Appendix I1
Water Resources Supplemental Information

Contents

Figures

Acronyms and Abbreviations

ACOE ..... Army Corps of Engineers
BRT ..... Bus Rapid Transit
BMP ..... Best Management Practices
CFR ..... Code of Federal Regulations
CSO ..... Combined Sewer Outflows
CWA ..... Clean Water Act
DEIS ..... Draft Environmental Impact Statement
ECL ..... Environmental Conservation Law
EPA ..... Environmental Protection Agency
FTA ..... Federal Transit Administration
FWHA ..... Federal Highway Administration
HUC ..... Hydrologic Unit Code
JJA ..... John James Audubon Parkway
L1UBHx ..... Lacustrine, limnetic, unconsolidated bottom, permanently flooded, excavated
LRT ..... Light Rail Transit
Metro ..... Niagara Frontier Transit Metro System, Inc.
Metro Rail ..... Metro Light Rail Transit System
MR ..... Maple Road
MS4 ..... Municipal Separate Storm Sewer Systems
NFB ..... Niagara Falls Boulevard
NPDES ..... National Pollutant Discharge Elimination System
NRCS ..... National Resources Conservation Service
NYCCR ..... New York Codes, Rules, and Regulations
NYSDEC ..... New York State Department of Environmental Conservation
NWI ..... National Wetlands Inventory
PEM1 ..... Palustrine Emergent Wetland

PEM5 ..... Palustrine Emergent Wetland Dominated by Phragmites Australis
PFO1B ..... Palustrine, forested, broad-leaved, deciduous, saturated wetland
PFO1Bd ..... Palustrine, forested, broad-leaved deciduous, saturated, partly drained/ditched
PUBHx ..... Palustrine, unconsolidated bottom, permanently flooded, excavated
R2UBH ..... Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded
R2UBHx ..... Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated
R4SBCx ..... Riverine, Intermittent, Streambed, Seasonally Flooded, Excavated
SPCC ..... Spill Prevention Control and Countermeasure
SPDES ..... State Pollutant Discharge Elimination System
SSA ..... Sole Source Aquifer
TMDL ..... Total Daily Maximum Load
USACE ..... United States Army Corps of Engineers
USDOT ..... United States Department of Transportation
USGS ..... United States Geological Survey
UB ..... University at Buffalo
WQv ..... Water Quality Volume

This appendix provides additional details on the water resources identified within the Project study area to supplement Section 4.10, "Water Resources" of the Draft EIS.

I.1 REGULATORY CONTEXT AND METHODOLOGY

I.1.1 Federal Regulatory Context

The following federal regulations pertaining to water resources direct the assessment Project effects.

- **Clean Water Act (CWA)** – The objective of the CWA, also known as the Federal Water Pollution Control Act, is to restore and maintain the chemical, physical, and biological integrity of "waters of the United States." Waters of the United States include streams, rivers, wetlands, mudflats, and sandflats that meet the specified requirements defined in 33 CFR 328.3, Definition of Waters of the United States. The CWA regulates point sources of water pollution (such as discharges of municipal sewage and industrial wastewater and discharges of dredged or fill material into navigable waters and other waters of the United States) and non-point source pollution (such as runoff from streets, agricultural fields, construction sites, and mining) (33 U.S. Code [U.S.C.] Section 1251 et seq.).
  - *Water Quality Standards and Classifications* – In accordance with the Federal CWA, surface waters in New York State are classified for their best uses (*e.g.*, fishing, source of drinking water), and standards (allowable levels of pollutants) are set to protect those uses. Letter classes and standards range from A to D in descending order of quality. Standards set forth the maximum allowable levels of chemical pollutants, which are used as the regulatory targets for permitting, compliance enforcement, and assessing the quality of the state's waters. These standards can be either narrative (*e.g.*, "none in amounts that will impair...") or numeric (*e.g.*, "0.001 micrograms per liter") and are found in regulation 6 NYCRR Part 703. The letter classifications and their best uses are described in regulation 6 NYCRR Part 701.
  - *Impaired Waters – CWA Section 303(d)* – This section requires states to identify waterbodies that are not fully supporting their best uses. These waterbodies are then listed on the section's "impaired waters" list. Waterbodies may have been identified as impaired due to fish consumption advisories, public bathing beach closures, or sampling results (high nutrient levels, turbidity [*i.e.*, cloudy with suspended matter], and toxic sediments). States must develop total maximum daily load (TMDL) plans for waterbodies on the Section 303(d) list to reduce the amount of pollutants entering impaired waterbodies. A TMDL calculates the maximum amount of a single pollutant that a waterbody can receive and still meet water quality standards.
  - *Water Quality Certification of Compliance – CWA Section 401* – Under this section, any applicant for a Federal permit or license for an activity that may result in a discharge to waters of the United States must provide to the Federal agency issuing a permit a certificate (either from the State where the discharge would occur or from an interstate water pollution control agency) that the discharge would comply with CWA Sections

301, 302, 303, 306, 307, and 316(b). This certificate is issued by NYSDEC. Water Quality Certification will be performed in accordance with the appropriate requirements at the time of application.

- *Discharge of fill – CWA Section 404* – This section requires authorization from the secretary of the Army—acting through the USACE—to discharge dredged or fill material into waters of the United States. Activities authorized under Section 404 of the CWA must also comply with Section 401 of the CWA. For this Project, any authorization required would be issued from the USACE Buffalo District Office.
- *CWA Section 402 – National Pollutant Discharge Elimination System (NPDES)* – Pursuant to Section 402 of the CWA, stormwater discharges from certain construction activities are unlawful unless they are authorized by a National Pollutant Discharge Elimination System permit or by a State permit program. New York State administers the approved SPDES program with permits issued in accordance with the New York State ECL Article 17, Titles 7, 8 and Article 70.

- **Rivers and Harbors Act of 1899** – The purpose of this act is to protect navigation and navigable channels. Any structures—such as pilings, piers, or bridge abutments—placed in or over navigable waters up to the mean high-water line are regulated pursuant to this act.
  - *Section 9 of the Rivers and Harbors Act of 1899* prohibits the construction of any bridge, dam, dike, or causeway over or in navigable waterways of the United States without congressional approval. The U.S. Coast Guard administers the Bridge Permit Program under the legislative authority of Rivers and Harbors Act Section 9 as well as the General Bridge Act of 1946 (33 U.S.C. Section 525).
  - *Section 10 of the Rivers and Harbors Act of 1899* requires authorization from the secretary of the Army— acting through the USACE—to construct any structure in or over any navigable water of the United States, the excavation from or deposition of material in these waters, or any obstruction or alteration in navigable waters of the United States.
  - *Section 14 of the Rivers and Harbors Act of 1899, codified at 33 U.S.C. 408 (Section 408)* – Section 408 outlines the process that allows alteration to a Federally authorized project and ensures that the proposed project does not pose a risk to the public interest and will not impair the usefulness of the Federally authorized project.

- **EO 11988: Floodplain Management** – This executive order requires Federal agencies to avoid to the extent possible the long-term and short-term adverse effects associated with occupying and modifying floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In addition, if no practicable alternative exists, development in a floodplain must be designed to minimize adverse effect to the floodplain's natural and beneficial values, as well as to minimize the potential risks for flood-related property loss and the loss of human life. U.S. Department of Transportation (USDOT) Order 5650.2 (Floodplain Management and Protection) contains policies and

procedures for implementing EO 11988. For actions with a significant encroachment in the floodplain, USDOT Order 5650.2 requires a project sponsor make a finding that a proposed action is the only practicable alternative and that an evaluation was conducted to identify whether other alternatives are available to avoid or reduce adverse effects on the floodplain. Chapter 23 CFR Section 650, Subpart A Location and Hydraulic Design of Encroachments in Flood Plains, describes policies and procedures for the location and hydraulic design of highway encroachments on floodplains.

- **EO 11990: Protection of Wetlands** – In accordance with USDOT Order 5660.1a, "Preservation of the Nation's Wetlands," Federal agencies must avoid undertaking or providing assistance for new construction in wetlands unless there is no practical alternative to such construction, and a proposed action includes all practicable measures to minimize harm to the wetland. If a proposed action involves unavoidable permanent effects to freshwater wetlands caused by bus, rail, or station installations, an EO 11990 finding may be required.

The following acts were also evaluated and found to not be applicable to the Project:

- Coastal Zone Management Act of 1972 (16 U.S.C. § 1451 et seq.), Coastal Resources Barrier Act of 1982 (16 U.S.C. § 3501 et seq.), Wild and Scenic Rivers Act of 1968 (16 U.S.C. § 1271-1287), and Safe Drinking Water Act (42 U.S.C. § 300f et seq.). The Project is not located near a coastal area or a Wild and Scenic River, so the Coastal Zone Management Act of 1972, the Coastal Resources Barrier Act of 1982, and the Wild and Scenic Rivers Act of 1968 do not apply.
- The Safe Drinking Water Act does not apply to the Project because the Project does not affect any private drinking water wells, and it does not cross any waterbodies that are designated as drinking water sources. In addition, the Project is not within or close to a designated Sole Source Aquifer (SSA) area (the nearest SSA—Cattaraugus Creek Basin Aquifer—is about 30 miles south of the project), so no further review for Section 1424(e) of the Safe Drinking Water Act was required.

I.1.2 New York State Regulatory Context

The following state regulations pertaining to water resources direct the assessment of Project effects.

- **Floodplain Management Criteria for State Projects, New York ECL, Article 36, Implementing Regulations 6 NYCRR Part 502** – All State agencies are to ensure that the use of State lands, and the siting, construction, administration, and disposition of state-owned and state-financed projects involving any change to improved or unimproved real estate are conducted in ways that would minimize flood hazards and losses. Projects are to consider alternative sites on which the project could be located outside the 100-year floodplain—the Flood Hazard Area. Projects to be located within the floodplain are to be designed and constructed consistent with the need to minimize flood damage within the 100-year floodplain and include adequate drainage to reduce exposure to flood hazards. All public utilities and facilities associated with the project are to be located and constructed to

minimize or eliminate flood damage. No project may be undertaken unless the cumulative effect of the proposed project and existing developments would not cause material flood damage to the existing developments.

- **Protection of Waters, ECL Article 15, Title 5, Implementing Regulation 6 NYCRR Part 608** – NYSDEC is responsible for administering the Protection of Waters program and regulation 6 NYCRR Part 608, which governs construction activities on protected surface waters (rivers, streams, lakes, ponds) that are classified as A, B, or C(t).
- **Flood Control Easement, ECL Article 16, Section 0107.13** – Per ECL Article 16, "No person shall construct any improvement, excavate, deposit material or operate a motorcycle, motor-driven cycle, snowmobile or motor vehicle except lawn maintenance equipment upon lands acquired or burdened by a flood control easement without a permit. Permits will be issued by the commissioner where the proposed activity will not interfere with or endanger the flood control works or impede the maintenance or operation of such works."
- **Freshwater Wetlands, ECL Article 24** – NYSDEC is responsible for implementing the Freshwater Wetlands program, which is intended to prevent despoliation and destruction of freshwater wetlands in accordance with the environmental protection regulations of the state. Adjacent areas within 100 feet of mapped NYSDEC freshwater wetlands are also regulated, and most disturbances within the protected wetland and their regulated adjacent areas requires an Article 24 permit from NYSDEC. NYSDEC freshwater wetlands are classified according to their respective functions, values, and benefits. Classifying factors include vegetative cover, ecological associations, special features, hydrological and pollution control features, and distribution and location. Wetlands are classified as Class I, II, III, or IV. Class I wetlands provide the most benefits, while Class IV wetlands provide fewer benefits. The system for classifying wetlands is described in Article 24, 6 NYCRR Part 664.5.
- **New York SPDES ECL Article 3, Title 3; Article 15; Article 17, Titles 3, 5, 7, and 8; Article 21; Article 70, Title 1; Article 71, Title 19; Implementing Regulations 6 NYCRR Articles 2 and 3** – ECL Article 17, Title 8, Water Pollution Control, authorized the creation of an SPDES to regulate discharges to New York waters. Activities requiring a SPDES permit include point source discharges of wastewater into surface or groundwater of the state, including the intake and discharge of water for cooling purposes, constructing or operating a disposal system (*e.g.*, sewage treatment plant), discharge of stormwater, and construction activities that disturb one or more acres. Stormwater runoff from paved surfaces and land development generally is considered a "non-point source" discharge. As required by ECL Article 17 and by the SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-25-001), non-point source pollution from new development must be captured and treated prior to discharge. Stormwater treatment practices consist of such measures as detention/retention basins, infiltration practices, or green practices designed to minimize the generation of stormwater runoff. Within existing urbanized areas designated as municipal separate storm sewer systems (MS4), additional measures are required by State and Federal laws, including the adoption of local stormwater regulations, maintenance of existing stormwater facilities, education, and monitoring.

I.1.3 County and Local Regulatory Context

The following local regulations pertaining to water resources direct the assessment of Project effects.

- **City of Buffalo Green Code:** This Ordinance is adopted in accordance with a comprehensive plan to promote the interest and welfare of the people through standards that address the orderly and compatible use of land, the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and type of blocks, thoroughfares, and open spaces**.** All land development activity must manage construction and post-construction stormwater runoff in accordance with this code.

- **Town of Amherst, New York/Part II: General Legislation/Zoning, Part 7 General Development Standards, Section 7-7 Provisions for Flood Hazard Reduction**. The purpose of this local law is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas.
- **Town of Amherst, New York/Part II: General Legislation, Chapter 172 Stormwater and Erosion Control; Illicit Discharges**. The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the Town of Amherst through the regulation of non-stormwater discharges to the MS4 to the maximum extent practicable as required by Federal and State law.
- **Town of Amherst Local Waterfront Revitalization Program (LWRP), Chapter 205**. The purpose of this article is to provide a framework for the Town of Amherst (Town) to incorporate the policies and purposes contained in the Town's Local Waterfront Revitalization Program (LWRP) when reviewing applications for actions or direct Town actions located within the Waterfront Revitalization Area (WRA); and to assure that such actions and direct actions undertaken by the Town are consistent with the LWRP policies and purposes.
- **Town of Tonawanda, New York/Part II: General Legislation, Chapter 73 Stormwater Management**. This chapter is intended to protect the health and welfare of those residing in the Town of Tonawanda by preventing the dangers arising from improper drainage, unwise diversion, use and obstruction of streams and watercourses, and to plan for the present and future use of natural drainage systems and watercourses.
- **Town of Tonawanda, New York/Part II: General Legislation, Chapter 92 Flood Damage Prevention**. This chapter promotes public health, safety, and general welfare, and minimizes public and private losses due to flood conditions in specific areas.
- **City of Buffalo, New York/The Code/Part II, General Legislation, Chapter 491, Water and Water Pollution**. This chapter includes provisions regarding contamination of watercourses.
- **Erie County Code Article 10 – Department of Environment and Planning.** The Commissioner of Environment and Planning shall administer the planning, environmental compliance, drainage, flood control, solid waste management, sewerage planning,

construction, and management functions vested in the executive branch of the County government, provided, however, that this provision shall not be deemed to restrict the powers or duties of any administrative body appointed, designated, or established in accordance with the County law and the Erie County Charter and Administrative Code.

I.1.4 Methodology

The study area for water resources consists of a 150-foot-wide area around the centerline of the Project alignment to account for the Project footprint as well as an additional buffer. The portion of the study area south of I-290 can be characterized as urban residential and commercial land uses with closed drainage, and the portion of the study area north of I-290 can be characterized by suburban land uses with intermittent open drainage and open waterbodies. Ellicott Creek, Bizer Creek, Lake LaSalle, and several other streams and open swales are within the study area.

Existing conditions for water resources within the study area were characterized using the following data sources:

- NYSDEC's Environmental Resource Mapper for data on streams, waterbodies, and freshwater wetlands (accessed on April 24/26, 2022, November 12, 2023, January 3, 2024, and April 1, 2024)
- USFWS NWI wetlands maps (accessed on April 26, 2022, September 2023, November 12, 2023, and January 4, 2024)
- U.S. Department of Agriculture NRCS soils maps (accessed on March 3, 2023, and January 3/4, 2024)
- Federal Emergency Management Agency Flood Insurance Rate Maps for areas that may be located within flood hazard areas (accessed on April 19,2019)
- The Final 2016 New York State Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy (November 2018) (accessed April 2022)

The study area was reviewed for wetlands in accordance with the criteria defined in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. Results of the field investigations are presented in Section I.2.1.3 under the subsection titled, "Delineated Wetlands", as well as in the Wetland Determination Report (May 2024) prepared for the Project (Appendix I2).

I.2 AFFECTED ENVIRONMENT

I.2.1 Freshwater Wetlands

An assessment of the study area was conducted for the purpose of identifying wetland resources . The NYSDEC Environmental Resource Mapper and the USFWS NWI mapping documented several wetlands, which are in a portion of the study area north of I-290, as shown in Figure I.2-1 and Figure I.2-2. A field assessment to identify potential wetlands was conducted on June 24,

2019. On-site wetland determinations and delineations for the Bizer Creek, Ellicott Creek, and the John James Audubon Parkway Sites were conducted in July and September of 2021. On-site wetland determinations and delineations at the Niagara Falls Boulevard site were conducted on August 3, 2022. On-site wetland determinations and delineations at the Maple Road Site were conducted on October 11, 2023. The results of these efforts are presented in this section under the subsection titled, "Delineated Wetlands" and detailed in the Wetland Determination Report (May 2024) for this Project. The approximate location of delineated wetlands is shown in Figure I.2-1 and Figure I.2-2. A jurisdictional determination from USACE for Federal wetlands and from NYSDEC for State wetlands will be obtained during preparation of the Final EIS.

Figure I.2-1. State-Regulated Wetlands, NWI Wetlands, and Field Delineated Wetlands within the Study Area South of I-290

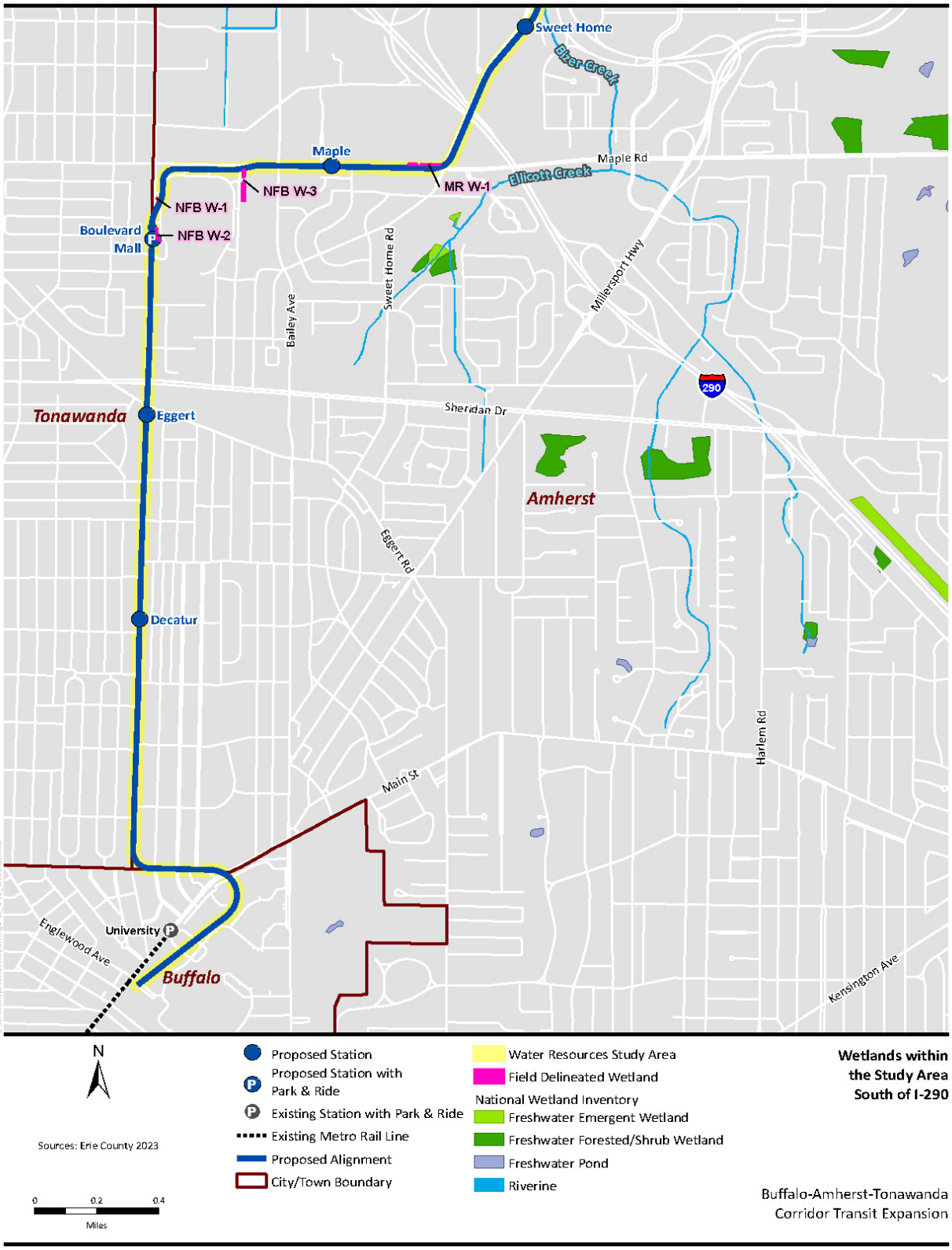
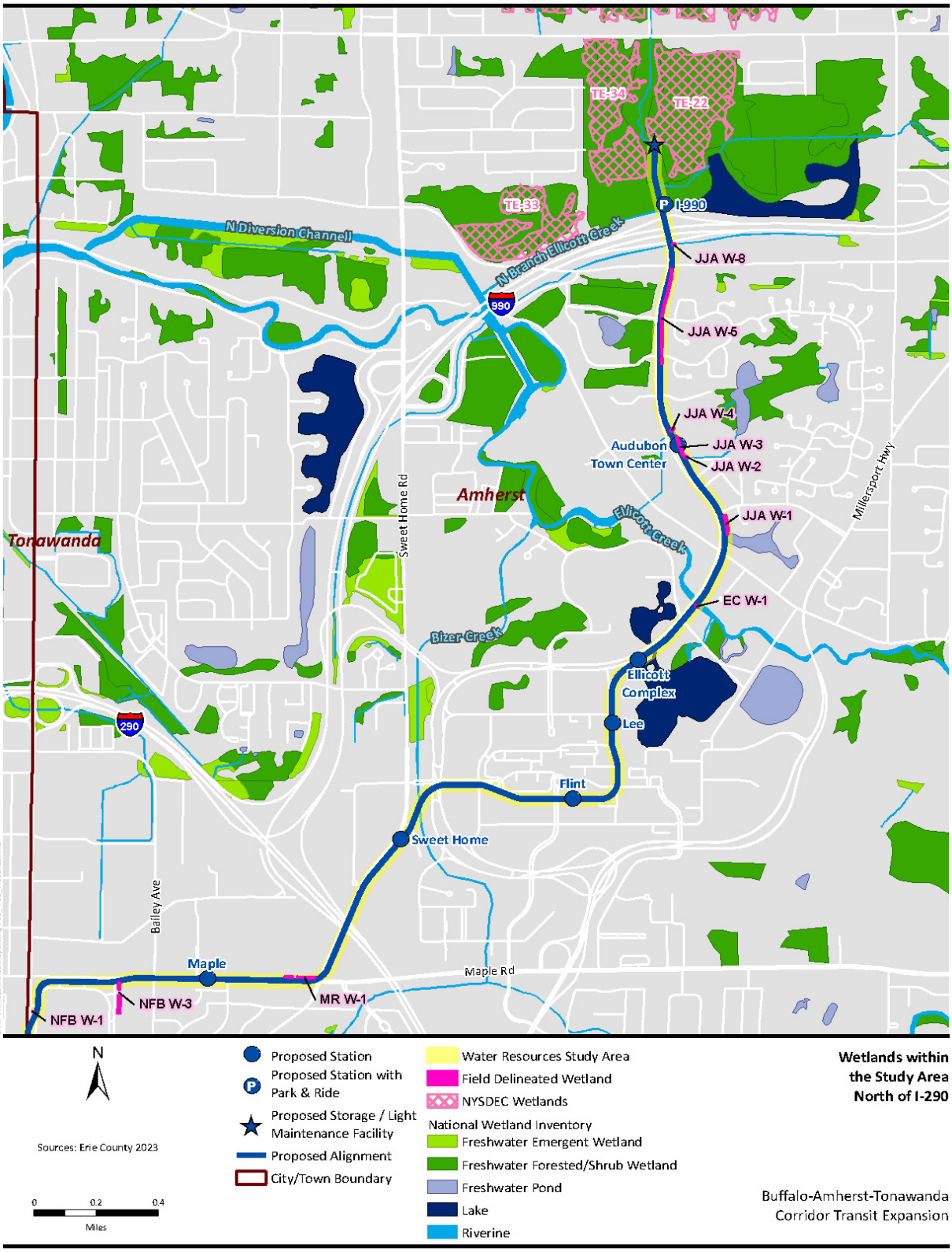


Figure I.2-2. State-Regulated Wetlands, NWI Wetlands, and Field Delineated Wetlands within the Study Area North of I-290



I.2.1.1 Federal Mapped Wetlands and Open Water Habitats

As shown in Figure I.2-1, no Federal mapped freshwater wetlands or open water habitats are within the study area south of I-290. The study area north of I-290, includes lacustrine habitats, riverine habitats, palustrine forested wetlands, and palustrine scrub-shrub wetlands identified in the NWI (Figure I.2-2) and described below.

- The lacustrine habitat is Lake Lasalle, an artificial waterbody on the University at Buffalo (UB) North Campus. The John James Audubon Parkway and the Project Corridor cross Lake LaSalle where it narrows to about 40 feet. Lake LaSalle is classified as a L1UBHx habitat (lacustrine, limnetic, unconsolidated bottom, permanently flooded, excavated) in the NWI.
- Riverine habitats include Ellicott Creek, Bizer Creek, and five artificial drainage ditches or re-channeled natural drainages.
  - Ellicott Creek traverses the study area on the northeast side of UB's North Campus. It is about 100 feet wide where the John James Audubon Parkway crosses it. Ellicott Creek is classified as a R2UBH habitat (riverine, lower perennial, unconsolidated bottom, permanently flooded) in the NWI. Riverine habitats may or may not contain wetlands.
  - Bizer Creek is classified as a riverine habitat. Riverine habitats can have wetlands in their riparian zones. However, Bizer Creek does not have a wetland riparian zone within the study site, which is south of Rensch Road. The creek was re-channeled around the UB North campus and is constrained by sloping concrete banks and a concrete bottom within a small gorge comprising bedrock escarpments and talus slopes above the concrete stream banks. These bedrock and talus slopes comprise the upland riparian zone for Bizer Creek. The creek is about 18-20 feet wide within the study site. The stream bed materials of Bizer Creek consist of fractured shale cobbles and gravel that originated from the adjoining bedrock escarpments and talus slopes. These natural materials overlay a presumed concrete channel bed. Bizer Creek is identified as Ditch 5 on the Town of Amherst Open Drainage Map. Bizer Creek is classified as a R2UBHx habitat (riverine, lower perennial, unconsolidated bottom, permanently flooded, excavated) in the NWI.
  - Five artificial drainage ditches or re-channeled natural drainages classified as R4SBCx habitats (riverine, intermittent, streambed, seasonally flooded, excavated) in the NWI traverse the study area north of Ellicott Creek. See Appendix I2: "Wetland Delineation Report" for the location of these wetland resources. The first, and northernmost channel, flows south into the northern terminus of the project site from forested and scrub-shrub/emergent marsh wetlands north of the study site. This channel is identified as Ditch 4B on the Town of Amherst Open Drainage Map. Ditch 4B flows into the second channel that flows from east to west just north of the artificial lake east of the project site and then flows into the northern terminus of the project site. This channel is identified as Ditch 4 on the Town of Amherst Open Drainage Map. The third channel drains the artificial lake east of, and adjacent to, the northern terminus of the project site and flows

west into Ditch 4. The fourth channel is located along the southern fill slopes of I-990 and its on-ramp and off-ramp the John James Audubon Parkway. The fifth and southernmost channel is the outlet for Laker Audubon and is identified as Ditch 6 on the Town of Amherst Open Drainage Map. The second through fifth described channels flow in a westerly direction into Ellicott Creek.

- Three mapped palustrine forested wetlands are located within the study site. These wetlands are classified as: (1) PFO1B (palustrine, forested, broad-leaved, deciduous, saturated wetland), located along the west side of the northernmost portion of the John James Audubon Parkway, between Bryant Woods North and Bryant Woods South, and (2) PFO1Bd (palustrine, forested, broad-leaved deciduous, saturated, partly drained/ditched wetland), located north of I-990. This second wetland type includes two separate wetlands that are east and west of palustrine scrub-shrub wetlands within the study site. The portions of these PFO1Bd wetlands within the study site have been cleared for a housing development (Muir Woods); some houses are built and being rented. The eastern portion of a forested wetland between Bryant Woods North and Bryant Woods South along the John James Audubon Parkway is within the western edge of the study site. The wetland classification (PFO1B) was verified by trained wetland delineators during a field investigation on October 11, 2023. The dominant vegetation included red maple (*Acer rubrum*), gray dogwood (*Cornus racemosa*), and three-way sedge (*Dulichium arundinaceum*). This wetland was not in the area where a formal wetland determination was conducted because it is outside the potential limits of disturbance of the project, so it is not described in the Wetland Determination Report. However, this wetland was described because a portion of it is within the larger study site.
- Two palustrine scrub-shrub/emergent persistent wetlands are located within the study area north of I-990. These wetlands are classified as: (1) PSS1/EM1B (palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, saturated wetland) located at the north terminus of the project corridor on both sides of the proposed track alignment, and (2) PSS1/EM1Bd (palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, saturated, partly drained/ditched wetland) located at the north terminus of the Project corridor, east of the proposed alignment. The portions of both wetland types within the study site have been cleared for a housing development (Muir Woods); some houses are built and being rented.

I.2.1.2 State Freshwater Wetlands

Mapped natural resources and environmental features were reviewed using the NYSDEC Environmental Resource Mapper. The NYSDEC mapping shows the following wetlands near the Project: State Wetland TE-22 (approximately 54 acres) and TE-34 (approximately 42 acres). Both of these wetlands are generally palustrine wetland that is forested with broad-leaved deciduous trees. The Project would be located within the 100-foot buffer zone of the mapped boundaries for TE-22. The Project would be outside (approximately 130 feet) the 100-foot buffer of wetland TE-34. Land clearing and construction of buildings associated with a mixed-use development (Muir Woods) have occurred within the 100-foot-wide regulated adjacent area, and the 500-foot-wide state wetland checkzone of wetland TE-34.

North of I-990, the Project includes plans for BRT guideway or LRT tracks, a park & ride facility, and a light maintenance/storage facility. These Project elements would be incorporated into the Muir Woods development project as documented in the conceptual plan for the Muir Woods development. The Muir Woods development has obtained a NYSDEC Article 24 permit under the name of Muir Woods development – "Site B" (Permit No. 9-1422-00398/00001). The permit is valid for only that project, activity, or operation expressly authorized; therefore, incorporation of the Project into the Muir Woods development will require a permit modification. Written approval of any permit modification will be required from the NYSDEC Permit Administrator.

As per the amended 6 NYCRR Part 664, Freshwater Wetlands Jurisdiction and Classification that took effect on January 1, 2025, Metro has submitted a parcel jurisdictional determination to NYSDEC.24.

I.2.1.3 Field Delineated Wetlands

Wetland determinations were based on the interpretation of the presence of hydrophytic vegetation, hydric soils, and indicators of wetland hydrology as outlined in the USACE 1987 Wetlands Delineation Manual, and the 2012 Northcentral and Northeast Region, Regional Supplement to the Corps of Engineers Wetlands Delineation Manual. The Routine On-Site Inspection Methodology as set forth in the manuals was employed.

The presence of wetlands at the Bizer Creek Site and the Ellicott Creek Site was determined on July 20, 2021. The presence of wetlands at the John James Audubon Parkway Site was determined on September 10, 15, and 16, 2021. The presence of wetlands at the Niagara Falls Boulevard Site was determined on August 3, 2022. Also, the presence of wetlands along Sweet Home Road from the intersection with Maple Road to the I-290 overpass was determined on August 3, 2022. No wetlands were identified along Sweet Home Road so this area was not designated as a site.

- The Bizer Creek Site in the vicinity of where the Project alignment would cross the creek comprises bedrock cliffs, talus slopes, and a concrete-constrained creek bed and banks. Therefore, it was determined no wetlands were present.
- The Ellicott Creek Site consisted of the banks of Ellicott Creek both upstream and downstream of the John James Audubon Parkway Bridge (including the pedestrian/bicycle crossing) within 50 feet of the bridge on both the southwest and northeast banks of Ellicott Creek south of the John James Audubon Parkway Bridge and pedestrian/bicycle trail crossing.
  - Wetland EC W-1 is in the south quadrant. The wetland area is 159 square feet (0.004 acre). Vegetation is dominated by hydrophytic spotted lady's-thumb (*Persicaria maculosa*). The wetland is a palustrine emergent wetland with persistent vegetation (PEM1; not depicted in the NWI). Wetland EC W-1 provides some wetland function because it is immediately adjacent to Ellicott Creek. The primary function is sediment retention. However, the function of this wetland to the ecological condition of Ellicott

Creek in the immediate area, and to the overall health of the watershed, is limited due to its small size.

- The John James Audubon Parkway Site consists mostly of the vacated northbound lane of the Parkway along with the adjacent area to approximately 100 feet east of the Parkway pavement in the area where the Project alignment would deviate the roadway north of the Buffalo Niagara Association of Realtors Building to south of the driveway extending to the parking lot for the Town of Amherst Court Building.

  – Wetland JJA W-1 is east of the John James Audubon Parkway in an excavated channel that is the outlet of Muir Lake. This wetland is part of Ditch 8 according to the Town of Amherst Open Drainage Map. Wetland JJA W-1 is a combination of a palustrine emergent wetland with persistent vegetation (PEM1; not depicted in the NWI), and an excavated, permanently flooded, upper perennial, riverine system with an unconsolidated bottom (R3UBHx; not depicted in the NWI). The wetland area is 7,545 square feet (0.173 acre). Vegetation in Wetland JJA W-1 is dominated by hydrophytic broadleaf cattail and narrowleaf cattail. The primary functions of Wetland JJA W-1 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the stream channel where it is located.
  – Wetland JJA W-2 is east of the John James Audubon Parkway in an excavated channel that is the outlet of Lake Audubon. This wetland is part of Ditch 6 according to the Town of Amherst Open Drainage Map. Wetland JJA W-2 is an excavated, intermittent, riverine habitat with a seasonally flooded streambed (R4SBCx) based on the NWI. The wetland area within the Project site is 703 square feet (0.016 acre). Vegetation in Wetland JJA W-2 is dominated by hydrophytic species; gray willow (*Salix bebbiana*) in the sapling/shrub layer, and broadleaf cattail in the herb stratum. The primary functions of Wetland JJA W-2 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the stream channel where it is located.
  – Wetland JJA W-3 is east of the John James Audubon Parkway in the same excavated channel/ditch as Wetland JJA W-2 that is the outlet of Lake Audubon. This wetland is downstream (north) from Wetland JJA W-2 and is part of Ditch 6 according to the Town of Amherst Open Drainage Map. Wetland JJA W-3 is an excavated, intermittent, riverine habitat with a seasonally flooded streambed (R4SBCx) based on the NWI. The wetland area is 5,305 square feet (0.122 acre). Vegetation in Wetland JJA W-3 is dominated by hydrophytic species; gray willow in the sapling/shrub layer, and broadleaf cattail and reed canary grass in the herb stratum. The primary functions of Wetland JJA W-3 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the

small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the stream channel where it is located.

- Wetland JJA W-4 is east of the John James Audubon Parkway in a detention basin that drains parking lots and runoff from the fill slopes along the east side of the Parkway, along with collecting water from Wetland JJA W-3 and Wetland JJA W-5. This wetland is part of Ditch 6 according to the Town of Amherst Open Drainage Map. Wetland JJA W-4 is an excavated, intermittent, riverine habitat with a seasonally flooded streambed (R4SBCx) based on the NWI. The wetland area within the Project site is 1,679 square feet (0.039 acre). Vegetation in Wetland JJA W-4 is dominated by hydrophytic common reed. The primary functions of Wetland JJA W-4 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the stream channel where it is located.
- Wetland JJA W-5 is in a roadside ditch east of the John James Audubon Parkway. The wetland is in three sections that are separated by roads with culverts. The wetland area within the Project site totals 19,011 square feet (0.436 acre). A small portion of the northern segment of the wetland extends east beyond the area that was delineated for the Buffalo-Amherst-Tonawanda Corridor Transit Expansion Project. Vegetation in Wetland JJA W-5 is dominated by hydrophytic species; gray willow in the sapling/shrub layer, and common reed grass and broadleaf cattail in the herb stratum. Based on the vegetation, Wetland JJA W-5 is a palustrine emergent wetland dominated by phragmites australis (PEM5; not depicted in the NWI). The primary functions of Wetland JJA W-5 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the stream channel where it is located.
- JJA W-6 is in a drainage ditch east of the John James Audubon parkway at the base of the fill slope of the on-ramp heading east from the John James Audubon Parkway to the northbound lane of Interstate 990. Wetland JJA W-6 is an excavated, intermittent, riverine habitat with a seasonally flooded streambed (R4SBCx) based on the NWI. The wetland area within the Project site is 822 square feet (0.019 acre). Vegetation in Wetland JJA W-6 is dominated by the hydrophytic species common reed. The primary functions of Wetland JJA W-6 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the stream channel where it is located.

- The Niagara Falls Boulevard Site includes: (1) Niagara Falls Boulevard from about 200 feet north of Treadwell Road to the intersection with Maple Road; (2) Maple Road and the northern end of the Boulevard Mall parking lot—up to 75 feet south of Maple Road)—from

Niagara Falls Boulevard to Alberta Drive; and (3) the northern 600 feet of Alberta Drive from Maple Road, south to the southern end of the Wegmans building.

- Wetland NFB W-1 is adjacent to and east of Niagara Falls Boulevard, south of Maple Road, and west of the Boulevard Mall parking lot. This wetland is in a detention basin lined with cobbles. The wetland area is 87 square feet (0.002 acre). Vegetation in Wetland NFB W-1 is dominated by hydrophytic white panicled American-aster (Symphyotrichum lanceolatum). Based on the vegetation, this wetland is classified as a palustrine emergent wetland (PEM1; not depicted in the NWI). The primary functions of Wetland NFB W-1 are sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the area where it is located.
- Wetland NFB W-2 is adjacent to and east of Niagara Falls Boulevard, south of Maple Road, and west of the Boulevard Mall parking lot. This wetland is in a ditch within a detention basin lined with cobbles. The wetland area is 1,475 square feet (0.034 acre). Vegetation in Wetland NFB W-2 is dominated by hydrophytic common reed. Based on the vegetation, this wetland is classified as a palustrine emergent wetland dominated by Phragmites australis (PEM5; not depicted in the NWI). The primary functions of Wetland NFB W-2 are floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the area where it is located.
- Wetland NFB W-3 was adjacent to and east of Alberta Drive, south of Maple Road, and west of the Olive Garden restaurant and Wegmans grocery store when it was sampled and delineated on August 3, 2022. This wetland was in two detention basins connected by a culvert under an unnamed road. The total wetland area was 14,795 square feet (0.340 acre). Vegetation in Wetland NFB W-3 was dominated by hydrophytic common reed, broadleaf cattail, and narrowleaf cattail. Based on the vegetation at the time of sampling, this wetland was classified as a palustrine emergent wetland dominated by Phragmites australis (PEM5; not depicted in the NWI). The primary functions of Wetland NFB W-3 were floodflow alteration, sediment retention, nutrient retention, and wildlife habitat. The functions were limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provided functions and contributes to the ecological condition of the area where it was located. On a follow up site visit on October 5, 2023, it was discovered that the detention basins had been landscaped, the wetland vegetation had been recently removed, and the area had been covered with mulch and seeded with grass that was only recently germinated and sprouted. The detention basin had been transformed into a narrow ditch with flowing water.

- The Maple Road Site is a narrow strip of mown lawn and a drainage ditch about 590 feet east to west and about 55 feet north to south. This site is adjacent to, and northwest of, the

intersection of Maple Road and Sweet Home Road, and south of the parking lot for Maple Ridge Centre.

– Wetland MR W-1 is in two sections in a drainage ditch connected by two culverts under the mall driveway. The total wetland area is 3,407 ft2 (0.078 acre). Vegetation in Wetland MR W-1 is mowed and dominated by hydrophytic fall panic grass (Panicum dichotomiflorum) and bird-eye pearlwort (Sagina procumbens). Based on the vegetation, this wetland is classified as a palustrine emergent wetland with persistent vegetation (PEM1; not depicted in the NWI). The primary functions of Wetland MR W-1 are sediment retention and nutrient retention. The functions are limited in their overall contribution to the health of the watershed due to the small size of the wetland. However, this wetland provides functions and contributes to the ecological condition of the area where it is located.

I.2.2 Detention Basins

Detention basins constructed to manage stormwater, including surface water from parking lots, are in the vicinity of the Boulevard Mall, Sweet Home Middle School, UB, and several other large commercial developments. Portions of some detention basins were described and delineated as wetlands. They are identified and described in the surface water section below to show the path of stormwater from the Project.

I.2.3 Surface Waters

The study area is within the Ellicott Creek watershed (HUC 10 0427010104), which drains in a westerly direction to the Niagara River. Surface waters within the study area drain through local streams and drainage ways and ultimately discharge to Ellicott Creek which discharges to Tonawanda Creek (Erie Canal in this area) then to the Little River (which is a 1-mile diversion of a portion of the Niagara River created by Tonawanda Island), and then to the Niagara River. Ellicott Creek drains an area of 120 square miles, Tonawanda Creek drains an area of 644 square miles, and the Niagara River drains much of the Great Lakes (an area of 264,000 square miles). In general, the watershed of Ellicott Creek is characterized by disturbances associated with roadway, commercial, industrial, and residential development.

The surface waters in the study area are waters of the United States under Federal jurisdiction because they are connected to Tonawanda Creek, Little River, and the Niagara River, which are Federal navigable waters. Most surface waters within the study area are human-made ponds, ditches, and detention basins near highways and other infrastructure and, in many cases, have been channelized or diverted underneath roads and ramps via culverts. The ditches and detention basins are maintained by the individual landowners and are not exempt from regulation, except the drainage ditches along the John James Audubon Parkway which are owned by the Town of Amherst.

- Ellicott Creek is a NYSDEC Class B (Standard B) stream. Swimming and other contact recreation are the best usages for Class B waters, which must also be suitable for fish

propagation and survival. Ellicott Creek flows westward through the alignment of the LRT Build Alternative and the BRT Build Alternative at the John James Audubon Parkway bridge between Frontier Road and North Forest Road. Ellicott Creek was realigned (straightened) in this area when the John James Audubon Parkway bridge was built in 1983. The Ellicott Creek drainage basin upstream of its intersection with the alignment of the LRT Build Alternative and the BRT Build Alternative is approximately 91 square miles in size. Ellicott Creek and its tributaries described below are considered Section 303(d)-listed impaired waters for aquatic life (*i.e.*, fish, shellfish, and wildlife protection and propagation), fish consumption, public bathing, recreation, shellfishing, and water supply. This segment of Ellicott Creek is not listed as a U.S. navigable waterway; however, Ellicott Creek is a state-regulated navigable water within the study area. Ellicott Creek is classified in the NWI as a R2UBH habitat (riverine, lower perennial, unconsolidated bottom, permanently flooded).

- Bizer Creek is a NYSDEC Class C (Standards C) water. Fishing is the best usage for Class C waters, which must also be suitable for fish, shellfish, and wildlife propagation and survival. The water quality must be suitable for primary and secondary contact recreation, though other factors could limit the use for these purposes. Bizer Creek has a drainage area of approximately 6 square miles upstream of the alignment of the LRT Build Alternative and the BRT Build Alternative. The creek flows northward through a culvert across the alignment of the LRT Build Alternative and the BRT Build Alternative at Rensch Road between Sweet Home Road and John James Audubon Parkway and outlets to Ellicott Creek west of the alignment of the LRT Build Alternative and the BRT Build Alternative. The banks of the creek are concrete lined and the bottom of the creek is presumed to be concrete as well. The stream bed consists of fractured shale cobbles and gravel overlying the presumed concrete bottom. The shale originated from the adjoining bedrock escarpments and talus slopes that are above the concrete stream banks. Bizer Creek is relatively straight in the area where the alignment of the LRT Build Alternative and the BRT Build Alternative would cross. Bizer Creek was realigned in the late 1960s to allow for the construction of the UB North Campus. Bizer Creek formerly meandered through the land now used as UB North Campus and outlets into Ellicott Creek approximately 0.75 mile southeast of its current outlet to Ellicott Creek. Bizer Creek is identified as Ditch 5 on the Town of Amherst Open Drainage Map. Bizer Creek is classified in the NWI as a R2UBHx habitat (riverine, lower perennial, unconsolidated bottom, permanently flooded, excavated).
- Lake LaSalle is a 60-acre human-made lake that was constructed as part of the UB North Campus in1970. Much of Lake LaSalle was constructed on the former alignment of Bizer Creek. Lake LaSalle is not specifically mapped or classified by NYSDEC; however, based on the classification of the former stretch of Bizer Creek in this location (which was later realigned to the west), Lake LaSalle can be considered a NYSDEC Class C (Standard C) water. Lake LaSalle has several outlet structures to Ellicott Creek. The narrows that John James Audubon Parkway crosses is armored with large riprap, is approximately 50 feet wide, and connects the eastern and western ends of Lake LaSalle. Lake LaSalle is classified in the

NWI as a L1UBHx habitat (lacustrine, limnetic, unconsolidated bottom, permanently flooded, excavated).

- Muir Lake is a 6.3-acre human-made pond east of the John James Audubon Parkway and north of North Forest Road. This pond is not classified by the NYSDEC. The outlet to the lake is an excavated channel described below. Muir Lake is classified in the NWI as a PUBHx habitat (palustrine, unconsolidated bottom, permanently flooded, excavated).
- The outlet to Muir Lake is a stream flowing north through an excavated channel along the eastern side of John James Audubon Parkway for about 315 feet. This excavated channel is wetland JJA W-1 in the Wetland Determination Report. This channel is identified as Ditch 8 on the Town of Amherst Open Drainage Map. It is not identified in the NWI, but it was classified as a PEM1/R3UBHx habitat (palustrine, emergent marsh with persistent vegetation/riverine, upper perennial, unconsolidated bottom permanently flooded, excavated) when it was sampled on September 10, 2021. Water from this channel flows west under the Parkway and into Ellicott Creek.
- An excavated drainage that serves as the outlet for Lake Audubon and Walton Pond flows westward to the John James Audubon Parkway, turns north along the eastern side of the Parkway along the alignment of the LRT Build Alternative and the BRT Build Alternative, and flows north under Gordon R. Yaeger Drive into a detention basin (wetland JJA W-4 in the Wetland Determination Report) before flowing west under the Parkway through a culvert to ultimately drain into Ellicott Creek. This drainage is identified as Ditch 6 on the Town of Amherst Open Drainage Map. Three wetlands were delineated in this drainage and are described in the Wetland Determination Report: JJA W-2, JJA W-3, and JJA W-4. These wetlands are classified in the NWI as R4SBCx habitats (riverine, intermittent, streambed, seasonally flooded, excavated). Wetland JJA W-2 and wetland JJA W-3 are south of Gordon R. Yaeger Drive. Wetland JJA W-4 is in the detention basin north of Gordon R. Yaeger Drive. Water from wetland JJA W-5 (described below) flows south about 1,140 feet through a culvert into wetland JJA W-4. Wetland JJA W-3 was sampled on September 10, 2021. Wetlands JJA W-2 and JJA W-4 were sampled on September 15, 2021. The drainage area for this drainage is approximately 0.29 square mile.
- The roadside ditch along the eastern side of John James Audubon Parkway from Dodge Road south to about 120 feet south of the southern end of the Partridge Run loop, conveys stormwater southward through a culvert for about 1,140 feet to a water detention basin east of the Parkway and north of Gordon R. Jaeger Drive (wetland JJA W-4 in the Wetland Determination Report). This ditch is not mapped in the NWI, but it was classified as a palustrine emergent wetland dominated by *Phragmites australis* (PEM5) when it was delineated in the field as part of the wetland survey (wetland JJA W-5) on September 15, 2021.
- Drainage ditches at the base of the fill slopes south of the I-990 ramps convey stormwater westward toward Ellicott Creek. These waterways are classified in the NWI as R4SBCx habitats (riverine, intermittent streambed, seasonally flooded, excavated). The western end

of the ditch that is east of John James Audubon Parkway and south of the eastbound on-ramp from the Parkway to I-990 was delineated as wetland JJA W-6 and is described in the Wetland Determination Report. It is not identified in the NWI but was classified as a palustrine emergent wetland dominated by *Phragmites australis* (PEM5) when it was sampled on September 16, 2021.A system of drainage ditches (part of Ditch 4 on the Amherst Open Drainage Map) is north of the terminus of John James Audubon Parkway. This drainage system within the study site consists of: (1) a ditch that drains wetlands east of the study site, (2) a ditch that conducts water from a human-made pond east of the study site, and (3) a ditch emanating north of the study site between State regulated wetlands TE-22 and TE 34 that drains into the ditch that drains wetlands east of the study site. These ditches are classified in the NWI as R4SBCx habitats (riverine, intermittent streambed, seasonally flooded, excavated). The ditch that drains wetlands east of the study site is classified in the NYSDEC Environmental Resource Mapper as a Class C (Standard C) waterbody. This drainage system conveys water westward across the alignment of the LRT Build Alternative and the BRT Build Alternative to Ellicott Creek. The area of this drainage system upstream of the Project Corridor is approximately 5.5 square miles.

- Portions of the roadside ditches along the western side of John James Audubon Parkway from the offramp of the northbound lane of I-990, south to about 75 feet south of the National Grid powerline right-of-way, were classified as PEM5 wetlands (palustrine emergent wetland dominated by *Phragmites australis*). These wetlands were not in the area where a formal wetland determination was conducted because they are outside the potential limits of disturbance of the project, so they are not described in the Wetland Determination Report. However, these wetlands are within the larger study site, so they were identified as PEM5 wetlands during a field investigation conducted on November 3, 2023, by trained wetland delineators. These wetlands are too small to be depicted in the NWI.
- The roadside ditch along the western side of John James Audubon Parkway from about 75 feet south of the National Grid powerline right-of-way, south to the northern edge of the lawn of 501 John James Audubon Parkway, is a combination of PEM5 (palustrine emergent wetland dominated by *Phragmites australis*) and PSS1 (palustrine, scrub-shrub, broad-leaved, deciduous) wetlands dominated by large gray willow (*Salix cineria*). These wetlands were not in the area where a formal wetland determination was conducted because they are outside the potential limits of disturbance of the project, so they are not described in the Wetland Determination Report. However, these wetlands are within the larger study site, so they were described as PEM5/PSS1 wetlands during a field investigation conducted on November 3, 2023, by trained wetland delineators. These wetlands are too small to be depicted in the NWI.
- Portions of two detention basins on the west side of the Boulevard Mall and east of the northbound lanes of Niagara Falls Boulevard contain standing water, invasive common reed (*Phragmites australis)*, and other wetland plants. These detention basins were constructed to drain stormwater from the parking lots of the Boulevard Mall and drain into the local storm sewer. These wetlands were not identified in the NWI, but one wetland (NFB W-1) was

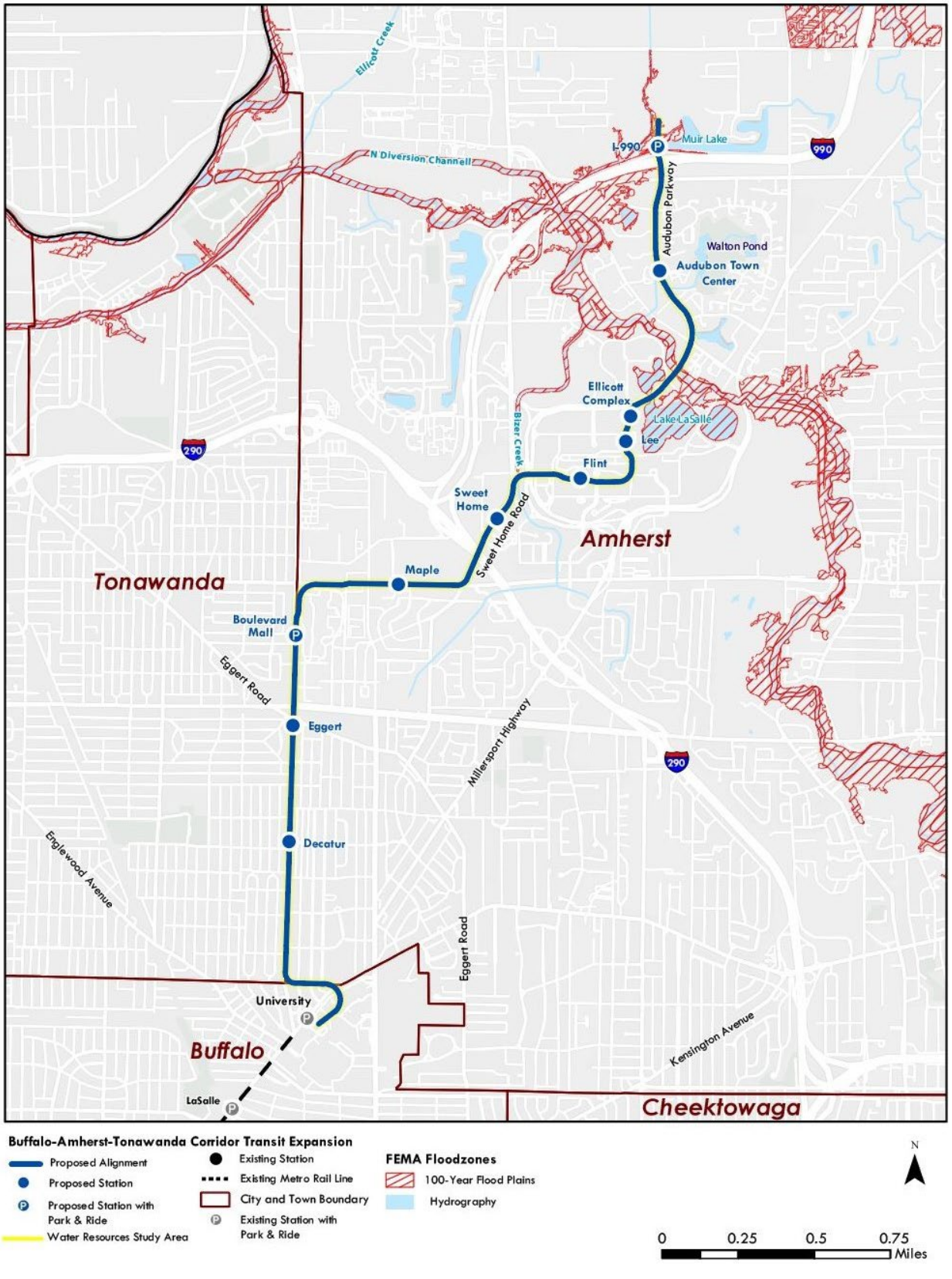
identified as a palustrine emergent wetland (PEM1), and one wetland (NFB W-2) was identified as a palustrine emergent wetland dominated by *Phragmites australis* (PEM 5) when they were delineated on August 3, 2022. These wetlands are described in the Wetland Determination Report.

- A detention basin southeast of the intersection of Maple Road and Alberta Drive drains stormwater from the parking lots of adjacent businesses into the local storm sewer. This basin contained standing water and was dominated by common reed and broadleaf cattail (*Typha latifolia*). Part of this detention basin consisted of a palustrine emergent wetland (PEM1) that is described in the Wetland Determination Report. The above information was collected on August 3, 2022. It was observed on October 5, 2023, that the wetland vegetation in this detention basin had been removed and the basin had been landscaped, seeded, and mulched. The detention basin had been transformed into a narrow ditch with flowing water.
- A detention basin at Sweet Home Middle School is located on the eastern side of the property along Maple Road and drains the school parking lot and athletic fields into the local storm sewer. This basin is within the study site but will not be affected by the Project. It intermittently holds standing water. Most of the basin is mowed grass, but a small area is dominated by invasive common reed, and some common cattail grows around the inlet of the overflow culvert. The basin is enclosed by a locked safety fence, so it was not determined if the two areas with hydrophytic vegetation (common reed, cattail) are wetlands. This information was collected on October 5, 2023.
- A drainage ditch is northwest of the intersection of Maple Road and Sweet Home Road. It drains stormwater from the parking lots of adjacent businesses north of the ditch into the local storm sewer into the local storm sewer. This ditch contains standing water, fall panic grass (Panicum dichotomiflorum), and bird-eye pearlwort (Sagina procumbens). It is a palustrine emergent wetland (PEM1) that is described in the Wetland Determination Report. This information was collected on October 11, 2023.

I.2.4 Floodplains

Portions of the study area are within the 100-year floodplain (Figure I.2-3)—the area with a one percent chance of flooding each year—as defined under the current 23 CFR Section 650 and in the Flood Hazard Area as defined under 6 NYCRR Section 502.

Figure I.2-3. Floodplains within the Study Area



In 1989, the Ellicott Creek Flood Control Protection Project was a Federally authorized project that was constructed to provide protection from floods that have an average recurrence interval of 100 years with a discharge of 17,400 cubic feet per second. The Ellicott Creek Flood Control Protection Project included the following:

- Enlarged approximately 2.1 miles of creek channel.
- Extended a reinforced concrete floodwall on the right bank approximately 870 feet from Maple Road upstream to a 500-foot levee that connects the floodwall to high ground.
- Created three diversion channels (9,150 feet long, 1,950 feet long, and 5,850 feet long), and enlarged the approximately 2,100-foot-long existing diversion channel.
- Installed 20 new flap gates and five gatewells to prevent creek backup during high flood stages.
- Modified nine storm drains where channel enlargement was performed.
- Enhanced erosion protection with riprap and grout-filled mats upstream and downstream of large culverts, bridges, and at the confluence of major tributaries, created diversion channels with Ellicott Creek and other areas along the creek, and modified diversion channels that were particularly susceptible to erosion.

I.2.5 Stormwater

South of I-290, the study area drainage system primarily consists of closed sewer networks owned by the Town of Tonawanda, City of Buffalo, Town of Amherst, and Erie County. These systems contain drainage inlets, manholes, and storm pipes that convey runoff mainly to Ellicott Creek. Stormwater generated within the footprint of the Project generally drains through a network of small-diameter pipes that drain to larger-diameter county interceptor sewers and then to open ditches that lead mainly to Ellicott Creek or drain south or west from University Heights to the Niagara River or Scajaquada Creek.

The Kenmore Avenue portion of the Project and the Main Street crossing are serviced by a combined sewer system in which sanitary waste, industrial waste, and stormwater runoff are discharged to the same sewer system and conveyed to the wastewater treatment plant for treatment. During periods of heavy rain or snowmelt, the wastewater volume in the combined sewer system can exceed the capacity of the combined sewer system or treatment plant. During these periods, the combined sewer system is designed to overflow (*i.e.*, combined sewer overflows (CSO)) and discharge excess combined flow into nearby surface waters, including open ditches and Ellicott Creek.

Each CSO within the project corridor is required to have coverage under their State Pollutant Discharge Elimination System (SPDES) permit, which is issued by NYSDEC. The City of Buffalo requires a treatment design or detention to bring a proposed 25-year storm down to the flow of a 2-year existing flow. The Town of Tonawanda and the Town of Amherst follow NYSDEC stormwater requirement of no increase in flow with a downstream analysis. As required by the stormwater design manual, flow to the streams cannot increase, and CSO and water will be treated by infiltration and/or detention to meet these requirements.

SPDES permitting is administered through NYSDEC in accordance with USEPA's Federal National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Final Rule (40CFR Parts 122-125). This law is commonly known as Stormwater Phase II and, permits are required for stormwater discharges from municipal separate storm sewer systems (MS4s) in urbanized areas. Owners or operators of such MS4s must be authorized in accordance with the SPDES General Permit for Stormwater Discharges from municipal separate storm sewer systems. MS4s are publicly-owned conveyances or systems of conveyances (i.e., ditches, curbs, catch basins, underground pipes, etc.) designed or used for collecting or conveying stormwater and that discharges to surface waters of the state. Examples of MS4 operators include, but are not limited to, municipalities, counties, community development districts, universities, military bases or federal correctional facilities. Operators of large, medium and regulated small MS4s are required to obtain NPDES permit coverage to discharge to waters of the state.

The alignment of the LRT Build Alternative and the BRT Build Alternative is bordered by three MS4s: City of Buffalo, Town of Amherst, and Town of Tonawanda. These municipalities would require consultation regarding changes to drainage patterns or new outfalls within their respective MS4s. Stormwater treatment systems currently exist in various areas along the proposed corridor. The most notable stormwater treatment systems within the proposed alignment of the Project are located within the UB campus and along the Boulevard Mall parking lot in the vicinity of the southeast corner of the Niagara Falls Boulevard and Maple Road intersection. The Town of Tonawanda and the Town of Amherst's stormwater management will be designed following the NYSDEC's standards. These stormwater treatments will need to be modified, replaced, or redesigned to manage the stormwater that they currently treat due to potential drainage pattern and outfall changes associated with the proposed project. However, stormwater from the proposed project will not be directed into these areas as they will remain privately owned and maintained.

North of I-290, the study area contributes runoff to Ellicott Creek either directly or through either closed drainage systems, open swales, dry ditches, or culverts. Some of the stormwater within the study area also contributes runoff to nearby wetlands or pond systems, such as Lake LaSalle, which eventually discharges to Ellicott Creek. Stormwater in these areas will be treated as required by the stormwater design manual for water quality and water quantity requirements.

According to USGS StreamStats data, the Ellicott Creek watershed area upstream of the last outfall associated with stormwater from the alignment of the LRT Build Alternative and the BRT Build Alternative is approximately 116 square miles.

During major precipitation events, stormwater has been known to overwhelm the current drainage system and cause temporary flooding of the streets around the Niagara Falls Boulevard and Maple Road intersection.

I.2.6 Groundwater

Because roadways and railways in general can be a source of stormwater pollution, including heavy metals and hydrocarbons that have the potential to affect groundwater quality, groundwater is often a consideration under roadway or rail projects; however, groundwater is not used as a potable water supply within the study area. Municipal water is supplied to this area and no known groundwater uses were identified along the corridor.

Groundwater wells were not installed as part of this project to identify water levels; however, the U.S. Geological Survey maintains records of some of the groundwater monitoring wells (Site # 425747078481301, Site # 425651078500901, Site # 425957078472701, and Site# 430006078464101) within approximately one mile of the project's footprint. While many of these wells are not within the project corridor, the wells suggest that groundwater can be estimated at shallow (0-6 feet) at the southern end of the project corridor and deeper (6-20 feet) at the northern reaches near UB. Therefore, it is anticipated that dewatering will be required for some of the deeper excavations for this project. Dewatering of the excavations may cause local drawdown of the water table to some extent based on depth of excavation, depth to water table, seasonal affect, and other factors. Note that this does not consider the local inconsistencies including perched groundwater.

I.2.6.1 Sole Source Aquifers

The LRT Build Alternative and the BRT Build Alternative were reviewed for compliance with State and Federal regulations regarding aquifer and drinking water protection. The closest Sole Source Aquifer (Cattaraugus Creek Basin Aquifer) is approximately 30 miles south of the Project; therefore, blasting activity associated with the LRT Build Alternative is not likely to affect it. Since the alignment of the LRT Build Alternative and the BRT Build Alternative would not be within or close to a designated Sole Source Aquifer area, no further review for Section 1424(e) of the Safe Drinking Water Act of 1974 was required.

I.2.6.2 State Aquifers

NYSDEC aquifer maps were reviewed, and because the alignment of the LRT Build Alternative and the BRT Build Alternative would not be in an identified Primary Water Supply or Principal Aquifer Area, no further investigation for NYSDEC designated aquifers was required. The closest Primary Aquifer is approximately 26 miles to the east and the closest Principal Aquifer is approximately 10 miles to the southeast of the Project; therefore the Project is not likely to affect Primary or Principal Aquifers.