

SECTION 5

POTENTIAL EFFECTS AND PROPOSED RESTORATION PLAN

5.1 SUMMARY OF POTENTIAL EFFECTS

As discussed within Section 4, the proposed MTS Conversion Program would involve the development of four marine-based facilities. Construction of these Converted MTSs would include, but not be limited to, the development of new structures, access ramps, fendering systems and a king pile wall (at the Southwest Brooklyn site only) in surface waters. The construction of these new facilities would require the removal and demolition of existing facilities at the Hamilton Avenue, East 91st Street and North Shore sites prior to construction. The existing Southwest Brooklyn MTS, however, would be maintained for potential future use by the DSNY.

Two of the proposed facilities, Hamilton Avenue and Southwest Brooklyn, would be constructed entirely upland on DSNY-owned property and, therefore, these structures would have no impact on the littoral zone (i.e., the area pursuant to 6 NYCRR Part 661.4 that has a water depth less than or equal to six feet at mean low water) or non-littoral zone areas. The remaining facilities, North Shore and East 91st Street, would be constructed over-water on pile-supported structures. Construction of these proposed facilities and ancillary structures would result in effects upon natural resources. These effects would primarily be associated with the development of those Converted MTSs that would be over-water facilities (i.e., North Shore and East 91st Street). In addition, other marine construction, such as the king pile wall at the Southwest Brooklyn site and new outfall structures would also result in potential effects upon the littoral zone. Finally, dredging activities would also be necessary within littoral zone and other wetland areas at these sites. The construction of the four new proposed facilities and dredging and filling activities, would have a combined, effect upon approximately 71,528 ft² (1.64 acres) of littoral zone and 2,328 ft² (0.05 acres) of other wetlands (i.e., intertidal and high marsh at North Shore).

As part of the MTS Conversion Program, the existing Hamilton Avenue MTS would be removed and a new facility constructed upland. This would represent a net reduction of 29,450 ft² (0.68

acres) of platform in non-littoral zone areas. The net increase in the effects of building structures and/or filling activities on the non-littoral zone would only be 36,852 ft² (0.85 acres) as shown in Table 5-1, which summarizes by facility the effects upon littoral zone and non-littoral zone areas.

The footprint of the existing North Shore MTS is 40,124 ft² (0.92 acres). This includes 14,774 ft² within existing littoral zone and 25,350 ft² (0.58 acres) within non-littoral zone areas of Flushing Bay. Development of the Converted MTS, inclusive of dredging and the construction of the new North Shore Converted MTS would result in a total effect upon wetlands of 71,150 ft² (1.63 acres) upon littoral zone and 2,328 ft² (0.05 acres) upon intertidal/high marsh areas. The net effect of the proposed facility upon littoral zone, however, would be approximately 56,376 ft² (1.29 acres). This would reflect the new effect of 71,150 ft² (1.63 acres) from the Converted MTS and the decrease in over-water facilities (i.e., the removal of the existing MTS) of 14,774 ft² (0.34 acres). The net effect upon non-littoral zone areas due to the proposed structure would be 20,347 ft² (0.47 acres). This would reflect the new Converted MTS footprint of 45,697 ft² (1.05 acres) and the decrease in non-littoral zone facilities of 25,350 ft² (0.58 acres) due to the removal of the existing North Shore MTS.

The footprint of the existing East 91st Street MTS is 35,203 ft² (0.81 acres), which includes 8,580 ft² (0.20 acres) of littoral zone and 26,623 ft² (0.61 acres) of non-littoral zone areas within the East River. Development of the Converted MTS, inclusive of dredging and the construction of the Converted MTS would impact 8,161 ft² (0.19 acres) of littoral zone areas. The proposed facility would result in a decrease of approximately 419 ft² (0.01 acres). This would reflect the new littoral zone effects resulting from the Converted MTS of 8,161 ft² (0.19 acres) and the removal of the existing facility within the littoral zone (i.e., the removal of the existing MTS) of 8,580 ft² (0.20 acres). Likewise, the net effect of the proposed facility upon non-littoral zone areas would be 43,361 ft² (1.00 acres). This would reflect the new effect of 69,984 ft² (1.61 acres) from the Converted MTS and the decrease in existing non-littoral zone facilities of 26,623 ft² (0.61 acres) due to the removal of the existing facility.

Table 5-1. Effected Areas Associated With New Structures/Fill and Dredging in the Littoral Zone

	Existing MTS Effect Reduction				Proposed Facility Effect			Net Effect		
	Total Footprint (ft ²)	Existing Intertidal/ High Marsh (ft ²)	Existing Littoral Zone (ft ²)	Existing Non-Littoral Zone (ft ²)	Intertidal/ High Marsh (ft ²)	Littoral Zone ⁽¹⁾ (ft ²)	Non-Littoral Zone ⁽²⁾ (ft ²)	Intertidal/ High Marsh (ft ²)	Littoral Zone (ft ²)	Non-Littoral Zone (ft ²)
North Shore	40,124	0	14,774	25,350	2,328	71,150	45,697	2,328	56,376	20,347
East 91 st Street	35,203	0	8,580	26,623	0	8,161	69,984	0	-419	43,361
Southwest Brooklyn ⁽³⁾	23,855	0	0	0	0	15,571	2,594	0	15,571	2,594
Hamilton Avenue	29,450	0	0	29,450	0	0	0	0	0	-29,450
Decrease⁽⁴⁾	104,777	0	23,354	81,423		0	0		0	0
Increase	0		0	0	2,328	94,882	118,275		0	0
Net Effect	0		0	0		0	0	2,328	71,528	36,852

⁽¹⁾ Includes construction of new facility, dredging and filling.

⁽²⁾ Includes construction of new facility and filling.

⁽³⁾ The existing Southwest Brooklyn MTS will remain as is for potential future use by the DSNY.

⁽⁴⁾ The existing Southwest Brooklyn MTS will remain and is, therefore, not included in this total.

The existing Hamilton Avenue MTS has a footprint of 29,450 ft² (0.68 acres), which is located entirely within non-littoral zone areas. The new Converted MTS would be located on the upland portion of the site and would not result in significant new effects to either littoral or non-littoral zone areas. Removal of the existing MTS, therefore, would result in a net decrease in non-littoral zone footprint.

As the existing Southwest Brooklyn MTS would not be removed, development of the Converted MTS would result in 15,571 ft² (0.36 acres) of new effects upon littoral zone from dredging and development of a new king pile wall. In addition, 2,594 ft² (0.06 acres) of non-littoral zone effects would also occur due to fill placement along this wall.

In addition, as previously discussed, in order to facilitate barge movement of containerized waste, barges must be towed to and loaded at each of these four Converted MTSs. Each barge would be approximately 150 feet long by 45 feet wide and would have an area of 6,750 ft² (0.15 acres). At each facility, one barge would essentially be continually moored at the mooring berth beneath the gantry cranes. In addition, a barge would be moored at a temporary mooring berth for approximately 30 to 60 minutes during each barge change out. No barges, however, would be stored at the temporary mooring berths at these four Converted MTSs, other than for the change out sequence. Since each Converted MTS would only have one barge moored for any significant amount of time, it is anticipated that the potential additional effect at each facility would be 6,750 ft² (0.15 acres), with an additional total net effect for all facilities of 27,000 ft² (0.62 acres). Table 5-2 summarizes the estimated effect from barges that would be moored at each facility during its operation.

Table 5-2. Estimated Effect from Barges Moored at the Proposed Converted MTS

Site Name	Estimated Number of Barge Change Outs Per Day	Total Barge Area (ft ²)	Maximum Number of Moored Barges	Number of Barges Moored Continuously	Total Barge Effect (ft ²) ⁽¹⁾
North Shore Converted MTS	3	6,750	2	1	6,750
East 91 st Street Converted MTS	1	6,750	2	1	6,750
Hamilton Avenue Converted MTS	2	6,750	2	1	6,750
Southwest Brooklyn Converted MTS	1	6,750	2	1	6,750
Total Effect					27,000

⁽¹⁾ During the daily barge maneuvering operations at the facility, one barge would be at the mooring berth on a continuous basis and would, therefore, be considered to cause an effect upon surface waters/natural resources.

5.2 PROPOSED MITIGATION

As shown in Table 5-1, development of the four Converted MTSs would affect 71,528 ft² (1.64 acres) of littoral zone wetlands, 2,328 ft² (0.05 acres) of intertidal/high marsh and 36,852 ft² (0.85 acres) of non-littoral zone areas (i.e. open waters). The DSNY is committed to addressing these impacts and will work with the NYSDEC and Corps of Engineers to develop an appropriate final mitigation plan. The DSNY has, therefore, developed a proposed conceptual mitigation plan or strategy that would address the currently anticipated impacts that would occur due to the implementation of the MTS Conversion Program.

The NYSDEC and Corps of Engineers typically require different mitigation ratios to address potential impacts to natural resources of differing value. The DSNY proposes to address impacts to intertidal and high marsh areas at a 3:1 ratio, which would be consistent with NYSDEC mitigation requirements. Impacts to littoral zone wetlands would be mitigated at a ratio of 2:1. Finally, open water or non-littoral zone impacts resulting from the development of new facility footprints and the shadow impacts that would be associated with these would also be mitigated at a 2:1 ratio. In addition, impacts due to the long term mooring of barges at the proposed facilities (Table 5-2) would be mitigated at a ratio of 1:1. The current estimated impacts to wetlands and

open waters due to the development of the new Converted MTSs are presented within Table 5-3, as well as the proposed mitigation ratio and the estimated mitigation requirements.

Table 5-3. Summary of Estimated Program Impacts to Wetlands and Open Waters

Resource	Estimated Impact ft² (Acres)	Mitigation Ratio	Mitigation ft² (Acres)
Littoral Zone	71,528 (1.64)	2:1	143,056 (3.28)
Intertidal/High Marsh	2,328 (0.05)	3:1	6,984 (0.16)
Open Water (Facilities)	36,852 (0.85)	2:1	73,704 (1.69)
Open Water (Barges)	27,000 (0.61)	1:1	27,000 (0.61)

The DSNY proposes a conceptual mitigation plan that would be comprised of the removal of existing structures, the implementation of on-site/off-site mitigation and the development of one or more Fee In Lieu of Mitigation Agreements to address the impacts of the proposed program consistent with the required mitigation presented within Table 5-3. In several instances, on-site mitigation of potential impacts is not feasible due to the limited availability of suitable or appropriate sites, the physical nature of the current environment (e.g., high currents) and/or other factors.

This conceptual mitigation plan would be further refined based upon discussions with and input from the NYSDEC and Corps of Engineers. It is, however, understood that as the design of the facilities is further refined, the permitting process is advanced and during the development of a final mitigation plan, the level of required mitigation may increase or decrease slightly. Presented below is a summary of the components of the currently proposed conceptual mitigation plan.

Intertidal/High Marsh Mitigation

Intertidal/high marsh impacts would only occur at the North Shore site. The DSNY proposes that mitigation of intertidal/high marsh be completed at or in close proximity to the North Shore Converted MTS site. This will be dependent upon the identification of a suitable and available location within this area that would not be adversely affected after the new facilities have been completed and are operational. Mitigation of these wetlands

would consist of the development of approximately 6,984 ft² of new intertidal and/or high marsh.

Littoral Zone Mitigation

As a result of limited areas and/or physical limitations at many of the proposed sites, a Fee In Lieu of Mitigation Agreement will be pursued as the main approach for the mitigation of impacts to the littoral zone. The scope of mitigation required for littoral zone impacts is 143,056 ft² or 3.28 acres as noted in Table 5-3.

The Fee In Lieu of Mitigation process allows a permit applicant to develop an agreement between the Corps of Engineers and a third party to provide funding for appropriate wetland restoration, development or other measures. The level of funding is typically established as part of the development of the agreement and would be consistent with the current estimated cost for mitigation efforts (typically on a per acre basis) within the New York metropolitan region. This process allows for an applicant to fund existing or proposed restoration, enhancement or mitigation opportunities that might not otherwise be advanced or completed due to funding limitations.

Potentially suitable sites would be identified and/or discussed further with the NYSDEC and the Corps of Engineers. Initial sites that have been identified and may be funded by the proposed Fee In Lieu of Mitigation Agreement are as follows:

- Pugsley Creek Wetland Restoration – Bronx
- Westchester Creek/Zerega Avenue Wetland Restoration - Bronx
- Additional Natural Resources Restoration Sites Identified under the Jamaica Bay Damages Account (January 2007 Update)
- Other Programs
 - New York – New Jersey Harbor Estuary Program (HEP) – Habitat Work Group – Priority Acquisition and Restoration Sites (Revised February 8, 2006)

- U.S. Army Corps of Engineers Hudson - Raritan Estuary (HRE) Restoration Opportunities.

Open Water Mitigation - Facilities

The proposed Converted MTS Program would result in an impact to open waters due to facility footprints/shadows of approximately 36,852 ft² (0.85 acres). As a result a total of 73,704 ft² (1.69 acres) of mitigation would be required at a ratio of 2:1. The DSNY proposes to mitigate through by removing existing facilities with the balance of required mitigation obtained as part of the Fee In Lieu of Mitigation Agreement discussed above.

The DSNY would demolish and remove the existing South Bronx MTS located within the East River, immediately west of the mouth of the Bronx River. This would eliminate approximately 42,347 ft² (0.97 acres) of current platform/shadow impacts upon open water areas. The balance of anticipated mitigation would then be obtained under a Fee In Lieu of Mitigation Agreement to provide the mitigation equivalent of 31,357 ft² (0.72 acres), i.e. the balance of the required 2:1 mitigation required for open water impacts from the new facilities. It is anticipated that one Fee In Lieu of Mitigation Agreement would be developed to implement littoral zone and open water mitigation requirements.

Open Water Mitigation – Barges

As noted in Table 5-2, once operational the four Converted MTSs would have the equivalent of one transport barge moored continuously at each facility. These barges would, therefore, create shadow impacts upon existing open water habitat. Each barge would have a “footprint” of approximately 6,750 ft² (0.15 acres) or a total of 27,000 ft² (0.62 acres) for all four locations. Mitigation of these impacts, as presented in Table 5-3, would be required at a 1:1 ratio. The DSNY is, therefore, proposing the elimination of an equivalent “footprint” of barges currently moored at the Fresh Kills Landfill.

Since the implementation of the Interim Export Program and more importantly the closure of the Fresh Kills Landfill in 2001, a substantial component of the DSNY's previously utilized barge fleet has been permanently moored at the Fresh Kills Landfill. Each of these barges are approximately 37 feet wide and 150 feet long with a total area of 5,550 ft² (0.13 acres). The DSNY would, therefore, propose the permanent removal of a sufficient number of these barges to address the required mitigation of 27,000 ft² (0.62 acres) of potential impact. This would generally require the DSNY to remove approximately five barges from the landfill fleet.