Appendix 5 | Environmental Mitigation and New Consultation

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1. INTRODUCTION

Plan 2045, the Regional Transportation Plan (RTP), is a product of extensive coordination and collaboration between NYMTC’s member agencies, its partners in the public and private sectors, and the general public. During these consultations, these groups worked together to reconcile long-term transportation plans with region-wide environmental concerns. This Appendix describes the background and methodology of the consultation process. The Appendix also presents the data, maps, and research provided to member agencies that helped incorporate a comprehensive regional coordination of environmental regulation and initiatives into the RTP.
2. FEDERAL REQUIREMENTS

On December 4, 2015, President Obama signed into law the new transportation reauthorization bill, Fixing America’s Surface Transportation (FAST) Act, authorizing federal aid to highway and transit programs through September 2020. This new bill has generally continued the transportation planning requirements for Metropolitan Planning Organizations (MPOs).

Since the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU (2005)), federal law has continued to require long-range transportation plans to consult with federal, state, local, tribal, wildlife, land management and regulatory agencies concerning the development of the transportation plan. Additionally, NYMTC is required to consult with neighboring MPOs to ensure consistency in planning across regional boundaries. The results of these consultations are presented in this Appendix as maps and discussion. In keeping with NYMTC policies and federal requirements, NYMTC members are committed to protecting and enhancing the region’s natural resources, promoting energy conservation, improving the quality of life, and promoting consistency between transportation improvements and state and local planned growth. The mitigation of potential environmental, social, and cultural effects of specific projects is handled through federal and New York State environmental review processes required of each implementing agency.

3. PARTNER AGENCIES

NYMTC’s member agencies have formal and informal relationships with federal, state, and local partner agencies that provide feedback on environmental and other issues related to transportation projects and studies in the region. Beyond the efforts of individual member agencies, NYMTC formalized the RTP’s consultation process by reaching out to various partner agencies in a number of ways, including teleconferences and email exchanges. This outreach identified resource and conservation concerns that may impact future regional transportation planning efforts.

Agencies that were consulted include:

- NYC Department of Environmental Protection (NYC DEP)
- NYC Mayor’s Office of Sustainability
- NYC Department of Parks and Recreation (NYC DPR)
- NYS Department of Environmental Conservation (NYS DEC)
- NYS Department of State (NYC DOS)
- NYS Empire State Development (ESD)
- NYS Office of Parks, Recreation and Historic Preservation (NYS OPRHP)
- North Jersey Transportation Planning Authority (NJTPA)
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (FWS)
- U.S. Federal Highway Administration (FHWA)
- U.S. Geological Survey (UGS)
- U.S. National Park Service (NPS)
- Federal Emergency Management Agency (FEMA)
- University of Connecticut Center for Land Use Education and Research (CLEAR)
4. ENVIRONMENTAL MITIGATION

Environmental mitigation is a major consideration in transportation investment and planning efforts. NYMTC members are engaged in environmental mitigation activities at the planning and project level through the implementation of the National Environmental Policy Act (NEPA) and the State Environmental Quality Review Act (SEQRA) regulations which ensure that projects are in harmony with the community and preserve the environmental, scenic, aesthetic, historic, and natural resource values of the area in which they are located.

In the NYMTC planning area, there are a number of ongoing environmental mitigation activities for watersheds, wildlife action areas, and other eco-systems. Environmental mitigation plans have also been developed by various federal agencies, state and regional partnerships, and nongovernmental organizations.

The consultation process described in Section 6 of this Appendix compiled these mitigation plans and activities, and also identified environmental assets and areas exposed to natural hazards in the NYMTC planning area. This process has provided NYMTC members with a resource from which they can understand the full impact of proposed projects, and the type of mitigation activities they may need to undertake.

5. NATURAL & HISTORIC RESOURCE CONSERVATION

In compliance with federal legislation, NYMTC and its members consulted with various resource agencies during the needs assessment stage of the RTP’s development. These discussions included ways to procure key data for identifying regional land use management goals, natural resources, environmental protection and conservation areas, and historic preservation sites.

Much of the data used in this Appendix was procured through partner agencies’ websites and other internet resources that house publicly-accessible data and documents of their plans. One such online resource was the New York State Geographic Information Systems (GIS) Clearinghouse, where several New York State agencies store and share geospatial data. Following research and data collection, agencies and partner organizations were contacted individually to confirm the accuracy of the information and to provide suggestions for other data sources as needed.
6. CONSULTATION AND COMPARISON PROCESS

Information from NYMTC partner agencies was collected and analyzed using the following methodology:

1. Identify partner agencies to consult regarding natural and cultural resources: To identify the federal, state and local agencies relevant to the long-range transportation plan, NYMTC compiled a list of agencies in the region responsible for land use management, natural resources, environmental protection and conservation, and historic preservation.

2. Research agencies’ goals, objectives and geographic focus areas: Research was conducted initially through partner agency websites and other internet sources such as the New York State GIS Clearinghouse. The agencies were then contacted individually to confirm the accuracy of the sources. Efforts were made to contact each agency at various points in the RTP update process.

3. Review planning documents: NYMTC researched partner agency planning documents and compared their goals and objectives with those of NYMTC member agencies. In cases where any inconsistencies in goals and objectives were not addressed by NYMTC’s shared vision, goals, and individual projects, the issue was researched and resolved in coordination with the partner agency and the appropriate NYMTC member agency. Both agencies’ respective goals and objectives were then taken into consideration in the development of the vision, goals, and objectives in the RTP.

4. Map natural and cultural resources: Maps were created in GIS using the data available from partner agencies to compare projects included in the long-range transportation plan with historic, environmental and redevelopment areas. When transportation projects are in proximity to these resources and areas, the NYMTC member agency responsible for the project reviews available information and, if needed, undertakes further analysis and review.
7. CONSULTATION ANALYSIS & RESULTS

In addition to those agencies listed in the table at right (Table A5.1), NYMTC also consulted with other agencies who provided data and feedback, as listed in Table A5.2. These data were not ultimately used in the creation of the following maps.

All transportation projects must complete Federal and New York State environmental review processes, both of which require projects to address how their potential environmental, social and cultural impacts will be mitigated.

The following series of maps were created to identify potential “red flags” that may either affect the feasibility of a project or require steps to reduce or mitigate the impacts of the project on environmental, historic and other resources. The maps are reviewed by NYMTC members and the public in order to inform future developments and investments.

The NYMTC planning area is divided into three geographical Transportation Coordination Committees (TCC) that provide forums for transportation decision-making at the sub-regional level. The three TCCs are the Lower Hudson Valley, New York City, and Nassau-Suffolk. Each TCC has four maps:

1. **Land-based issues** display land-based areas that require consideration when planning transportation-related projects. This includes recreation areas, parks and wildlife areas, historic sites, and government-run facilities.

2. **Water-based issues** show water-based areas that require consideration such as protected water bodies, coastal wildlife habitats, and wetlands. These water-based maps include elevation data as a way to provide geographic context for natural water bodies.

3. **Redevelopment areas** highlight regions that present opportunities for redevelopment and economic development as well as environmental clean-up in former or current brownfields.

4. **Flood zones** show the Federal Emergency Management Administration’s (FEMA) flood zones which were updated after Superstorm Sandy.

### TABLE A5.1: CONSULTATION ORGANIZATIONS

<table>
<thead>
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<th>Consultation</th>
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<td>Preliminary Flood Insurance Rate Map (PFIRM) Westchester</td>
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LOWER HUDSON VALLEY

The Lower Hudson Valley is characterized by a number of protected natural areas that present unique planning and engineering issues for transportation projects. There is a wealth of protected streams, wetlands, reservoirs, aquifers and important fish and wildlife habitats that must be considered during construction and over the lifetime of all transportation projects (see Figure A5.3). Water sources in this TCC are also a flood hazard to transportation infrastructure.

As can be seen from the Land-Based Map (Figure A5.2), the Lower Hudson Valley is home to the largest parklands in the NYMTC region, including Harriman State Park. All of the region’s protected wildlife areas are within parklands and are continually monitored due to their popularity with recreational users who access the areas by car.

Brownfields and other sites requiring environmental remediation exist in communities such as Yonkers and Mount Vernon, as shown on the Redevelopment Map (Figure A5.1). These sites may present opportunities for redevelopment, and eventually the potential need for improved transportation access.
**Figure A5.1: Economic Development Initiatives and Environmental Clean-Up, Lower Hudson Valley**

*Environmental Remediation Sites*
Sites which have cleanup currently, or have undergone cleanup under the oversight of DEC. One point represents a subset of sites which are currently included in one of the Remedial Programs being overseen by the Division of Environmental Remediation.

**New York State Environmental Zones ("En-Zones")**
- **Type A or AB:** Census tracts with incentives available such as liability relief & tax credits to encourage cleanup & redevelopment of brownfields sites. Areas in this eligibility category are defined by having a poverty rate of at least 20% and an unemployment rate of at least 125% of state average.
- **Type B:** Census tracts where incentives to encourage cleanup and redevelopment of brownfields sites are conditionally available. Areas in this eligibility category are defined by having a poverty rate of at least double the county poverty rate.

**New York State Empire Zones**
Areas in which qualifying businesses are eligible to receive tax credits and exemptions.

*Source: NYS Dept. of Environmental Conservation*  
**Source: NYS Empire State Development Corporation**
Figure A5.2: Recreation and Preservation of Culture and Wildlife, Lower Hudson Valley

- **Cultural or Historic Sites**: Includes all sites listed on the National Register of Historic Places as well as those held by the National Park Service as a Historic Site, Battlefield, Heritage Corridor, Memorial, Monument or Historic Shrine, and NYS Historic Sites.

- **Parks and Recreational Areas**: Includes all land owned by the federal government, New York State, Counties or Municipalities for recreation or wildlife preservation/management.

- **Federal or State Non-Recreational Facilities**: Includes all land owned by the federal government or New York State for Military Uses, Corrections, Research, Cemeteries, Psychiatric Centers, VA Medical Centers, or the US Coast Guard.

- **Wildlife/Bird Protection or Refuge Area**: NY State lands that have been officially designated for their value to bird conservation by the NYS Dept. of Environmental Conservation. These do not include any privately owned or operated wildlife refuges or sanctuaries.
Highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems.

Waters used as a source of drinking water, swimming and other contact recreation, or supporting fisheries. These are subject to the stream protection provisions of the Protection of Waters regulations.

Areas identified by the DOS as constituting the state’s most important coastal habitats.

Significant Coastal Fish & Wildlife Habitats
Areas identified by the DOS as constituting the state’s most important coastal habitats.

Sources: NYS Dept. of Environmental Conservation
NYS Dept. of State
Figure A5.4: Flood Hazard and Coastal Risk Areas, Lower Hudson Valley

**Special Flood Hazard Areas**

Areas that will be inundated by the 1 percent annual chance (or 100-year) flood. In these areas, the National Flood Insurance Program's floodplain management regulations must be enforced and purchase of flood insurance is mandatory for federally backed mortgages.

**Moderate Flood Hazard Areas**

Areas that are between the limits of the 1 percent annual chance (or 100-year) flood and the 0.2 percent annual chance (or 500-year) flood. While these areas may be at a moderate risk of flooding, flood insurance is not mandatory for federally backed mortgages.

**Coastal Risk Areas**

- **Extreme Risk Areas**: These are areas currently at risk of frequent inundation, vulnerable to erosion in the next 40 years, or likely to be inundated in the future due to sea level rise.
- **High Risk Areas**: These are areas that fall outside of the Extreme Risk Areas and are currently at infrequent risk of inundation or are at risk in the future from sea level rise.
- **Moderate Risk Areas**: These are areas that fall outside of the Extreme and High Risk Areas, but are currently at moderate risk of inundation from infrequent events or are at risk in the future from sea level rise.

Source: FEMA Map Service Center, accessed June 2015, using the most up-to-date flood zone data available for each county.

- National Flood Hazard Layer (NFHL), effective 06/02/2015; Rockland County FEMA Advisory Base Flood Elevations, effective 06/21/2013; Westchester County Preliminary Flood Insurance Rate Map (PFIRM), generated 12/08/2014

Coastal Risk Areas (NYS Dept. of State), published 08/04/2014
LONG ISLAND
One of the defining characteristics of Long Island is its coastal water resources, such as important tidal wetlands and significant coastal fish and wildlife habitats, as displayed in Long Island’s Water-based Map (Figure A5.7). These resources also translate into a high exposure to weather events that generate flood hazards, as confirmed by recent storm events such as Superstorm Sandy in 2012, and also as seen in the Flood Zones map that utilizes post-Sandy FEMA flood data released in 2013 for Nassau County, and 2015 for Suffolk County (Figure A5.8). Long Island’s south shore and barrier islands are most at risk of inundation during flooding events. This poses an important consideration when siting development and transportation projects, although some transportation infrastructure currently exists in these areas.

The Land-Based Map (Figure A5.6) shows that there are several parklands, wildlife areas and National Register sites clustered throughout the TCC. These areas represent sensitive areas for the development of transportation infrastructure, both in terms of construction and the amount of travel they generate, although Wildlife refuges are generally located away from transportation infrastructure and centers of population. Because of these resources and sensitivities, transportation investments in this area necessitate considerable effort in outreach and coordination with government agencies such as NYSDEC, as well as with members of the public who access and enjoy these natural and cultural resources.

As shown in the Redevelopment Map (Figure A5.5), brownfields and redevelopment zones are concentrated in Nassau and Western Suffolk Counties, as well as around Long Island Rail Road lines. Development of land use and transportation resources at these locations are eligible for state funding programs.
Environmental Remediation Sites *
Sites which have cleanup currently, or have undergone cleanup under the oversight of DEC. One point represents a subset of sites which are currently included in one of the Remedial Programs being overseen by the Division of Environmental Remediation.

New York State Environmental Zones ("En-Zones") **
Type A or AB: Census tracts with incentives available such as liability relief & tax credits to encourage cleanup & redevelopment of brownfields sites. Areas in this eligibility category are defined by having a poverty rate of at least 20% and unemployment rate of at least 125% of state average.
Type B: Census tracts where incentives to encourage cleanup and redevelopment of brownfields sites are conditionally available. Areas in this eligibility category are defined by having a poverty rate of at least double the county poverty rate.

New York State Empire Zones **
Areas in which qualifying businesses are eligible to receive tax credits and exemptions.

* Source: NYS Dept. of Environmental Conservation
** Source: NYS Empire State Development Corporation
Cultural or Historic Sites
Includes all sites listed on the National Register of Historic Places as well as those held by the National Park Service as a Historic Site, Battlefield, Heritage Corridor, Memorial, Monument or Historic Shrine, and NYS Historic Sites.

Parks and Recreational Areas
Includes all land owned by the federal government, New York State, Counties or Municipalities for recreation or wildlife preservation/management.

Federal or State Non-Recreational Facilities
Includes all land owned by the federal government or New York State for Military Uses, Corrections, Research, Cemeteries, Psychiatric Centers, VA Medical Centers, or the US Coast Guard.

Wildlife/Bird Protection or Refuge Area
NY State lands that have been officially designated for their value to bird conservation by the NYS Dept. of Environmental Conservation. These do not include any privately owned or operated wildlife refuges or sanctuaries.
Note: There are no DEC designated Primary Aquifers in Nassau or Suffolk county. The entire land area of both counties, however, is designated as an EPA Sole-Source Aquifer, which is defined as the sole or main source of drinking water for a community.

**DEC Protected Water Bodies**

Waters used as a source of drinking water, swimming and other contact recreation, or supporting fisheries. These are subject to the stream protection provisions of the Protection of Waters regulations.

- Reservoirs and Aqueducts
- Other Protected Water Bodies
- Unprotected Water Bodies

**Freshwater Wetlands**

Wetlands larger than 12.4 acres in size, and certain smaller wetlands of unusual local importance identified by the DEC.

**Tidal Wetlands**

Areas with the highest protection level under the 1973 Tidal Wetlands Act: Intertidal Marshes, High Marshes and Fresh Marshes, as identified by the NYS Official Tidal Wetlands Inventory.

**Significant Coastal Fish & Wildlife Habitats**

Areas identified by the DOS as constituting the state’s most important coastal habitats.

Sources: NYS Dept. of Environmental Conservation
NYS Dept. of State
FIGURE A5.8: FLOOD HAZARD AND COASTAL RISK AREAS, LONG ISLAND

Areas that will be inundated by the 1 percent annual chance (or 100-year) flood. In these areas, the National Flood Insurance Program’s floodplain management regulations must be enforced and purchase of flood insurance is mandatory for federally backed mortgages.

Moderate Flood Hazard Areas
Areas that are between the limits of the 1 percent annual chance (or 100-year) flood and the 0.2 percent annual chance (or 500-year) flood. While these areas may be at a moderate risk of flooding, flood insurance is not mandatory for federally backed mortgages.

Coastal Risk Areas
Extreme Risk Areas: These are areas currently at risk of frequent inundation, vulnerable to erosion in the next 40 years, or likely to be inundated in the future due to sea level rise.
High Risk Areas: These are areas that fall outside of the Extreme Risk Areas and are currently at infrequent risk of inundation or are at risk in the future from sea level rise.
Moderate Risk Areas: These are areas that fall outside of the Extreme and High Risk Areas, but are currently at moderate risk of inundation from infrequent events or are at risk in the future from sea level rise.

Source: FEMA Map Service Center, accessed June 2013, using the most up-to-date flood zone data available for each county.
National Flood Hazard Layer (NFHL), effective 06/02/2015
Coastal Risk Areas (NYS Dept. of State), published 08/04/2014
NEW YORK CITY
There is a significant amount of historic and cultural sites in New York City that must be considered during transportation and land use planning. Additionally, many parts of New York City are low-lying and susceptible to flooding during extreme weather events, as was evident during recent storm events, most notably Superstorm Sandy. Indeed, the flood map has become an important factor in siting future land use and transportation projects.

Due to the presence of several, significant coastal resources and freshwater wetlands in New York City, there are concerns around protecting coastal habitats and waters, as well as flood risks (see Figure A5.11 and A5.12). However, given the dense land uses developed over New York City’s long history of growth, there are fewer environmental impacts to consider as compared to the other TCCs, although the Jamaica Bay in Queens is home to a large, important wetland and coastal habitat (see Figure A5.11).

As shown on the Redevelopment Map (Figure A5.9), brownfield and environmental remediation sites are clustered in two main areas: the Bronx and Upper Manhattan; and Brooklyn and Lower Manhattan. While remediation may increase costs for development, redevelopment of these sites represent important opportunities within the city.
**Environmental Remediation Sites**
Sites which have cleanup currently, or have undergone cleanup under the oversight of DEC. One point represents a subset of sites which are currently included in one of the Remedial Programs being overseen by the Division of Environmental Remediation.

**New York State Environmental Zones ("En-Zones")**
- **Type A or AB:** Census tracts with incentives available such as liability relief & tax credits to encourage cleanup & redevelopment of brownfields sites. Areas in this eligibility category are defined by having a poverty rate of at least 20% and unemployment rate of at least 125% of state average.
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**New York State Empire Zones**
Areas in which qualifying businesses are eligible to receive tax credits and exemptions.

*Source: NYS Dept. of Environmental Conservation  
**Source: NYS Empire State Development Corporation*
**Figure A5.2: Recreation and Preservation of Culture and Wildlife, New York City**

- **Cultural or Historic Sites**: Includes all sites listed on the National Register of Historic Places as well as those held by the National Park Service as a Historic Site, Battlefield, Heritage Corridor, Memorial, Monument or Historic Shrine, and NYS Historic Sites.

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Highly productive aquifers presently utilized as sources of water supply by major municipal water supply systems.

Waters used as a source of drinking water, swimming and other contact recreation, or supporting fisheries. These are subject to the stream protection provisions of the Protection of Waters regulations.

Areas identified by the DOS as constituting the state’s most important coastal habitats.

Wetlands larger than 12.4 acres in size, and certain smaller wetlands of unusual local importance identified by the DEC.

Areas with the highest protection level under the 1973 Tidal Wetlands Act: Intertidal Marshes, High Marshes and Fresh Marshes, as identified by the NYS Official Tidal Wetlands Inventory.

Areas identified by the DOS as constituting the state’s most important coastal habitats.

Sources: NYS Dept. of Environmental Conservation
NYS Dept. of State
Special Flood Hazard Areas
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Coastal Risk Areas

- Extreme Risk Areas: These are areas currently at risk of frequent inundation, vulnerable to erosion in the next 40 years, or likely to be inundated in the future due to sea level rise.
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- Moderate Risk Areas: These are areas that fall outside of the Extreme and High Risk Areas, but are currently at moderate risk of inundation from infrequent events or are at risk in the future from sea level rise.

Source: FEMA Map Service Center, accessed June 2015, using the most up-to-date flood zone data available for each county.
National Flood Hazard Layer (NFHL), effective 06/02/2015; New York City Preliminary Flood Insurance Rate Map (PFIRM), generated 01/30; Coastal Risk Areas (NYS Dept. of State), published 08/04/2014
8. INVASIVE SPECIES

As far as practicable, NYMTC members need to consider and address the impacts of invasive species in all aspects of project scoping, planning, design, construction, operation and maintenance for all projects and activities. In New York State the New York State Department of Environmental Conservation (NYSDEC) is a key resource and partner in this process.

Executive Order 13112, as supported by elements of USC 4321 et seq., National Environmental Policy Act, 1969, and other related laws require federal agencies to: (a) prevent the introduction of invasive species; (b) provide for their control; and (c) minimize the economic, ecologic and human health impacts that invasive species cause. Under the Executive Order, Federal agencies cannot authorize, fund or carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species in the US or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

The likelihood of introducing or spreading invasive species and a description of measures being taken to minimize their potential harm should be made part of any process conducted to fulfill project sponsors’ responsibilities under NEPA. Consideration of invasive species should occur during all phases of the environmental process to fulfill the requirements of NEPA. The actual NEPA analysis should include identification of any invasive terrestrial or aquatic animal or plant species that could do harm to native habitats within the project study area. Actions could include (a) the mapping of all existing invasive populations on and adjacent to the project and a survey of existing soils for invasive potential; (b) the potential impact of the disturbances caused by construction or other actions on the spread of invasive species; and (c) a discussion of any preventative measures or eradication measures that will be taken on the project.
Federal and state laws protect certain species of plants, fish and wildlife included on federal and state lists of endangered and threatened species. To ensure compliance with federal and state laws and to secure project approval, project sponsors must determine whether a project will adversely affect a federal or state endangered or threatened species. This determination may involve: (i) determining whether the project requires process review; (ii) reviewing the Natural Heritage Program “red flag” maps as an initial screening for applicable projects; (iii) determining the type and significance of the Natural Heritage record; (iv) contacting and consulting with the state and federal agencies to determine the likelihood of occurrence of an endangered or threatened species in the project area; (v) conducting a site screening of the project area to determine the potential effect of the project on a listed or proposed species; (vi) developing an endangered and threatened species survey; (vii) conducting a field survey and documenting the results to ascertain the presence or absence and effects of the project on a listed or proposed species; and (viii) evaluating avoidance, minimization and mitigation measures.

If a federal or state endangered or threatened species is present, project sponsors must assess potential impacts, and consider efforts to avoid, minimize and mitigate the impacts. They must modify the project to the satisfaction of the state and federal agencies.

Similar to the treatment of invasive species, NYMTC members are also required to consider and mitigate the impacts to endangered and threatened species in the development of projects. They must determine whether a project will adversely affect a federal or state endangered or threatened species.

9. ENDANGERED & THREATENED SPECIES

Falcon chick being banded on the Marine Parkway Bridge
Photo source: MTA
ENDNOTES

1All datasets, unless otherwise indicated, were retrieved from these agencies through the New York State Geographic Information Systems Clearinghouse (NYS GIS Clearinghouse).
2Data mapped from these agencies came from direct communications with contacts at these agencies.
3The following series of freshwater wetlands files were downloaded as a coverage and had to be imported using the Import from E00 tool. According to the metadata, the line and polygon files are the ones that matter most for our purposes.
4This part of the digital elevation model was downloaded in a series of quadrangles, each with a unique filename. Each filename includes a double letter such as “ii” or “hh,” followed by two digits and the letters “elu.” Since several quadrangles were downloaded, the unique aspects of the filenames have been omitted for brevity. The files were obtained through the Cornell University Geospatial Information Repository website.