage from construction.
 - Reduce use of heavy machinery.

American Society of Landscape Architects et al., 2007)



Figure 7.6: Intact riparian buffer in agricultural setting. (Iowa NRCS-USDA, 2008)



Figure 7.7: Native vegetation intact around open body of water in an urban setting (US EPA, 2008).

Minimize Site Disturbance

Reduce greenhouse gas emissions.

1. *Nitrous oxide*
 - Test soils to figure out if nitrogen fertilizers are necessary.
 - Apply nitrogen fertilizers efficiently.
2. *Methane*
 - Maintain aerobic conditions.
 - Minimize compaction.
 - Maintain subsurface drainage.
 - Build soil organic matter with compost and healthy vegetation.
3. *Carbon Dioxide*
 - Minimize soil erosion.
 - Build soil organic matter.
 - Minimize soil grading and transport.

Create a net zero waste site.

4. *Reuse materials on-site.*
 - Balance cut and fill.
 - Reuse on-site rocks and other living and non-living materials.
5. *Avoid using pollutants, chemicals, and other soil amendments harmful to human and ecosystem health.*

Maintain and/or improve soil resources

6. *Avoid disturbing areas with healthy soils.*
7. *Minimize damage to soils when disturbance is unavoidable.*
8. *Improve ecological health of degraded soils.*
9. *Soil restoration, reuse, and rehabilitation.*

(American Society of Landscape Architects et al., 2007)



Figure 7.8: Large planting by private land owner for bank rehabilitation



Figure 7.9: Soil erosion control sample

Impervious Surface Model for Stormwater Management

Sensitive Stream (0 - 10 % Imperviousness)

High quality stream with stable channels. Has excellent habitat structure and diverse fish and aquatic insects. Water quality is good to excellent.

Impacted Stream (11 - 25 % Imperviousness)

Increased storm flows alter stream channel geometry, with erosion and channel widening occurring in alluvial streams. Stream banks are unstable and there is a decline in physical habitat. Stream biodiversity declines in response to declining habitat quality. Water quality changes to fair to good categories during both dry and wet periods.

Non-Supporting Stream (Greater than 25 % Imperviousness)

Stream turns into a conduit for stormwater conveyance. Aquatic habitat quality is so degraded or eliminated that biodiversity is no

longer supported. Stream channel is highly unstable, with severe widening of stream reaches, downcutting, and stream bank erosion. Water quality is fair to poor; with high bacterial levels eliminating recreational uses of the water (Center for Watershed Protection, 2002).



Figure 7.10: Study area site plan; Figure 7.11: Stormwater management strategies can be applied in a variety of contexts. (US EPA, 2008).