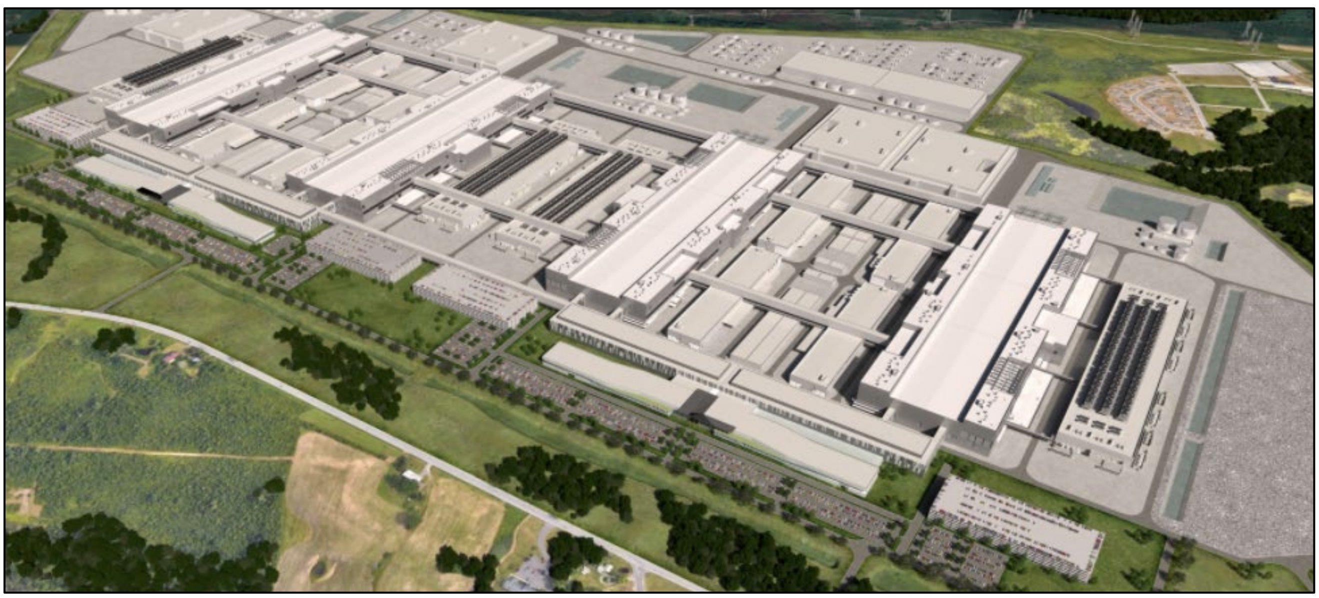
Micron Semiconductor Manufacturing Project, Clay, NY
Final Environmental Impact Statement

EISX-006-55-CPO-001 | November 2025



U.S. Department of Commerce, CHIPS Program Office

Onondaga County Industrial Development Agency

U.S. Army Corps of Engineers

U.S. Environmental Protection Agency

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR MICRON SEMICONDUCTOR MANUFACTURING FACILITY

Designation:	**Final Environmental Impact Statement** **EISX-006-55-CPO-001**
Title of Proposed Action:	Final Environmental Impact Statement (EIS) for the Micron Semiconductor Manufacturing Facility
Project Location:	Town of Clay, Onondaga and Oswego Counties, New York
Joint Lead Agencies:	U.S. Department of Commerce and Onondaga County Industrial Development Agency (OCIDA)
NEPA Cooperating Agencies:	U.S. Army Corps of Engineers (USACE), and U.S. Environmental Protection Agency (USEPA)
NEPA Participating Agencies:	U.S. Fish and Wildlife Service (USFWS), U.S. Department of Transportation (USDOT), and Federal Highway Administration (FHWA)
NEPA Participating Entity:	Onondaga Nation
SEQRA Involved Agencies:	New York State Department of Environmental Conservation (NYSDEC), Empire State Development, including the New York State Department of Economic Development and the New York State Urban Development Corporation (ESD), New York Department of State (NYSDOS), New York State Department of Transportation (NYSDOT), New York State Office of Parks, Recreation and Historic Preservation (OPRHP), New York State Office of General Services (NYSOGS), New York Power Authority (NYPA), New York State Canal Corporation, Onondaga County Department of Transportation (OCDOT), Onondaga County Water Authority (OCWA), Onondaga County Department of Water Environment Protection (OCDWEP), Town of Clay Town Board, Town of Clay Zoning Board, Town of Clay Planning Board, and Town of Cicero Planning Board
Affected Regions:	Onondaga, Oswego, Cayuga, Madison, Oneida, and Seneca Counties, New York, and the territories of the Onondaga Nation and the Haudenosaunee Confederacy
Further Information:	NEPA: National Institute of Standards and Technology, Creating Helpful Incentives to Produce Semiconductors (CHIPs) Program Office (CHIPSNEPA@chips.gov) SEQRA: Robert Petrovich, Executive Director; Onondaga County Industrial Development Agency, 335 Montgomery Street, Floor 2M, Syracuse, NY 13202 (Micron@ongov.net)
Public Comment Period Close Date:	August 11, 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviations/ Acronyms	Definition
$\mu g/m^3$	Micrograms per Cubic Meter
3D NAND	Three dimensional “not and”
AADT	Annual Average Daily Traffic
ACGIH	American Conference of Governmental Industrial Hygienists
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Material
ACS	American Community Survey
AED	semi-automatic defibrillator
AERMAP	AERMOD Terrain Pre-processor
AERMET	AERMOD Meteorological Pre-processor
AERMOD	AMS/EPA Regulatory Model
AERR	Air Emissions Reporting Rule
AFFF	aqueous film forming foam
AGC	Annual Guideline Concentration
AHA	American Heart Association
AI	artificial intelligence
AJD	Approved Jurisdictional Determination
AKRF	AKRF, Inc.
AMHS	Automated Material Handling System
AMR	American Medical Response
APE	Area of Potential Effects
ARM2	Ambient Ratio Method 2
ASCE	American Society of Civil Engineers
AQCR	Air Quality Control Region
ASOS	Automated Surface Observing System

AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
ATR	automatic traffic recorder
BACT	Best Available Control Technology
BBA	Breeding Bird Atlas
BEI	Biological Exposure Indices
BGEPA	Bald and Golden Eagle Protection Act
BIO	biological treatment
BA	Biological Assessment
BLS	Bureau of Labor Statistics
BMPs	best management practices
BOS	Boston Consulting Group
BPIP-PRIME	Building Profile Input Program
BRT	Bus Rapid Transit
BUD	Beneficial Use Determination
C&D	Construction and Demolition Debris
CAA	Clean Air Act
CAAS	Commission on Accreditation of Ambulance Services
Cadna-A	Computer Aided Noise Abatement
CAU	capital asset utilization
CBC	Christmas Bird Count
CBS	Chemical Bulk Storage
CCARP	Climate Change and Resilience Plan
CDD	Construction and demolition debris
CEC	Community Engagement Committee
CECPN	Certificate of Environmental Compatibility and Public Need
CEHAs	Coastal Erosion Hazard Areas

CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CF_4	carbon tetrafluoride
CFR	Code of Federal Regulations
CGP	Construction General Permit (or General Permit for Stormwater Discharges from Construction Activity)
CH4	Methane
CHIPS	Creating Helpful Incentives to Produce Semiconductors
CIF	Community Investment Fund
CJWG	Climate Justice Working Group
Clay Fire	Clay Fire Department
CLCPA	Climate Leadership and Community Protection Act
CME	CME Associates, Inc.
CMP	Chemical Mechanical Planarization; Coastal Management Program
CNY	Central New York
CNYRPDB	Central New York Regional Planning and Development Board
CNYREDC	Central New York Regional Economic Development Council
CO	Carbon monoxide
CO2	Carbon Dioxide
CO2e	CO2 equivalents
County	Onondaga County
CP	Commissioner Policy
CPI	Consumers Price Index
CPO	CHIPS Program Office
CPR	cardiopulmonary resuscitation
CPT	Cone Penetration Testing
CRIS	Cultural Resource Information System
CRRA	Community Risk and Resiliency Act

CRT	Crisis Management Team
CSD	Central School District
CSX	Freight Rail Owner
CT	Census Tract
CUB(s)	central utility building(s)
CVD	Chemical Vapor Deposition
CWA	Clean Water Act
CWMP	Construction Waste Management Plan
CY	cubic yards
CZMA	Coastal Zone Management Act
DA	Department of the Army
DAC	Disadvantaged Community
DACAT	Disadvantaged Communities Assessment Tool
DAR	Department of Air Resources
dB	Decibels
dBA	Decibel A-weighted level
DDI	Diverging Diamond Interchange
DEM	Onondaga County Department of Emergency Management
DEP	Division of Environmental Permits
DNL	Daytime Nighttime Equivalent Sound Level descriptor
DRAM	dynamic random-access memory
DSL	Digital Subscriber Line
EAF	Environmental Assessment Form
ECL	Environmental Conservation Law
ECS	Syracuse University College of Engineering and Computer Science
EDPL	New York State Eminent Domain Procedure Law
EDR	Environmental Design & Research

eGRID	Emissions & Generation Resource Integrated Database
EHS	Environmental, Health, and Safety
EIS	Environmental Impact Statement
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EMT-B	Emergency Medical Technician-Basic
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ERCs	Emission Reduction Credits
ERMS	Emergency Response Management System
ERT	Emergency Response Team
ESA	Endangered Species Act
ESD	Empire State Development
ETC	Estimated Time of Completion
EUV	extreme ultraviolet
EV	electric vehicle
fab	fabrication facilities
fab	memory fabrication unit
Fab	Fabrication Building(s)
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
F-Gases	Fluorinated Gases
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRMs	flood insurance rate maps
FLM	Federal Land Manager

FSL	Forecast Systems Laboratory
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FSMS	Fiscal Stress Monitoring System
FTA	Federal Transit Administration
FTTH	Fiber to the Home
FWS	Fish and Wildlife Service
GC	General Contractor
GDP	gross domestic product
GHG	Greenhouse Gas(es)
GHS	United Nations Globally Harmonized System of Classification and Labelling of Chemicals
GIS	Geospatial Information System
GML	General Municipal Law
GNM	Great Northern Mall
gpm	gallons per minute
GRS	Gas Regulator Station
GW	gigawatt
GWh	gigawatt-hours
GWP100	20-year basis Global Warming Potential
GWP20	100-year basis Global Warming Potential
HAP(s)	Hazardous Air Pollutant(s)
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCM	Highway Capacity Manual
HDD	horizontal directional drilling
HDM	Highway Design Manual
HFCs	Hydrofluorocarbons
HI	Hazards Index

HMTA	Hazardous Materials Transportation Act
HPM	Hazardous Process Materials
HRSA	Health Resources and Services Administration
HTF	Heat Transfer Fluid
HUCs	Hydrologic Unit Codes
HUD	United States Department of Housing and Urban Development
HWCP	Hazardous Waste Contingency Plan
IDLH	Immediately Dangerous to Life and Health
IH	Industrial Hygiene
IND	Industrial
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
ISHD	Integrated Surface Hourly Data
ISO	International Organization for Standardization
IWTP	Industrial Wastewater Discharge Permit
IWWTP	Industrial Wastewater Treatment Plant
JEDEC	Joint Electron Device Engineering Council
JHA	Job Hazard Analysis
JPA	Joint Permit Application
kV	kilovolt
KSYR	Syracuse Hancock International Airport
L10	Sound level that is exceeded ten percent of the time (90th percentile)
LAER	Lowest Achievable Emission Rate
lbs	pounds
LCD	Liquid Crystal Display
Lday	Daytime noise level
LDN	Average noise level over a 24-hour period (DNL)

LEED	Leadership in Energy and Environmental Design
LEHD	Longitudinal Employer-Household Dynamics
LEPC	Local Emergency Planning Committee
Leq	Equivalent Noise Level
LF	linear feet
Lnight	Nighttime noise level
LOD	Limit of Disturbance
LOS	Level of Service
LOWTP	Lake Ontario Water Treatment Plant
LQG	Large Quantity Generator
LRTP	Long Range Transportation Plan
LSWMP	Local Solid Waste Management Plan
LWRP	Local Waterfront Revitalization Program
MASW	Multichannel Analysis of Surface Waves
MBR	membrane biological reactor
MBTA	Migratory Bird Treaty Act
MCF	thousand cubic feet
MCL	maximum contaminant levels
MDth	thousand dekatherms
megafabs	mega-fabrication facilities
MERP	Modeled Emission Rates for Precursors
MEMS	Micro-electromechanical Systems
MG	million gallon
MGD	million gallons per day
Micron	Micron New York Semiconductor Manufacturing LLC
mmt	Millions of metric tons
MOE	measure of effectiveness

MOSF	Major Oil Storage Facility
MOVES	Motor Vehicle Emission Simulator
MOVES4	Motor Vehicle Emission Simulator
MPA	Metropolitan Planning Area
mph	mile(s) per hour
MSAT	Mobile Source Air Toxics
MSGP	Multi-Sector General Permit
MSW	municipal solid waste
Mt	Megatonne
MTP	Metropolitan Transportation Plan
MW	Megawatt
N2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NABTU	North America's Building Trades Unions
NAC	FHWA Noise Abatement Criteria
NAICS	North American Industry Classification System
NAVAC	North Area Volunteer Ambulance Corps
NCEI	National Centers for Environmental Information
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NF_3	nitrogen trifluoride
NFPA	National Fire Protection Association
NHL	National Historic Landmarks
NHPA	National Historic Preservation Act
NIMS/ICS	National Incident Management System/Incident Command System
NIOSH	National Institute for Occupational Safety and Health

NIST	National Institute of Standards and Technology
NLCD	National Land Cover Database
NLUS	Northern Land Use Study
NNSR	Nonattainment New Source Review
NO2	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOFO	Notice of Funding Opportunity
NOI	Notice of Intent
NOVA	Northern Onondaga Volunteer Ambulance
NOX	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
NWS	National Weather Service
NY	New York
NYCDOT	New York City Department of Transportation
NYCRR	New York Codes, Rules, and Regulations
NYISO	New York Independent System Operator
NYNHP	New York Natural Heritage Program
NYPA	New York Power Authority
NYS	New York State
NYSEDC	New York State Economic Development Council
NYSDEC	New York State Department of Environmental Conservation
NYSCIA	New York State Climate Impacts Assessment
NYSDOH	New York State Department of Health

NYSDOL	New York State Department of Labor
NYSDOS	New York Department of State
NYSDOT	New York State Department of Transportation
NYSDPS	New York State Department of Public Service
NYSED	New York State Education Department
NYSERDA	New York State Energy Research & Development Authority
NYSRHP	New York State Register of Historic Places
NYSHPA	The New York State Historic Preservation Act of 1980
NYSHPO	New York State Historic Preservation Office
NYSOGS	New York Office of General Services
NYSOSC	Office of the New York State Comptroller
NYSPSC	New York State Public Service Commission
NYSTA	New York State Thruway Authority
O3	Ozone
OCDOT	Onondaga County Department of Transportation
OCDWEP	Onondaga County Department of Water Environment Protection
OCIDA	Onondaga County Industrial Development Agency
OCM BOCES	Onondaga-Cortland-Madison Board of Cooperative Educational Services
OCRRA	Onondaga County Resource Recovery Agency
OCRRF	Onondaga County Resource Recovery Facility
OCWA	Onondaga County Water Authority
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OHWM	ordinary high water mark
OLM	Ozone Limiting Method
OOWWTP	Oak Orchard Wastewater Treatment Plant
OPHRP	Office of Parks, Recreation, and Historic Preservation

OSHA	Occupational Safety and Health Administration
OTR	Ozone Transport Region
Pb	Lead
PBS	Petroleum Bulk Storage
pc/mi/ln	passenger cars per mile per lane
PCBs	polychlorinated biphenyls
PCE	Passenger Car Equivalent
pcphpl	passenger cars per hour per lane
PDD	Planning Development Districts
PEECs	Process Equipment Exhaust Conditioners
PEJAs	Potential environmental justice areas
PEL	Permissible Exposure Limit
PEM	palustrine emergent
PFAS	per- and polyfluoroalkyl substances
PFCs	Perfluorocarbons
PFO	palustrine forested
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonic acid
Phase I ESA	Phase I Environmental Site Assessment
PHF	peak hour factor
PILOT	Payment In Lieu of Taxes
PJD	preliminary jurisdictional determination
PM	Particulate Matter
PM10	Particulate matter with an aerodynamic diameter smaller than or equal to 10 micrometers
PM2.5	Particulate matter with an aerodynamic diameter smaller than or equal to 2.5 micrometers
POM	Polycyclic Organic Matter

POTW	publicly owned treatment works
POW	palustrine open water
POU	point-of-use
ppb	Parts per billion
PPE	Personal Protective Equipment
ppm	Parts per million
PPV	Peak Particle Velocity
PSD	Prevention of Significant Deterioration
PSL	Public Service La
PSM	Process Safety Management
PSS	palustrine scrub/shrub
PTE	Potential to Emit
PTP	Pre-Task Plan
PTW	Permit-to-Work
PUB	palustrine unconsolidated bottom
PV	Photovoltaic Cell
PWL	Sound Power Level
QCEW	Quarterly Census of Employment and Wages
QEP	Qualified Environmental Professional
RA-1OO	Residential/Agricultural
RACT	Reasonably Available Control Technology
Ramboll	Ramboll Americas Engineering Solutions, Inc.
RBLC	Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emission Rate Clearinghouse
RCNM	Roadway Construction Noise Model
RCR	Rock Cut Road
RCRA	Resource Conservation and Recovery Act
RCTOs	rotor-concentrator thermal oxidizers

RECs	Renewable energy credits
REMI	Regional Economic Models, Inc.
RMP	Risk Management Plan; Risk Management Program
RMSE	root mean squared error
RMW	Regulated Medical Waste
ROD	Record of Decision
ROI	Region of Influence
ROW	right-of-way
RRR	reuse, recycle, and recovery
RTOR	right turn on red
RWPS	Raw Water Pump Station
SF6	sulfur hexafluoride
S/NR	State/National Register
SCF	standard cubic feet
SCSD	Syracuse City School District
SEMI S2	Semiconductor Equipment and Materials International Standard 2
SEMI-NY	Semiconductor Manufacturing Initiative
SEQR	State Environmental Quality Review
SEQRA	State Environmental Quality Review Act
SERC	State Emergency Response Commission
SERCs	State Emergency Response Commissions
SF6	sulfur hexafluoride
SFHA	special flood hazard areas
SFR	saturation flow rate
SGC	Short-term Guideline Concentration
SGEIS	Supplemental Generic Environmental Impact Statement
SHER	Safety, Health, & Essential Rights

SHIA	Syracuse Hancock International Airport
SHPO	State Historic Preservation Office
SIA	Semiconductor Industry Association
SIP	State Implementation Plan
SIRS	Student Information Repository System
SMMP	Soil and Materials Management Plan
SMP(s)	stormwater management practice(s)
SMTA	Syracuse Metropolitan Transportation Authority
SMTC	Syracuse Metropolitan Transportation Council
SNOP	Sales & Operations Planning
SO2	Sulfur dioxide
SPCC	Spill Prevention Control and Countermeasure
SPDES	State Pollutant Discharge Elimination System
SPL	Sound Pressure Level
SPL Lmax	Maximum Sound Pressure Level
SPR	Spill Prevention Report
SPT	Standard Penetration Testing
sq. ft.	square feet
SR	State Register of Historic Places
SSAs	sole source aquifers
SSURGO	Soil Survey Geographic
STAMP	Science, Technology, and Advanced Manufacturing Park
STPH	short tons per hour
SUNY	State University of New York
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and Endangered
TAZ	traffic analysis zone

TEM	Transportation Environmental Manual
TGM	Toxic Gas Monitoring
TIS	Traffic Impact Study
TLV	Threshold Limit Value
TMA	trimethylaluminum
TMC	turning movement count
TNM	FHWA Traffic Noise Model
TNW	Traditional Navigable Waterways
tpy	Tons per year
TRI	Toxics Release Inventory
TSCA	Toxic Substances Control Act
TTR	Transportation Technical Report
TWT	The Wetland Trust
U.S.	United States
USCB	U.S. Census Bureau (USCB)
USDOT	United States Department of Transportation
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UVIR	Ultraviolet Infrared
v/c	volume-to-capacity ratio
VCC	vehicle classification count
VdB	Vibration decibel level
VMT	Vehicle Miles Traveled
V-NAND	vertical “not and”

VOC	Volatile Organic Compound(s)
VSQG	Very Small Quantity Generator
WBV	Water bath vaporizer
WMA(s)	Wildlife Management Area(s)
WOPW	water output per week
WOTUS	Waters of the U.S.
WPCP	White Pine Commerce Park
WQV	water quality volume
WSCs	Workplace Safety Committees
WTE	Waste-to-Energy
WWTP	Wastewater Treatment Plant
ZID	Zone of Immediate Dilution

0.0 EXECUTIVE SUMMARY

0.1 OVERVIEW

The Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act is a set of bipartisan legislation that was enacted in 2020 and 2022 to revitalize the semiconductor manufacturing industry in the United States and accelerate domestic production of cutting-edge logic and memory chips. Under the authority of the CHIPS Act, the U.S. Department of Commerce created the CHIPS Program Office (CPO) to administer the CHIPS Incentives Program, which aims to catalyze long-term economically sustainable growth in the domestic semiconductor industry in support of U.S. economic and national security.

The Onondaga County Industrial Development Agency (OCIDA) is authorized to develop commerce and industry and advance job opportunities in the State of New York. In addition, the State has committed to attracting new semiconductor manufacturing and related material supplier projects to the State through measures such as the New York Green CHIPS Program and the Green CHIPS Excelsior Jobs Tax Credit Program.

On June 14, 2023, Micron New York Semiconductor Manufacturing LLC (Micron), a wholly owned subsidiary of Micron Technology, Inc., submitted an application to OCIDA requesting certain financial assistance pursuant to New York General Municipal Law § 854(14). Micron's application, as amended and restated, includes the lease and eventual purchase of the White Pine Commerce Park (WPCP) in Clay, New York and the undertaking of potential property condemnation pursuant to the New York Eminent Domain Procedure Law.

On August 18, 2023, Micron filed an application with CPO for direct funding under the CHIPS Incentives Program's February 28, 2023, Notice of Funding Opportunity (NOFO) for the purpose of constructing commercial semiconductor fabrication facilities in Clay, New York. On December 5, 2024, the U.S. Department of Commerce approved Micron's application for an award under the NOFO. The purpose and need for CPO's Proposed Action are to fulfill the Department of Commerce's statutory responsibilities under the CHIPS Act, including the requirement to provide Federal financial assistance to covered entities[1] to incentivize investment in facilities and equipment in the U.S. for the fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment.[2]

Specifically, Micron proposes to construct and operate a large-scale, state-of-the-art dynamic random-access memory (DRAM) semiconductor manufacturing facility (the Micron Campus) at the WPCP. Micron also proposes to construct a rail spur and construction material conveyance facility to reduce truck trips and support construction of the Micron Campus (the Rail Spur Site) and a childcare center, healthcare center, and recreation center (the Childcare Site) to

[1] The term "covered entity" means a nonprofit entity, a private entity, a consortium of private entities, or a consortium of nonprofit, public, and private entities with a demonstrated ability to substantially finance, construct, expand, or modernize a facility relating to fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment. 15 U.S.C. § 4651(2).

[2] 15 U.S.C. § 4652(a)(1).

serve its employees, and to lease existing warehouse space within 20 miles of the Micron Campus (the Warehouse Site). The Micron Campus, Rail Spur Site, Childcare Site, and Warehouse Site are collectively referred to as the Proposed Project. The Proposed Project also would require utility and infrastructure improvements to meet its electricity, natural gas, water supply, wastewater, and telecommunications needs, collectively referred to as the Connected Actions.

The construction of the Proposed Project would take place in stages over approximately 16 years. Subject to the receipt of all applicable permits, authorizations, and approvals, Micron would mobilize for initial site preparation for the Proposed Project beginning in the fourth quarter of 2025, with the first two DRAM manufacturing facilities (Fabs 1 and 2) estimated to be operational by 2029 and 2030, respectively, and the remaining fabs (Fabs 3 and 4) estimated to be operational by 2035 and 2041, respectively. The manufacturing facility would ramp up to full production output by 2045. The Connected Actions would be constructed on a parallel schedule to meet the utility needs for the Proposed Project as it scales up over the 16-year construction period.

The Proposed Project would be supported by more than $100 billion of private investment over the course of the next two decades, with a first phase of investment of $20 billion planned by the end of this decade. At full operational capacity in 2045 the Proposed Project would generate more than 9,000 permanent on-site operational jobs and spur the creation of approximately 40,000 additional jobs in the regional economy and throughout New York State, including vendor, supply chain, construction, and community jobs. Upon completion, the Proposed Project would be the largest domestic producer of DRAM chips, which have crucial applications in military equipment, cybersecurity technology, the aerospace industry, artificial intelligence (AI), and other cutting-edge uses, as well as more common areas of the domestic consumer economy.

CPO and OCIDA jointly prepared this Final Environmental Impact Statement (EIS) to evaluate the reasonably foreseeable environmental effects of the Proposed Project and Connected Actions pursuant to the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321 *et seq.*, and the State Environmental Quality Review Act (SEQRA), as codified at N.Y. Envtl. Conserv. Law §§ 8-0101 *et seq.* and its implementing regulations at 6 N.Y.C.R.R. Part 617. The purpose of the EIS is to identify and assess the reasonably foreseeable environmental effects of the Proposed Project and Connected Actions and a reasonable range of alternatives, facilitate public involvement and informed agency decision-making, and recommend appropriate mitigation measures. The EIS provides a basis for coordinated Federal, State, Indigenous Nation, and local input and review in a single document.

The EIS includes five main chapters. Chapter 1 provides a detailed introduction to CPO and OCIDA and their roles as the joint lead agencies for the environmental review of Micron's Proposed Project under NEPA and SEQRA, along with information on other agencies and interested parties involved in the environmental review. Chapter 2 provides a comprehensive overview of the various components of the Proposed Project and Connected Actions and a discussion of the alternatives that CPO and OCIDA considered. Chapter 3 is divided into 16 sections analyzing the reasonably foreseeable effects of the Proposed Project and Connected Actions on various resource areas. Chapter 4 analyzes the reasonably foreseeable cumulative effects of the Proposed Project and Connected Actions. Chapter 5 discusses the unavoidable significant adverse effects and the irreversible or irretrievable commitments of environmental resources that would occur if the Proposed Project and Connected Actions are implemented.

This Executive Summary provides a high-level overview of the Proposed Project and Connected Actions, the alternatives CPO and OCIDA considered, and the environmental effects on the resource areas analyzed in Chapters 3-5.

0.2 PROPOSED PROJECT AND CONNECTED ACTIONS

Micron proposes to construct a semiconductor manufacturing facility on an approximately 1,377-acre site consisting primarily of the current WPCP, in Onondaga County, New York. The area surrounding the WPCP is sparsely populated with relatively low-density residential development, mostly along Caughdenoy Road and Verplank Road west of the WPCP. I-81 is located a little more than one mile east of the WPCP. The WPCP is approximately seven miles north of the City of Syracuse. Although a majority of the Micron Campus would be contained within the Town of Clay, a small portion would be in the Town of Cicero.

The Micron Campus would include four DRAM production fabs, ancillary support facilities, driveways, parking, and ingress and egress roads with access from New York State (NYS) Route 31, U.S. Route 11, and Caughdenoy Road. Each fab would occupy approximately 1.2 million square feet (sq. ft.) of land and contain approximately 600,000 sq. ft. of semiconductor cleanroom manufacturing space. The fabs would be supported by central utility buildings, warehouse space, and product testing space.

The Proposed Project would involve the development of three additional properties with uses ancillary to the Micron Campus: an approximately 38-acre parcel on the west side of Caughdenoy Road in the Town of Clay for the Rail Spur Site; an approximately 31-acre parcel located at 9100 Caughdenoy Road in the Town of Brewerton for the Childcare Site; and leasing of 360,000-500,000 sq. ft. of existing warehouse space for the Warehouse Site in an industrially zoned area at a location to be determined within 20 miles of the Micron Campus.

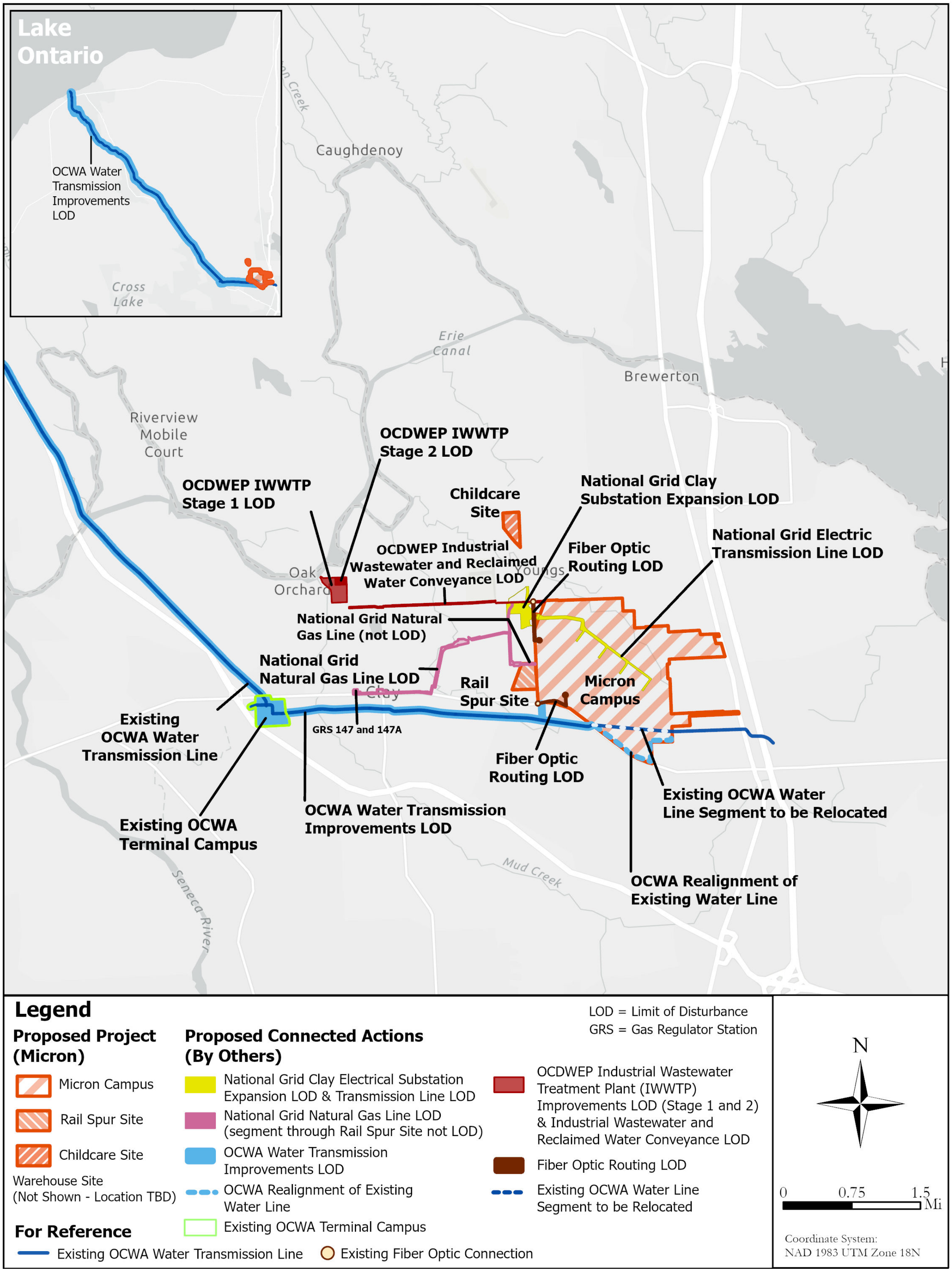
Construction of the Connected Actions would include expansion of certain existing utility properties and the construction and operation of various utility improvements by National Grid, Onondaga County Water Authority (OCWA), Onondaga County Department of Water Environment Protection (OCDWEP), and others to support the electricity, natural gas, water supply, wastewater, and telecommunication needs of the Proposed Project. To supply the estimated electricity needs of the Micron Campus, National Grid proposes to expand the existing footprint of the Clay Substation (located to the northwest of the WPCP across the CSX Railroad line) toward the north and east by approximately 10 acres. To supply the estimated natural gas demands of the Micron Campus, National Grid proposes to construct an approximately 3.1-mile long, 16-inch diameter below-grade (underground) natural gas distribution line from its existing Gas Regulator Station (GRS) 147 at 4459 NYS Route 31 to the Micron Campus and to construct a new GRS 147A at the same address.

OCWA proposes to undertake two phases of water system capacity and transmission upgrades to supply water to the Micron Campus. Phase 1 would involve upgrading the Raw Water Pump Station (RWPS) and Lake Ontario Water Treatment Plant (LOWTP) in Oswego and the Terminal Campus in the Town of Clay and constructing new water transmission mains from these facilities to the Micron Campus. Phase 2 would involve additional upgrades and transmission lines based on future needs. None of OCWA's proposed water infrastructure upgrades that are needed to meet Micron Campus water demands would require permanent land acquisition.

OCDWEP proposes to undertake two stages of wastewater infrastructure and capacity improvements to serve the Micron Campus. Stage 1 would involve interim “bridging” projects at the existing OCDWEP Oak Orchard Wastewater Treatment Plant (OOWWTP) to receive startup industrial wastewater flows and potentially initial manufacturing industrial flows from construction of Phase 1 of the Micron Campus (Fabs 1-2) while OCDWEP constructs a new Industrial Wastewater Treatment Plant (IWWTP) and reclaimed water facilities at its 76-acre Oak Orchard site. Stage 1 would also involve construction of a new conveyance between the Micron Campus and the Oak Orchard site to send pretreated industrial wastewater to the IWWTP and return reclaimed water to the Micron Campus. Stage 2 would expand and upgrade the IWWTP to serve additional campus industrial wastewater flows from Phase 2 of the Micron Campus build-out (Fabs 3-4) and provide additional reclaimed water back to the Micron Campus.

To supply telecommunication and broadband internet connectivity to the Micron Campus Micron would make use of two existing fiber optic lines along Caughdenoy Road and NYS Route 31 accessible via two fiber optic connection entry points within a mile of the WPCP, one at the intersection of Caughdenoy and Verplank Roads, and one at the intersection of Caughdenoy Road and NYS Route 31. The existing fiber optic lines currently serve a cell tower on the southern portion of the WPCP, just north of NYS Route 31.

Proposed Project and Connected Actions



Source: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.

0.3 ALTERNATIVES

NEPA and SEQRA require agencies to consider a reasonable range of alternatives to a proposed action. The range of alternatives CPO and OCIDA considered in this EIS are the Preferred Action Alternative (construction of the Proposed Project and Connected Actions), the No Action Alternative, a Reduced Scale Manufacturing Alternative, a U.S. Route 11 Access Elimination Alternative, and six Micron Campus Site Layout Alternatives. Following an extensive examination of each alternative based on a defined set of criteria, CPO and OCIDA determined that the Preferred Action Alternative is the only alternative that would meet CPO's purpose and need under NEPA and Micron's purpose and need under SEQRA.

No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. OCIDA acquired all parcels on the WPCP, the vast majority of which are presently vacant, for the specific purpose of creating an industrial park (as analyzed in the WPCP 2021 Supplemental Generic Environmental Impact Statement). The No Action Alternative would delay OCIDA's long-standing objective to bring high-tech facilities and high paying jobs to Onondaga County at the WPCP until such time as OCIDA identifies another suitable development proposal for the property. The Rail Spur and Childcare Sites would remain vacant properties. The existing utility authorities would not undertake utility improvements, outside those already planned as part of the systems' long term maintenance or need to obtain easements for the Connected Actions.

Reduced Scale Manufacturing Alternative

CPO and OCIDA considered reduced scale manufacturing alternatives in coordination with Micron. As described in Chapters 1-2, reduced scale alternatives, including two- and three-fab configurations, would not be able to achieve the level of economically viable domestic memory chip output sufficient to meet CPO and Micron's purpose and need. A reduced scale manufacturing alternative would incur significantly higher costs per unit of DRAM produced than a full-scale four-fab campus and would not meet Micron or CPO's economic sustainability needs. Without a single campus capable of achieving 52,000 chip wafers of output per week, Micron would not be able to facilitate co-location and efficient operation of semiconductor manufacturing supply chain expertise and supplier delivery operations in the vicinity, which would impede the Proposed Project's operational efficiency by making it more difficult to obtain critical materials and keep production high and costs low through collaborative engineering. Further, a reduced scale alternatives would require constructing and operating additional fabs at other locations, above and beyond what is already being contemplated, which would have additional environmental effects. Based on the above factors, reduced scale manufacturing alternatives would not be economically viable or meet CPO and Micron's purpose and need and were not carried forward for further evaluation.

U.S. Route 11 Access Elimination Alternative

In coordination with Micron, CPO and OCIDA considered a potential site layout alternative for the proposed Micron Campus that would eliminate driveway access to the campus from U.S. Route 11. Eliminating the driveway would avoid the disturbance of 2.3 acres of federal jurisdictional wetlands, including 0.71 acres of State jurisdictional wetlands accounted for within the 2.3 acres of federal jurisdictional wetlands. The site access driveway from U.S. Route 11, however, would be a vital access point to the Micron Campus and would ensure sufficiently streamlined construction traffic movement to avoid interference with local traffic patterns, particularly during construction of Fabs 2 through 4. Further, the driveway would distribute site access more effectively across the area roadway network and would mitigate post-construction traffic effects from campus operations. Therefore, CPO and OCIDA did not carry this site layout alternative forward for further analysis in the EIS.

Micron Campus Site Layout Alternatives

In coordination with Micron, CPO and OCIDA considered a further series of potential site layout alternatives for the proposed Micron Campus to determine whether a different layout of the fabs and supporting buildings from the Preferred Action Alternative site layout would result in fewer effects to waterbodies and wetlands on the WPCP. Specifically, six site layout alternatives were considered in addition to the Preferred Action Alternative. However, CPO and OCIDA determined that none of the site layout alternatives besides the Preferred Action Alternative would be technically or economically feasible or practicable because each would create inefficiencies that would prevent the Micron Campus from achieving the semiconductor wafer output necessary to achieve commercial viability. In addition, CPO and OCIDA found that all of the site layout alternatives besides the Preferred Action Alternative would result in the permanent loss of an equivalent amount or additional acres of federal jurisdictional wetlands.

0.4 ENVIRONMENTAL ANALYSIS

CPO and OCIDA considered the environmental resources that may be affected by the Proposed Project and Connected Actions. Best management practices (BMPs) were proposed to avoid and minimize potential effects where feasible. The EIS also identifies the mitigation measures that CPO, OCIDA, or other parties may require Micron to commit to or undertake to mitigate significant adverse effects.

The remainder of this section provides high-level summaries of the environmental analyses for each resource area discussed in the EIS.

Land Use, Zoning, and Public Policy

Construction of the Proposed Project and Connected Actions would convert existing vacant land and residential land uses to industrial use over a 16-year timeframe. Although these activities would not result in significant adverse effects on land use, the Proposed Project, and the Micron Campus in particular, would nevertheless represent a significant direct change to existing land use. This change, however, would still be consistent with the I-2 zoning designation for the WPCP. Moreover, the Proposed Project would comply with zoning regulations and the terms and conditions of any necessary local approvals, would be consistent with relevant public policies, and would fulfill several public policy goals relating to economic development and industrial use of the WPCP. The growth inducing effects of the Preferred Action Alternative would result in significant changes to land use but would continue to be subject to local discretionary approvals and planning policies, including applicable measures to avoid or minimize adverse development effects. Therefore, the Preferred Action Alternative would not result in any significant adverse effects with respect to zoning or public policies and would likely result in beneficial effects by fulfilling economic development policy goals.

Geography, Soils, and Topography

Construction of the Proposed Project would include removal of substantial volumes of soil and bedrock, and extensive fill and grading of more than 1,000 acres across the Micron Campus, Rail Spur Site, and Childcare Site, plus activity across additional sites and utility routes to construct the Connected Actions, resulting in permanent changes to these resources. These construction activities would be conducted in accordance with Micron's Soil and Materials Management Plan (SMMP) as well as State Pollutant Discharge Elimination System (SPDES) program requirements, including preparation of a Stormwater Pollution Prevention Plan (SWPPP). With these required BMPs and mitigation plans in place, significant adverse effects on existing geology, soils, and topography would be avoided.

Water Resources

Construction of the Proposed Project and Connected Actions would result in significant adverse effects on wetlands and surface water through the anticipated permanent loss of approximately 200 acres of federal jurisdictional wetlands and 7,828 linear feet (LF) of jurisdictional surface water features, of which approximately 193 acres of federal jurisdictional wetlands and 6,283 LF of jurisdictional surface water features are associated with the Proposed Project. Construction of the Proposed Project and Connected Actions would not result in significant adverse effects from stormwater or significant adverse effects on groundwater, floodplains, or coastal resources. Post-construction operation of the Proposed Project and Connected Actions would not result in significant adverse effects on water resources. The Preferred Action Alternative could potentially result in significant growth inducing effects on wetlands and surface water in the five-county Central New York (CNY) Region (defined as Onondaga, Oswego, Madison, Cortland, and Cayuga Counties) (five-county region) over time, but these changes would be gradual and would be subject to applicable permitting processes for other activities.

Mitigation would be required under Section 404 of the Clean Water Act and Article 24 of the Environmental Conservation Law to address the anticipated permanent losses of federal and State jurisdictional wetlands and surface water features. Under a proposed mitigation plan, Micron would enhance, establish, or restore a total of 422.14 acres of wetlands and 14,030 LF of stream features across six mitigation sites located within a nine-mile distance to the northwest of the WPCP, an approximately 2:1 mitigation ratio. Overall, approximately 1,341 acres of land within the Oneida River watershed would be protected in perpetuity under the mitigation plan. Additionally, Micron would purchase nine in-lieu fee program credits.

Biological Resources

Construction of the Proposed Project and Connected Actions would result in significant adverse effects on biological resources. This would include significant adverse effects on Federal and State listed threatened and endangered species, including the Indiana bat, northern long-eared bat, tricolored bat, northern harrier, and short-eared owl. Post-construction operation of the Proposed Project and Connected Actions would not result in significant adverse effects on biological resources. The Preferred Action Alternative has low potential to result in significant growth inducing effects on biological resources in the five-county region over time.

Micron would be required to implement several BMPs to avoid or minimize effects on biological resources, including wintertime tree clearing, tree marking, retention of onsite roosting and foraging habitat where feasible, noise and lighting reduction to reduce the potential for disturbance of bats in adjacent areas of habitat, water quality protection, and biological monitoring , among others. Mitigation would be required to reduce unavoidable significant adverse effects of the Proposed Project on Federal and State listed bat species and State listed grassland birds. Micron would purchase and permanently protect twice the amount of roosting habitat that would be lost due to Proposed Project and Connected Action construction and would fund research and monitoring efforts to benefit science-based bat species conservation and management programs in New York State.

Historic and Cultural Resources

CPO is serving as the lead Federal agency for the Section 106 consultation process under the National Historic Preservation Act (NHPA) for the Proposed Project and Connected Actions. CPO, in consultation with the New York State Historic Preservation Office (NYSHPO), the Advisory Council on Historic Preservation (ACHP), and other consulting parties, including Indigenous Nations with an interest in potentially affected areas, has identified areas of potential effect (APE) for both historic architectural properties and archaeological resources.

CPO has proposed a finding of no adverse effect with respect to one historic architectural property and is continuing to review information on other historic architectural properties in consultation with NYSHPO. CPO also is in the process of preparing a Programmatic Agreement (PA) for the Proposed Project and Connected Actions that will implement a phased identification process to defer the final identification and evaluation of archaeological resources. Micron has completed Phase 1A Archaeological Studies and is in the process of completing Phase 1B Archaeological Investigations, which may continue to be conducted during the federal and State agency reviews of the Proposed Project and Connected Actions. CPO determined that Indigenous Nation monitoring is warranted during archaeological testing and Micron is continuing to coordinate with Indigenous Nation monitors as part of the archaeological investigations.

Because the Section 106 process is ongoing, Micron would not be authorized to begin construction of the Proposed Project until all consulting parties are afforded an opportunity to comment on whether historic properties (including historic architectural properties and archaeological resources) would be adversely affected and CPO reviews and approves the results of any further applicable historic architectural surveys or archaeological investigation work.

Induced growth throughout the five-county region has the potential to affect historic architectural properties and archaeological resources. Although it cannot be predicted exactly when, or to what degree, induced growth would affect historic architectural properties, any future development requiring discretionary approvals would be required to comply with Section 106 of the NHPA or Section 14.09 of the New York State Historic Preservation Act (NYSHPA).

Air Quality

Construction activities associated with the Proposed Project components would result in temporary adverse effects on air quality. Based on applicable air quality regulatory and permitting requirements, stationary sources associated with the Proposed Project would not cause or contribute to an exceedance of any of the applicable National Ambient Air Quality Standards (NAAQS), short-term guideline concentrations (SGC), or annual guideline concentrations (AGC). The stationary and mobile source emissions from construction and long-term operation of the Proposed Project also would not have a significant adverse effect on air quality. The potential effects on air quality from induced growth under the Preferred Action Alternative would not cause a significant adverse effect within the five-county region.

To avoid and minimize effects on air quality during construction and operations, Micron would be required to implement BMPs to control the potential for fugitive dust emissions and off-site transport of dust, reduce emissions of air pollutants, control the potential for emissions of volatile chemicals, and minimize the ambient emissions of sulfur compounds. With these avoidance and minimization efforts and compliance with all applicable federal and State regulations as well as permit conditions mandated by NYSDEC, the Proposed Project would not result in significant adverse air quality effects.

Greenhouse Gas (GHG) Emissions, Climate Change, and Climate Resiliency

Construction and operation of the Proposed Project and Connected Actions, including indirect, upstream, and downstream activities, land use changes, and induced growth, would result in significant increases in GHG emissions and potentially significant contributions to climate change. The greatest contributing factor to GHG emissions would be the operation of the four fabs at the Micron Campus. The Proposed Project would incorporate project design GHG reduction measures to control and reduce GHG emissions from the manufacturing process. Micron would be required to implement additional BMPs to further avoid and minimize GHG emissions and effects on climate change and climate resiliency during construction and operation.

Although Micron has committed to controlling direct GHG emissions to the maximum extent practicable, the Preferred Action Alternative would result in significant adverse effects on climate change. Micron would commit to purchasing 100 percent carbon-free electricity utilizing power purchase agreements and renewable energy credits (RECs). NYSDEC is reviewing Micron’s Climate Leadership and Community Protection Act (CLCPA) analysis for consistency with New York State’s ability to meet its statewide GHG emission limits. NYSDEC may require additional or revised climate-related mitigation measures under the CLCPA.

The Preferred Action Alternative is not anticipated to present significant climate resiliency risks. The Proposed Project and Connected Actions also would be designed and engineered to withstand effects of the changing climate, in accordance with applicable laws and regulations, and New York State and public utility climate policies.

Solid Waste, Hazardous Waste, and Hazardous Materials

The Preferred Action Alternative would result in the generation of substantial quantities of solid and hazardous waste and use of substantial quantities of hazardous materials, primarily associated with the construction and operation of the Micron Campus. Solid waste disposal facilities in the five-county region are anticipated to be able to accommodate the solid waste flows from the Proposed Project with certain permit modifications and expansions. Micron's reuse, recycle, and recovery (RRR) Program and other waste minimization procedures would also help reduce waste-to-landfill volumes from the Proposed Project.

The Micron Campus would manage hazardous waste in compliance with all applicable federal and State requirements and would contract with private haulers to collect and safely transport hazardous waste to off-site treatment, storage, and disposal facilities authorized to collect such waste, including relevant out-of-state facilities. Micron would further manage hazardous and universal materials through its RRR Program to the greatest extent practicable to reduce the volume of material that would need to be managed as hazardous waste.

Accordingly, the Preferred Action Alternative would not result in significant adverse effects relating to the generation of solid or hazardous waste or the management of hazardous materials. Micron would be required to implement several BMPs to address solid and hazardous waste generation and the use of hazardous materials over time and minimize the amount of waste that is generated and requires disposal. Therefore, significant adverse effects are not anticipated, and no mitigation measures are required.

Human Health and Safety

The Preferred Action Alternative, and the construction and operation of the Micron Campus in particular, would pose potential human health and safety risks based on hazards to construction workers and hazards present in the semiconductor manufacturing process. However, Micron would develop and implement a comprehensive set of procedures to manage these risks in accordance with all applicable laws and regulations, and consistent with established environmental health and safety (EHS) programs Micron has implemented at its other facilities. Although potential incidents cannot be ruled out, given the comparatively low incident rate in the semiconductor industry and the risk management programming Micron would implement as part of the Proposed Project, the human health and safety risks to construction workers, employees, and the surrounding community are low. Therefore, the Preferred Action Alternative is not anticipated to result in significant adverse effects on human health or safety.

Micron would be required to implement BMPs to address the potential human health and safety effects of Proposed Project construction and operations, including requiring construction contractors to submit fatigue management plans in the event overtime work is required, maintain a crisis management plan with established mustering locations, maintain onsite Micron emergency response, and partner with local fire and EMS to provide documentation of hazardous materials stored on-site and coordinate emergency response readiness and preparedness. With implementation of these BMPs, the Preferred Action Alternative would not result in significant adverse effects on human health and safety.

Utilities and Supporting Infrastructure

The Preferred Action Alternative would likely have significant effects on electricity and transmission demand in Load Zone C, due to a potentially earlier and greater exceedance of local generation capacity compared to the No Action Alternative. However, long-term grid and transmission planning by the appropriate entities is expected to ensure adequate capacity to meet future electricity demands, regardless of where the generation occurs.

Micron anticipates that over the course of the long-term construction of the Micron Campus the agencies with jurisdiction over New York State's energy generation and transmission resources will plan and implement measures to meet Micron's forecasted energy demand and the demands of other users of energy in the State. However, neither Micron, nor the lead agencies issuing this EIS, have jurisdiction over regional or statewide planning for future electricity demand (including the future demands of the Proposed Project), or for determining the precise measures that will be undertaken in the future to ensure that those demands are met. The authority for ensuring that such demands are met are delegated to separate State and regional electricity planning entities with their own public administrative and adjudicatory processes. Though the effects of the Preferred Action Alternative are anticipated to be significant, they are not anticipated to be adverse due to the ongoing electricity planning processes.

Although natural gas demand under the Preferred Action Alternative would require system upgrades and expanded infrastructure, coordinated long-term planning between Micron and National Grid is expected to ensure sufficient delivery capacity, resulting in no significant adverse effects on natural gas supply or capacity.

The Proposed Project would have no significant adverse effect on water usage and capacity, as necessary system upgrades, permitting, and infrastructure development led by OCWA and local water authorities are expected to maintain adequate capacity. Wastewater treatment needs, including both sanitary and industrial wastewater, would be accommodated by existing and planned infrastructure, including construction of the IWWTP, avoiding any significant adverse effects on wastewater treatment capacity.

Finally, the Preferred Action Alternative would not result in any significant adverse effects on broadband internet connectivity or telecommunications infrastructure, as existing systems are expected to meet both current and future Proposed Project related and regional demand.

Transportation and Traffic

The Preferred Action Alternative would result in significant adverse effects on transportation and traffic in the surrounding areas during certain periods of construction and operation. Many of these effects, however, would be addressed through mitigation measures developed with input from agencies with jurisdiction to implement such measures. The years 2027, 2031, and 2041, along with their multimodal effects, were analyzed, as well as recommended mitigation scenarios.

Significant traffic effects are anticipated at intersections and freeway segments in forecast year 2027. No significant transportation improvements are anticipated to be able to be built by 2027 in response to the Proposed Project. The significant effects from traffic would increase as the Preferred Action Alternative construction advances, such that a greater number of intersections and freeway segments would be significantly affected in 2031 and 2041. In the 2041 forecast year, ten segments and 27 intersections would be significantly affected by the Preferred Action Alternative.

If implemented, the recommended mitigation measures listed below would be anticipated to sufficiently mitigate these effects on transportation and traffic for the forecast years 2031 and 2041 below significance levels, except for five intersections for forecast year 2041. Significant effects at these locations were determined to be unmitigable due to the number of improvements already presented by the mitigation measures and the infeasible geometric modifications that would be necessary to mitigate effects below significance levels.

- NYS Route 31 – Widening from one lane to two lanes in each direction between U.S. Route 11 and Morgan Road.
- NYS Route 31/I-81 Interchange – Re-configuring the existing interchange to a Diverging Diamond Interchange (DDI) with three lanes in each direction on NYS Route 31.
- Sneller Road/I-81 Interchange – Constructing a new interchange connecting I-81 with Sneller Road and U.S. Route 11.
- U.S. Route 11 – Widening from one lane to two lanes in each direction between NYS Route 31 and Sneller Road.
- New Access Road – Constructing a new four-lane access road (New Access Road) between NYS Route 481 and Caughdenoy Road, north of NYS Route 31, paralleling the CSX railroad.
- New Access Road/NYS Route 481 Interchange – Constructing a new interchange between the New Access Road and NYS Route 481, located just east of the CSX railroad mainline, with a new roundabout at the New Access Road and Maple Road intersection.
- Caughdenoy Road/NYS Route 481 Ramp – Constructing a new access ramp providing additional southbound to westbound movement from Caughdenoy Road to NYS Route 481 with a new roundabout at the intersection of Caughdenoy Road and Maple Road.

Ultimately, the recommended traffic mitigation measures are within the jurisdiction of federal, State, and local transportation agencies and would be subject to detailed design and approval, including applicable environmental review, by New York State Department of Transportation (NYSDOT) and Federal Highway Administration (FHWA).

Noise and Vibration

Noise from construction and operation of the Micron Campus, Rail Spur Site, and Childcare Site would exceed one or both of the thresholds for significant adverse effects at 51 of the 138 individual sensitive receptors in the noise and vibration study areas closest to the Proposed Project, including an apartment complex and nursing home east of the proposed Micron Campus, five residences north and south of the Rail Spur Site west of Caughdenoy Road, and three residences across the street from the Childcare Site.

To avoid and minimize predicted noise effects, Micron would be required to implement BMPs as part of the Proposed Project, including the use of vibratory drilling as opposed to pile driving, installation of ground level noise barriers and rooftop shielding elements, berms, sound attenuators or low noise packages on equipment, and strategic equipment locations. Even with the proposed BMPs, significant noise effects would exist such that additional noise mitigation measures would be required. Micron has proposed noise mitigation measures to sufficiently reduce these effects to below significance thresholds. Noise barriers would be constructed within the Micron Campus property boundaries to abate significant adverse construction and operation noise, and enclosures would be installed around rooftop equipment on the Micron Campus to abate significant adverse operational noise. Micron also would construct permanent noise barriers on the Rail Spur Site to abate noise from rail spur operations. As needed, additional refinement to these mitigations will be implemented based on noise monitoring to ensure efficacy. Micron would offer to construct temporary noise barriers within its property boundaries for affected property owners and would consult owners about aesthetic considerations, such as landscaping, and for ideas about other potentially effective mitigation measures.

Significant traffic noise effects would be anticipated to occur primarily from traffic on the main roadway corridors to the Micron Campus, including NYS Route 31, Caughdenoy Road, NYS Route 481, and U.S. Route 11. Although noise barriers were considered as a potential noise mitigation measure, in most cases, the construction of noise barriers to mitigate elevated traffic noise is not feasible because property and driveway access to the roadways must be maintained. These effects would be concentrated in areas directly to the west, south, and east of the Micron Campus and along the main roadway corridors to the Micron Campus, including NYS Route 31, Caughdenoy Road, NYS Route 481, and U.S. Route 11. Nearly all these receivers are located adjacent to and access their properties from these roads. These significant adverse noise impacts are expected to further increase if the recommended traffic improvements are implemented.

Visual Effects and Community Character

The Preferred Action Alternative, and construction and operation of the Micron Campus and Rail Spur Site in particular, would be highly visible from certain surrounding areas and would produce noticeable visual effects from multiple viewpoints. Visual effects would be most apparent from viewpoints closest to the Micron Campus, but would become less apparent or would not occur beyond approximately a half-mile distance from the site. Overall, these visual effects would be significant from the standpoint of viewers at closer distances. Separately, there would be no significant aesthetic impacts on any designated aesthetic resources in range of the Proposed Project or Connected Actions. Lastly, the Preferred Action Alternative would result in changes to community character based on the combination of the visual effects, such as increased traffic and noise, and the effects of induced growth (reflecting an overall change from a low-density, rural, and undeveloped area to a site with a large industrial manufacturing facility). However, these changes would be consistent with community character as expressed in local land use regulations, policies, and plans.

Changes in visibility of the Micron Campus would be minimized through required BMPs including significant setbacks, landscaping, and the use of downward directional, shielded, warm white LED lights. All proposed lighting would be designed and installed in accordance with applicable local regulations.

Community Facilities, Open Space, and Recreation

Construction and operation of the Proposed Project would not result in any significant adverse effects on police services, fire services, EMS, healthcare facilities, or schools, nor would construction and operation of the Proposed Project and Connected Actions have any significant adverse effects on open space or recreational resources. The Preferred Action Alternative would not result in significant adverse growth inducing effects on police services, EMS, healthcare facilities, schools, or open space or recreational resources, but would potentially have significant adverse effects on volunteer fire services in the five-county region.

Micron would engage closely and collaboratively with local fire departments, including Clay Fire and Cicero Fire, to familiarize local fire service personnel with any potential Proposed Project construction hazards such as construction site fuel and chemical storage, jointly prepare to implement BMPs for construction fire safety, and ensure compliance with applicable fire protection code requirements. To ensure continuous front-line coverage during construction of the Proposed Project, Micron would continuously employ construction site safety and EHS personnel to respond to and contain a range of construction incidents and would continuously employ its Emergency Response Team (ERT) to address medical incidents. In addition, as part of the construction of the Proposed Project, Micron would establish a dedicated on-site construction occupational health clinic (separate from the proposed Childcare Site healthcare center) staffed with an occupational medical physician, physician’s assistant, registered nurse, licensed nurse practitioner, physical therapist, and other support staff. The ERT would transport injured construction workers or personnel to the construction clinic for medical care, as appropriate.

To address the potential significant adverse effect on volunteer fire services due to the induced growth associated with the Proposed Project, including on Clay Fire and the Town of Clay’s fire response capacity, Micron would commit to pay for and support ongoing Micron-related training efforts with Clay Fire and other local fire departments as a mitigation measure. Similarly, Micron would work with Clay Fire to determine any future need for the development of a full-time professional fire service. The determination of future needs planning could be completed through a feasibility study or similar alternative method.

Construction and operation of the proposed Micron Campus and the National Grid Clay Substation Connected Action expansion would require permanent closure of a portion of the Snow Owls Snowmobile Trail that runs through the two properties.

Socioeconomic Conditions

The socioeconomic effects of the Preferred Action Alternative would be significant and beneficial. The Proposed Project would generate substantial new economic activity in the local and regional study areas. It is projected that operations of a 4-fab facility would (i) generate over $10 billion in real GDP impacts within the regional study area, (ii) generate additional tax revenues for the local and regional study areas, (iii) invest $500 million in local and regional initiatives that advance identified community needs, (iv) generate over 4,000 on-site construction jobs over the approximately 16-year construction period, and (v) generate over 9,000 permanent on-site operational jobs.

In addition to on-site benefits, the Proposed Project’s construction and operational activities would generate off-site economic activity and additional jobs and labor income within industries supporting Micron’s construction, and within governments and businesses supporting workers’ day-to-day spending. It is anticipated that the Proposed Project would generate over $2 billion in induced disposable personal income in the five-county region by 2035 and over $3.3 billion by 2041. By 2045 the Proposed Project would generate demand for nearly 9,500 jobs at regional supply chain businesses and approximately 23,500 jobs at regional governments, institutions, and businesses supporting the growth in regional household spending (approximately 33,000 off-site jobs in total by 2045). This would increase jobs in numerous industry sectors and increase income opportunities for the regional workforce, a significant benefit of the Proposed Project.

The Preferred Action Alternative's induced housing demand may lead to short-term rent increases and the potential to indirectly displace residents who cannot afford rent increases. Within the local study area, this has the potential to result in a short-term significant adverse socioeconomic effect. Notwithstanding, this short-term potential significant adverse effect will be addressed through the provision of additional affordable housing supply facilitated by investments from the State of New York through Governor Hochul's long-term statewide housing approach and New York Housing Compact initiatives; and local initiatives like the Onondaga County Housing Initiative Program (O-CHIP) and the OCIDA's tax exemption program for housing projects. Micron will continue to work with agencies and local stakeholders to identify specific actionable measures to avoid or minimize the potential for this short-term significant adverse effect on the local housing market.

Environmental Justice

The potential for adverse effects from construction and operation of the Preferred Action Alternative on low-income and minority communities, as well as disadvantaged communities (DACs), are expected to be limited to within an approximately 5-mile radius around the Proposed Project sites, and a ½ mile of the Connected Actions. When analyzing the associated DAC burdens at or above the 80th percentile, the Preferred Action Alternative would not cause or increase a disproportionate burden from construction or operation of the Proposed Project or Connected Actions. Similarly, in the low-income and minority communities identified within the study area, the Preferred Action Alternative would not cause or increase a disproportionate burden within those communities, except a potential temporary adverse effect on housing and rent pricing. Instead, the Preferred Action Alternative would produce beneficial effects for the local and regional communities, including identified DACs, by generating thousands of new jobs both on- and off-site through business-to-business supply chain services, stimulating local and regional development through induced residential and worker spending, generating additional tax revenues and, over the 20-year term of the Green CHIPS Community Investment Fund (CIF), by investing $500 million in local and regional initiatives that advance identified community needs.

The Preferred Action Alterative includes numerous project design elements and BMPs that avoid or minimize potential adverse environmental effects. For certain resource areas, mitigation measures have been proposed to further reduce potential significant adverse environmental effects (e.g., noise, transportation). With these avoidance, minimization and mitigation measures, the Preferred Action Alternative would not cause or increase a disproportionate pollution burden on low-income and minority communities or DACs.

0.5 CUMULATIVE EFFECTS

SEQRA requires consideration of cumulative effects. Cumulative effects occur when multiple actions affect the same resource(s) or when the incremental effects of a proposed action add to the effects caused by other past, present, and reasonably foreseeable future actions unrelated to the proposed action. Cumulative effects are most likely to arise when a proposed action and other actions are expected to occur in a similar location over a similar time.

Under the Preferred Action Alternative, although most of the environmental effects of the Proposed Project and Connected Actions would generally occur within the vicinity of the Micron Campus, Rail Spur Site, and Childcare Site or within or adjacent to the Connected Actions, the effects of other present or reasonably foreseeable future actions in the local or regional area, when added to the effects of the Proposed Project and Connected Actions, may potentially result in cumulative environmental effects.

Across all the environmental resources analyzed in this EIS, none of the ongoing or future projects with effects that are cumulative with the Preferred Action Alternative would meaningfully alter or amplify the effects of the Preferred Action Alternative, because the Proposed Project and Connected Actions are the most significant drivers of the environmental effects identified in this EIS. None of the other ongoing or future projects, either individually or cumulatively, would transform an otherwise insignificant effect of the Preferred Action Alternative into a significant effect. Nor would any of the other projects, individually or cumulatively, meaningfully exacerbate any significant effect of the Preferred Action Alternative. Accordingly, there are no significant adverse cumulative effects.

0.6 UNAVOIDABLE SIGNIFICANT ADVERSE EFFECTS

The Preferred Action Alternative would have several significant environmental effects that could reasonably be reduced below the level of significance through implementation of identified mitigation measures. Nevertheless, implementation of the Preferred Action Alternative would result in some unavoidable significant effects that cannot reasonably be avoided or mitigated below the level of significance.

Water Resources

The Preferred Action Alternative will necessitate the permanent loss of approximately 193.38 acres of federal jurisdictional wetlands (approximately 174.77 acres of which are State jurisdictional wetlands), and approximately 10.5 acres of non-jurisdictional wetlands at the Micron Campus, Rail Spur Site, and Childcare Site, along with the ecosystem services those wetlands currently provide. Micron, the USACE, and NYSDEC are currently developing a mitigation plan required as a part of the CWA Sec. 404 permitting process, which will include compensatory mitigation requirements to offset the loss of wetlands from implementation of the Proposed Project by creating and preserving wetlands (at a ratio of two acres or greater of created wetlands to each acre that is lost) within the watershed of the Proposed Project. Despite these significant mitigation measures, the loss of wetlands at the Micron Campus and Rail Spur Site is deemed an unavoidable significant adverse impact.

The Preferred Action Alternative would also have significant effects on localized surface water and stream resources despite the implementation of mitigation measures. As a result of the construction of the Proposed Project, most of the existing stream channels currently located in what would become the Micron Campus Site and Rail Spur Site would be lost. Loss of these surface water and stream resources is considered an unavoidable significant effect of the Preferred Action Alternative.

Biological Resources

Construction of the Proposed Project and Connected Actions would result in significant adverse effects on biological resources. This would include significant adverse effects on federal and State listed threatened and endangered species, or species proposed for listing, including the Indiana bat, northern long-eared bat, tricolored bat, northern harrier, and short-eared owl. While mitigation has been proposed to address the effects of the Proposed Project through the preservation of critical habitat located off the Micron Campus, the loss of ecological communities, in particular, and the habitat they provide to these species of special concern, is considered to be an unavoidable significant adverse impact of the Preferred Action Alternative.

Climate Change

The GHG emissions that would result from construction and operation of the Proposed Project are expected to be unavoidably significant. Even with significant avoidance and minimization efforts as well as mitigation, GHG emissions associated with operation of the Micron fabs and related facilities will represent a significant increase in overall GHG emissions in the five-county region and New York State. Most of these emissions would be the result of natural gas combustion, energy consumption, and process emissions needed for the DRAM manufacturing process. Natural gas combustion, and the resulting GHG emissions, are considered an unavoidable necessity for implementation of the Preferred Action Alternative.

Transportation

The traffic effects of the Preferred Action Alternative are anticipated to be significant during construction of the Proposed Project, which is anticipated to be complete and operational in 2041-2042. NYSDOT anticipates having all necessary roadway improvements in place by 2031 to mitigate traffic effects in the County and region. Significant adverse impacts occurring before that time are considered temporary unmitigated impacts.

The transportation effects of the Proposed Project would be substantially mitigated if the relevant traffic authorities implemented recommended Traffic Mitigation Scenario C, which would implement a broad array of traffic improvements specifically designed to reduce the severity of the Proposed Project's traffic effects, including interchanges, ramps, roadways, and operational equipment upgrades. Implementation of these mitigation measures likely would reduce the traffic effects of the Proposed Project below the level of significance in all but five intersections by 2041, regardless of whether proposed Traffic Mitigation Scenario C is implemented. Those intersections are: (1) NYS Route 31 and I-81 SB Ramp; (2) NYS Route 31 and NYS Route 481 SB; (3) US Route 11 and NYS Route 31; (4) NYS Route 31 and Lakeshore Spur; (5) South Bay Road and NYS Route 31. These significant adverse traffic impacts are considered unavoidable because mitigation below the level of significance would require infeasible roadway reconfiguration.

Because it is uncertain whether, or under what circumstances, the recommended Traffic Mitigation Scenario C would be implemented (these measures or similar measures can only be implemented by relevant transportation agencies through separate legal, regulatory, and public processes that are independent from the Lead Agencies and actions considered in this EIS), the Preferred Action Alternative's transportation effects are presented here as potentially unavoidably significant.

Noise

Although noise from construction and operations of the Preferred Action Alternative would be mitigated below significance thresholds primarily through installation of ground-level noise barriers and rooftop enclosures around equipment, the noise effects due to traffic increases associated with the Proposed Project are anticipated to be significant and adverse. Although mitigation will be implemented to the maximum extent practicable, noise associated with traffic cannot be fully mitigated. These unmitigated significant noise impacts are expected to further increase if the recommended traffic measures are implemented.

0.7 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL RESOURCES

The irreversible and irretrievable commitment of environmental resources to the Preferred Action Alternative consists primarily of resources committed to the physical construction of the Proposed Project, related utility facilities, nonrenewable natural gas resources and other resources consumed by project operations.

The Micron Campus would irretrievably devote approximately 1,000 acres of the 1,377 WPCP and related parcels to approximately five million sq. ft. of factory space, associated indoor facilities, and otherwise generally impermeable surface uses. These developable lands would no longer be available for other developments. Wetlands, stream systems, and vegetated areas within the construction area would be irretrievably lost or subsumed in this developed space. Due to the loss of wetlands on site, mitigation areas would be established elsewhere as mandated by the USACE Section 404 and NYSDEC Article 24 permits required to construct the Micron Campus. These mitigation sites would be dedicated to the establishment of additional wetlands. Construction would involve the permanent removal of soil and replacement with approximately nine million cubic yards of fill. Millions of tons of steel and other construction materials would be irreversibly committed to construction of the Proposed Project in these areas and unavailable for other uses.

Operations would necessitate the use of billions of standard cubic feet of natural gas per year, and, depending on the energy mix used to supply the New York Independent System Operator (NYISO) grid over the life of the Proposed Project, any portion of electric supply derived from nonrenewable sources would also represent an irretrievable commitment of nonrenewable energy resources to the Preferred Action Alternative. Though the Proposed Project would utilize and return water to Lake Ontario, which is one of the largest renewable freshwater sources in North America, municipal water supply and wastewater resources would be irretrievably committed to supplying the Proposed Project with fresh water and wastewater delivery, treatment, and disposal.

A substantial portion of the water supply, and wastewater infrastructure needed by the Proposed Project will be constructed specifically to meet the demands of the Proposed Project. The resources required to construct these water and wastewater facilities would represent an irretrievable commitment of environmental resources to the Preferred Action Alternative, as would construction of any utility facilities intended for exclusive use by the Proposed Project. These include construction materials associated with OCDWEP's construction of a new IWWTP for the Proposed Project at the OCDWEP's Oak Orchard site, expansion of the National Grid Clay

Substation and related power line installation to supply the Proposed Project, and gas line and water line infrastructure needed to supply the Proposed Project.

Raw material inputs needed to manufacture the finished DRAM chips also would represent an irretrievable commitment of resources to the Preferred Action Alternative, as would the resources, facilities, and landfill space required to treat and dispose of the solid waste streams associated with the Proposed Project. Construction of the Rail Spur Site and Childcare Site similarly would necessitate the irretrievable loss of vegetation, soils, and jurisdictional/non-jurisdictional wetlands, and would occupy developable land that would no longer be available for alternative development. Construction would require the irretrievable commitment of building resources to facilities, roads, loading areas, and impermeable or semi-permeable surfaces that will be unavailable for alternative uses.

1.0 INTRODUCTION

1.0.1 Overview

On August 18, 2023, Micron New York Semiconductor Manufacturing LLC (Micron), a wholly owned subsidiary of Micron Technology, Inc. (Micron Technology), filed an application with the Creating Helpful Incentives to Produce Semiconductors (CHIPS) Program Office (CPO) for direct funding under the CHIPS Incentives Program's February 28, 2023, Notice of Funding Opportunity (NOFO) for the construction of commercial semiconductor fabrication facilities in Clay New York (CPO, 2023a). On December 5, 2024, the U.S. Department of Commerce (Department of Commerce) approved Micron's application for an award under the NOFO.

The CHIPS Incentives Program aims to catalyze long-term economically sustainable growth in the domestic semiconductor industry in support of U.S. economic and national security and is authorized by Title XCIX, CHIPS for America, of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Pub. L. 116-283), as amended by the CHIPS Act of 2022 (Division A of Pub. L. 117-167) (together referred to as the CHIPS Act). CPO is responsible for implementing the CHIPS Act by providing incentives for investment in semiconductor facilities and equipment in the United States (U.S.).

On June 14, 2023, Micron submitted an application to the Onondaga County Industrial Development Agency (OCIDA) requesting certain financial assistance within the meaning of New York General Municipal Law § 854(14). Micron's application, as amended and restated, includes the lease and eventual purchase of the White Pine Commerce Park (WPCP) in Clay, New York and the undertaking of potential property condemnation pursuant to the New York Eminent Domain Procedure Law (EDPL).

OCIDA is authorized and empowered by the provisions of Chapter 1030 of the 1969 Laws of New York, constituting Title 1 of Article 18-A of the General Municipal Law, Chapter 24 of the Consolidated Laws of New York, as amended, Chapter 435 of the Laws of 1970 of the State of New York and Chapter 676 of the Laws of 1975 of the State of New York, as amended, constituting Section 895 of said General Municipal Law to promote, develop, encourage, and assist in the acquiring, constructing, reconstructing, improving, maintaining, equipping, and furnishing of manufacturing, warehousing, research, commercial, and industrial facilities, among others, for the purpose of promoting, attracting, and developing economically sound commerce and industry to advance the job opportunities, health, general prosperity, and economic welfare of the people of the State of New York, to improve their prosperity and standard of living, and to prevent unemployment and economic deterioration. Under this authority, OCIDA acquired and created the WPCP, located at 5171 Route 31, in the Town of Clay, NY 13041, and expanded it to attract large-scale, high-value, and high-tech manufacturing industries that will provide high-paying, sustainable jobs to Onondaga County.

The State of New York is committed to creating 21st century jobs and becoming a global capital for semiconductor manufacturing. New York's Green CHIPS Program provides a State-level companion incentive program to the Federal CHIPS Incentives Program by offering up to $10 billion in economic incentives to locate new, cutting-edge semiconductor manufacturing and supply chain projects within the state. In addition, New York's Green CHIPS Excelsior Jobs Tax Credit Program provides certain semiconductor manufacturer tax incentives that are intended to help attract thousands of jobs and billions of dollars to establish New York as a leader in domestic re-shoring of semiconductor manufacturing. To receive benefits from this tax credit program, a project must be within the semiconductor manufacturing industry, invest at least $3 billion in the State over a 10-year period, create 500 new jobs per project, make commitments to worker and community investments, and include sustainability measures to mitigate the project's greenhouse gas emissions over its lifetime.

Micron's proposed activities under Micron's funding applications to CPO and OCIDA, described below, are collectively referred to in this EIS as the "Proposed Project." Because CPO and OCIDA determined, during their examination of Micron's respective applications, and in the case of OCIDA, Part 1 of Micron's Environmental Assessment Form, that the proposed activities in the applications have the potential to result in at least one significant adverse effect on the environment, CPO and OCIDA prepared this EIS to evaluate the potential environmental effects[3] of the Proposed Project pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321 *et seq.*, and the State Environmental Quality Review Act (SEQRA), as codified at N.Y. Envtl. Conserv. Law § 8-0101 *et seq*. and its implementing regulations at 6 N.Y.C.R.R. Part 617.

The Proposed Project would involve the construction and operation of a semiconductor manufacturing facility with four semiconductor fabrication buildings ("fabs") at the WPCP location. The Proposed Project would primarily consist of: (1) construction of the Micron Campus, including the four fabs, ancillary support facilities, ingress and egress roads, driveways, and parking, within a site totaling approximately 1,377 acres; (2) construction of a rail spur and construction material conveyance facility on approximately 38 acres west of 8625 Caughdenoy Road in Clay, NY 13041, to support construction of the Micron Campus (the "Rail Spur Site"); (3) construction of a childcare center, healthcare center, and recreational center on an approximately 31-acre parcel located at 9100 Caughdenoy Road, Brewerton, NY 13029, to support the estimated 9,300 employees who would ultimately work at the completed Micron Campus (the "Childcare Site"); and (4) leasing of 360,000-500,000 sq. ft. of existing warehouse space in an industrially zoned area at a location to be determined within 20 miles of the Micron Campus (the "Warehouse Site"). In addition, implementing the Proposed Project would require several utility and infrastructure improvements to meet its electricity, natural gas, water supply, wastewater, and telecommunications needs (the "Connected Actions").

Chapter 2 of this EIS provides a comprehensive overview of the various components of the Proposed Project and Connected Actions, and discusses CPO's and OCIDA's consideration of alternatives. Chapter 3 of the EIS describes the affected environment and analyzes the environmental effects of the Proposed Project and Connected Actions, as well as a No Action Alternative. Chapter 4 analyzes the cumulative environmental effects of the Proposed Project and Connected Actions and the No Action Alternative.

Figure 1.0-1 below shows the Proposed Project's location in Central New York.

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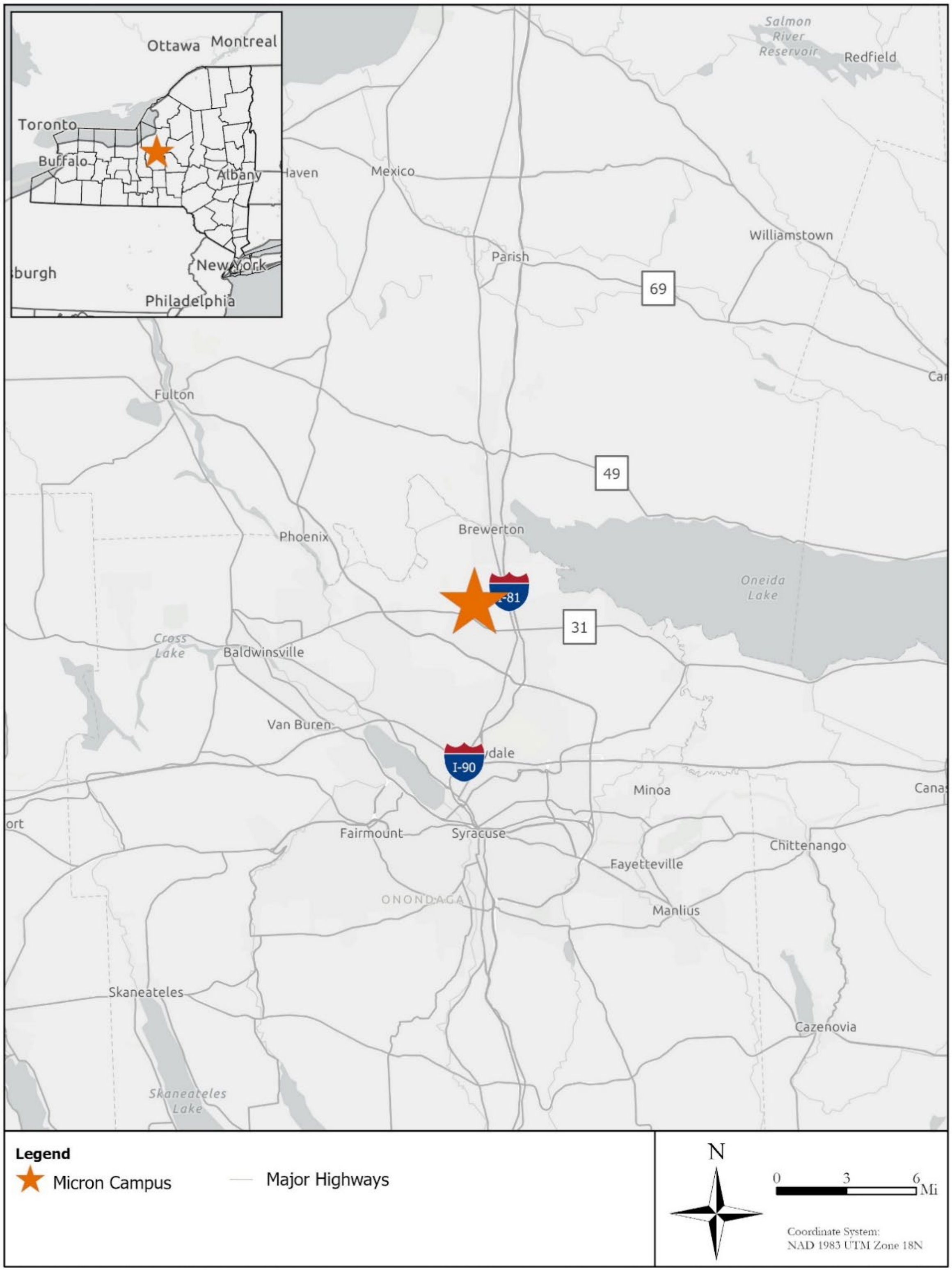
[3] For purposes of this EIS, the terms "impacts" and "effects" are synonymous.

Figure 1.0-1 Proposed Project Location Map



Source: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.

Construction of the Proposed Project would take place over approximately 16 years. Subject to the receipt of CPO and OCIDA authorizations and all other applicable permits, authorizations, and approvals, Micron would mobilize for initial site preparation for the Proposed Project beginning in the fourth quarter of 2025, with the first two fabs (Fabs 1 and 2) estimated to be operational by 2029 and 2030, respectively, and the remaining fabs (Fabs 3 and 4) estimated to be operational by 2035 and 2041, respectively. The manufacturing facility as a whole would ramp up to full production output by 2045. The Proposed Project would be supported by more than $100 billion of private investment over the course of the next two decades, with a first phase of investment of $20 billion planned by the end of this decade (Micron Technology, 2022).

1.0.2 State and Local Background

Central New York and other regions of New York State have experienced a reduction in manufacturing jobs over several decades. In response, starting in the early 1990s, OCIDA and the City of Syracuse started to study potential sites for locating industrial businesses in Onondaga County to increase manufacturing employment. The WPCP was ultimately selected due to its proximity to water and energy infrastructure and highway access, and its zoning classification. OCIDA's intent in forming the WPCP was buttressed in 1998 with the inception of the New York high-tech Semiconductor Manufacturing Initiative (SEMI-NY) program, a comprehensive effort to encourage semiconductor manufacturing in the State. Thereafter, following decades of unsuccessful efforts to develop the WPCP, OCIDA increased the size of the WPCP to make it more attractive to a broader scope of industries, particularly the semiconductor industry, and bring high-tech and high-paying jobs to Onondaga County.

OCIDA previously conducted multiple studies of the WPCP. In 2021, OCIDA prepared, as lead agency under SEQRA, a Final Supplemental Generic Environmental Impact Statement (SGEIS) that evaluated the contemplated expansion and development of the WPCP for semiconductor manufacturing. As OCIDA determined in its Findings Statement for the SGEIS, high-tech advanced manufacturing holds the promise of transforming the Onondaga County economy through new high-paying jobs, significant financial investment, and increased economic activity, including: (1) the creation of thousands of construction jobs and up to approximately 50,000 permanent jobs; (2) a robust supply chain of companies that will service a high-tech advanced manufacturing organization; (3) a reduction in poverty; and (4) secondary benefits such as increased local small business activity, growth in community civic and cultural organizations, and increased county and municipal investment.

As noted above, OCIDA is authorized to develop commerce and industry and advance job opportunities in the State of New York. To accomplish its stated purposes, OCIDA is authorized to grant financial assistance in connection with the acquisition, construction, and equipping of one or more projects. Accordingly, OCIDA is considering financial assistance for the Proposed Project, the use of eminent domain, and the lease and subsequent sale of the WPCP to Micron to construct and operate the Proposed Project.

Also as noted above, New York State has committed to attract new semiconductor manufacturing and related material supplier projects to the State through measures such as the New York Green CHIPS Program and the Green CHIPS Excelsior Jobs Tax Credit Program. New York State is considering providing financial support and tax incentives to Micron under the Green CHIPS Act and the Green CHIPS Excelsior Jobs Tax Credit Program to support construction and operation of the Proposed Project within New York State.

1.1 PURPOSE AND NEED

This EIS will support decision-making among the Federal, State, and local agencies responsible for evaluating the Proposed Project pursuant to their respective legal and regulatory authorities. In accordance with NEPA, this section states the purpose and need for CPO's proposed action relating to the Proposed Project. In accordance with SEQRA, this section also states Micron's purpose and need for the construction and operation of the Proposed Project.

1.1.1 CPO Purpose and Need

On December 10, 2024, the Department of Commerce announced final direct funding awards of up to $6.165 billion under the CHIPS Incentives Program to support Micron Technology's plans to construct two semiconductor manufacturing facilities in New York and one semiconductor manufacturing facility in Idaho (Department of Commerce, 2024). On June 12, 2025, the Department of Commerce announced a final direct funding award of up to $275 million under the CHIPS Incentives Program to support Micron Technology's plans to expand and modernize a semiconductor manufacturing facility in Virginia and an amendment to the original agreement to include one additional semiconductor manufacturing facility in Idaho.

The disbursement of Federal financial assistance under the terms of the CHIPS Incentives Program final award to Micron for Micron's Proposed Project in Clay, New York (referred to in this Final EIS as CPO's "Proposed Action") is subject to Micron's completion of certain Proposed Project milestones, including the requirement for Micron to obtain certain applicable permits, authorizations, and approvals for the Proposed Project. The disbursement of Federal financial assistance for the Proposed Project is subject to CPO's completion of a Final EIS and issuance of a Record of Decision (ROD) under NEPA.

The purpose and need for CPO's Proposed Action are to fulfill the Department of Commerce's statutory responsibilities under the CHIPS Act, including the requirement to provide Federal financial assistance to covered entities[4] to incentivize investment in facilities and equipment in the U.S. for the fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment.[5] In awarding CHIPS direct funding, the Department of Commerce must give priority to ensuring that a covered entity receiving such funding will: (1) manufacture semiconductors necessary to address gaps and vulnerabilities in the domestic supply chain across a diverse range of technology and process nodes; and (2) provide a secure supply of semiconductors necessary for the national security, manufacturing, critical infrastructure, and

[4] The term "covered entity" means a nonprofit entity, a private entity, a consortium of private entities, or a consortium of nonprofit, public, and private entities with a demonstrated ability to substantially finance, construct, expand, or modernize a facility relating to fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment. 15 U.S.C. § 4651(2).

[5] 15 U.S.C. § 4652(a)(1).

technology leadership of the U.S. and other essential elements of the economy of the U.S.[6]

Pursuant to these statutory responsibilities, the Department of Commerce considers applications under the CHIPS Incentives Program NOFO for commercial semiconductor facilities consistent with several program priorities, including economic security, national security, and commercial viability (CPO, 2023a, pp. 13-17). This category includes leading-edge facilities that manufacture logic or memory chips[7] that utilize the most advanced front-end fabrication processes and achieve the highest transistor and power performance. For memory chip production, this includes facilities capable of producing three-dimensional "not-and" (3D NAND) flash memory technology (also known as vertical NAND or V-NAND) that stacks memory cells vertically in multiple layers, which enables production of faster, more efficient, and more energy-saving memory and dynamic random-access memory (DRAM) chips (CPO, 2023a).

Memory chips using DRAM technology have crucial applications in military equipment, cybersecurity technology, the aerospace industry, artificial intelligence (AI), and other cutting-edge uses, as well as more common areas of the domestic consumer economy.[8] However, the global structure of the semiconductor supply chain is vulnerable to critical points of failure that create the risk of geopolitical tensions and large-scale supply interruptions, which could impair access to suppliers or customers. For example, South Korea currently has a 44 percent share of the global memory chip market. Therefore, expanding or "onshoring" domestic advanced semiconductor manufacturing capacity in key areas such as memory is critical to enhancing the resilience of the U.S. semiconductor supply chain to potential global disruptions (Varas et al., 2021). This need is particularly critical given that current DRAM production in the U.S. represents less than one percent of global DRAM production (Tech Insights, 2024). Accordingly, incentivizing expanded domestic DRAM production to a level sufficient to offset potential disruptions to U.S. economic and national security is a key Department of Commerce responsibility under the CHIPS Act.

Incentivizing sufficient domestic DRAM production for U.S. economic and national security purposes means that a domestic manufacturing facility must achieve similar scale to global competitors, which can only be accomplished by grouping multiple fabs into a close geographical location to ensure efficient infrastructure costs and an efficient upstream supply chain. The global DRAM market is highly competitive, with producers competing to supply primarily standardized DRAM products under high initial fixed production cost constraints. DRAM production viability therefore depends on production at a scale large enough to achieve globally competitive marginal

[6] *Id.* § 4652(a)(2)(D).

[7] Semiconductors are the foundational material used in the manufacturing of chips, such as logic or memory chips, which are then integrated into electronic devices.

[8] Micron Technology anticipates that DRAM produced by the Proposed Project would have uses in high bandwidth memory applications supporting AI technology, automotive safety systems such as computerized self-driving safety systems and braking, industrial platforms such as telecommunications, enterprise servers, and drones, and a wide array of consumer products, including PCs and mobile devices. *See, e.g.*, Micron Technology, Markets and Industries, https://www.micron.com/markets-industries

Micron Technology anticipates that the Proposed Project would enable increased DRAM supply for military and defense applications over time by being the sending-site for future technology transfers for the planned expansion of Micron Virginia's facility.

production cost and long-term commercial viability.

According to the National Institute of Standards and Technology (NIST) report titled *Vision for Success – Commercial Fabrication Facilities*, "[u]nlike logic chips, memory products are standardized and often interoperable: A memory chip from one company can typically substitute for a memory chip from another. These features generally increase the resiliency of the memory market, as memory customers willing to pay the prevailing market price can often source their products from any memory producer in the market. Memory chipmakers must thus compete largely on price and operate at lower margins relative to logic chipmakers. U.S. memory producers will therefore need to reach sufficient scale to benefit from the economies of scale enjoyed by larger clusters in East Asia." (CPO, 2023b). In keeping with these trends, leading global DRAM competitors in East Asia have announced plans to produce memory chips in multiple fab clusters of increasing scale.[9]

The complexity of the semiconductor wafer[10] manufacturing process is the primary driver of the need for larger logic and memory fab clusters that co-locate larger cleanrooms[11] on a single campus to facilitate necessary economies of scale. Fabs require an increasing amount of cleanroom space per wafer over time to accommodate the more sophisticated and larger tools needed for more advanced DRAM production. The cost of producing a wafer also depends on fixed costs of cleanroom and fab supporting infrastructure (e.g., site preparation, utilities, gas and chemical storage, and warehouse and office space) and the average operating cost per wafer (e.g., cost of services, labor and workforce training, warehousing, and upstream supplier service contracts). In general, co-locating more fabs with larger cleanroom spaces on a single site reduces both the fixed cost per wafer produced and the average operating cost per wafer.

Accordingly, viability in the industry depends on the construction of large fab clusters, or megafabs, on single campuses, with average fab sizes sufficient to accommodate necessary cleanroom space for specific technology types. 82 percent of major semiconductor memory campuses have more than two fabs (with fab sizes of 1.2 million sq. ft. or greater and cleanroom sizes of 600,000 sq. ft. or greater), and 55 percent have more than three fabs (1.8 million sq. ft. or greater). 72 percent of such campuses established in the past 20 years were built with more than three fabs to achieve increasingly necessary economies of scale. For additional discussion of the factors that drive semiconductor memory campus sizing and configuration, see Appendix A-1.

Currently, Micron Technology manufactures all DRAM produced in the U.S. (less than one percent of global DRAM production). These DRAM chips serve certain industrial markets and cannot support new AI technology use cases. To meet CHIPS Incentives Program objectives, Micron Technology proposed to increase its U.S.-based DRAM production by a factor of 12 (i.e., to approximately 12 percent of global DRAM output) over the next two decades, which would also bring Micron Technology's overall supply in line with industry demand growth trends

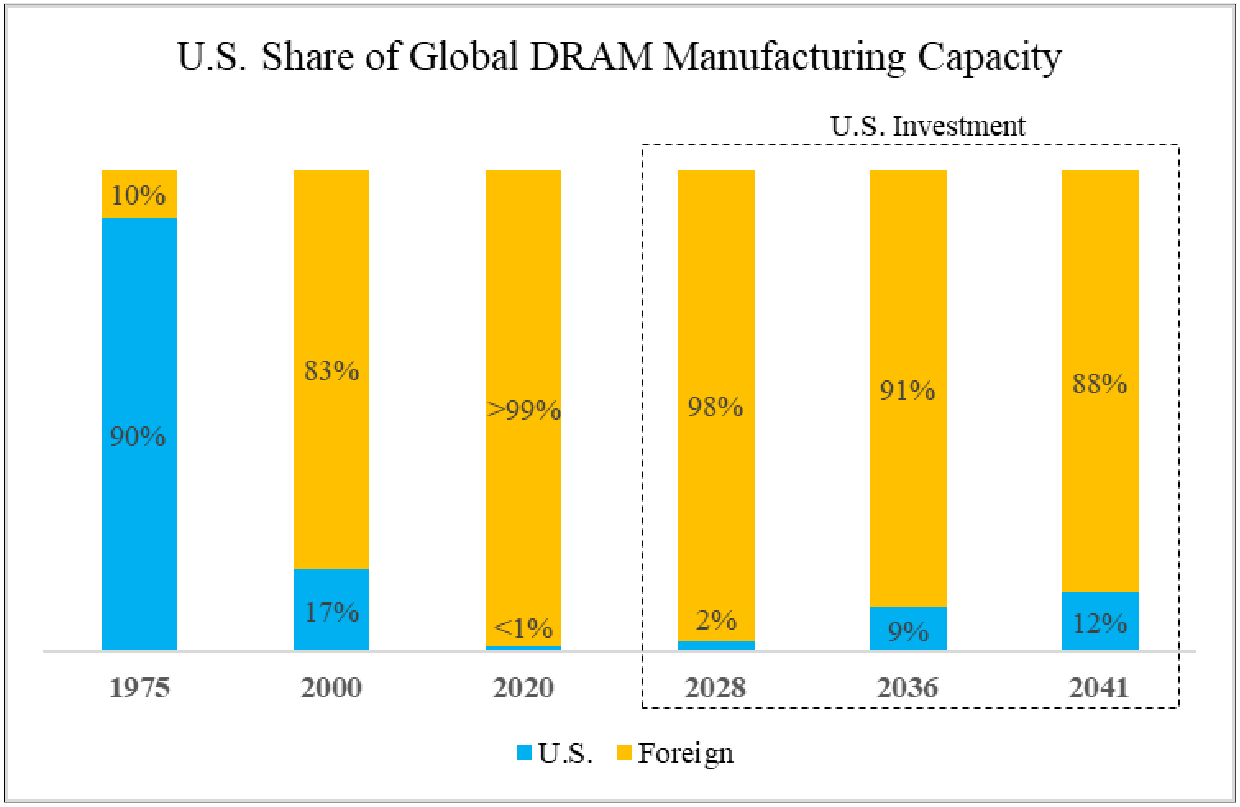
[9] SK hynix has proposed a 4-fab DRAM cluster in Yongin, South Korea estimated to be completed by 2042 (Shilov, 2024). Samsung has proposed a 6-fab DRAM and advanced logic cluster in Yongin, estimated to be completed by 2047 (Ko, 2024).

[10] A wafer is a thin slice of semiconductor material used in fabricating chips.

[11] A cleanroom is a highly advanced semiconductor design, manufacturing, or testing space built to extremely precise engineering specifications, including strict filtration, temperature, and humidity controls.

(Micron Technology, 2023). This production increase is not achievable through modernizations and expansions at existing domestic Micron locations alone and would necessitate the construction of a new semiconductor manufacturing campus. Figure 1.1-1 illustrates Micron Technology's proposal to increase the U.S. share of global DRAM manufacturing capacity to a level that meets the U.S. need for domestically produced memory chips.

Figure 1.1-1 Micron Technology Proposal to Increase U.S. DRAM Production



Source: Tech Insights (2024); Micron Technology estimates. Percentages are approximations and account for production at all three Micron domestic sites.

As part of its merits review of Micron's application, the Department of Commerce determined that Micron's proposal for the construction of a new semiconductor manufacturing campus would achieve domestic memory production at the scale necessary to offset potential disruptions to U.S. economic and national security from the risks described above. Although the Department of Commerce's final award to Micron only includes direct funding to support Micron's construction and operation of Fabs 1 and 2, the Department of Commerce based its award decision on Micron's proposal to establish a full 4-fab cluster by 2041 (which would ramp up to full operational capacity by 2045).

The Department of Commerce's funding award for the construction of a semiconductor memory facility is based on two factors: (1) the amount of cleanroom space that would be required to achieve an economically viable domestic memory chip output sufficient to meet U.S. economic and national security objectives, based on economic modeling; and (2) by extension, the amount of total building area and site configuration that would be required to support that cleanroom space, accounting for technological, logistical, and cost considerations.

First, based on Micron's economic model supporting its CHIPS application, the Department of Commerce determined that Micron would need to construct 2.4 million sq. ft. of cleanroom space capable of producing an average of 52,000 wafers per week over the life of the project to achieve the level of domestic memory chip output sufficient to meet U.S. economic and national security objectives. This output and associated cleanroom space requirement is based on Micron's sources and uses information submitted in support of its CHIPS application, including economic modeling and estimates that Micron prepares as part of its annual long-range Sales and Operations Planning (SNOP) process. Micron uses its SNOP process to forecast overall memory sector market growth based on market intelligence, macro trends from new technologies such as AI, virtual reality, 5G wireless proliferation, and many other factors. Based on its product mixes and technological capabilities, such as the number of bits it can manufacture per wafer, Micron then determines how many wafers would be required to meet DRAM market demand, which in turn determines the cleanroom space required to meet that demand.[12]

Second, the Department of Commerce determined that Micron would need to construct four fabs co-located at a single site with sufficient supporting infrastructure and utility capacity in order to accommodate the 2.4 million sq. ft. of cleanroom space necessary to achieve the required level of domestic DRAM production in a configuration that would be technically and economically practicable. Due to the nature of the technology, infrastructure, and utilities needed to support advanced cleanrooms, semiconductor fabrication facility building space ranks among the most expensive types of real estate globally by cost per square foot. This constraint requires large-scale semiconductor facilities to be simultaneously: (a) large enough to achieve a utilization rate of their expensive facility infrastructure capable of justifying their capital cost, known as the capital asset utilization (CAU) rate; and (b) compact enough with buildings efficiently designed to meet precise sizing, engineering, and interoperability specifications while minimizing overall building, utility, and equipment costs.[13]

Based on the above considerations and Micron's sources and uses information submitted in support of its CHIPS application, the Department of Commerce determined that without the ability to build four co-located fabs, Micron's proposal would incur prohibitive additional costs and operational inefficiencies, which would likely force Micron to withdraw its application and pursue a memory campus in a lower-cost geography outside of the U.S. Therefore, the Department of Commerce determined that a 4-fab memory campus with an efficient layout at a single location would be required to ensure an economically and commercially viable operation that would meet

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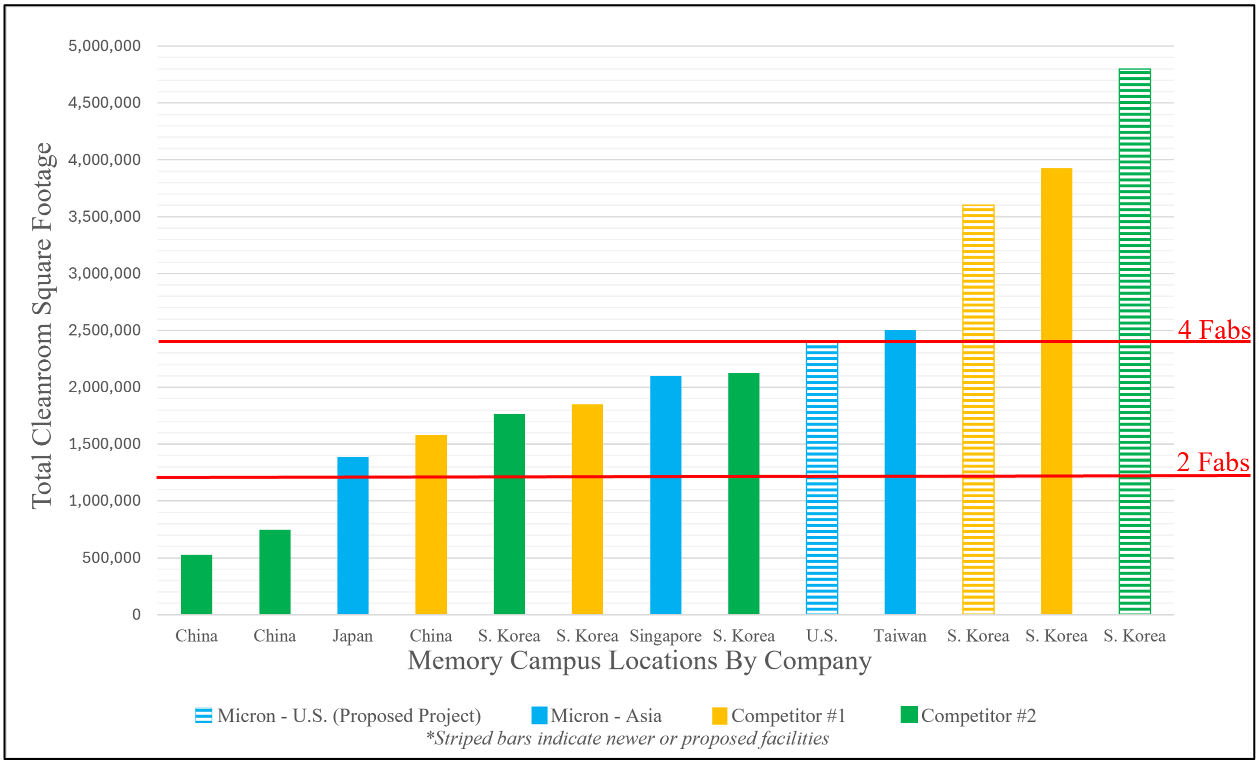
[12] AI workloads require high-bandwidth memory (HBM) chips, which take more steps to produce than traditional DRAM chips, such as double-data rate (DDR) 4 and DDR 5 products. HBM products require more manufacturing steps due to their speed requirements, the need to stack HBM chips into modules using Through-Silicon-Via technology, and other performance requirements. Each AI module (i.e., an AI product containing a logic chip plus memory chips) requires dozens of HBM chips. Micron plans to manufacture a mix of these products in NY, and the HBM requirements for these products are anticipated to create upward pressure on the amount of cleanroom space required to meet the growing market demand, which is why Micron has announced an additional fab in Idaho (Narasimhan, 2024).

[13] Additionally, Micron projects that have been announced for Virginia and Idaho are co-located with Micron's existing manufacturing and R&D/Headquarters respectively. These expansion projects do not rely on the same efficiencies of scale that are required for the construction of a greenfield site like the Proposed Project. Unlike the Proposed Project, the expansion projects can rely on existing infrastructure, site components and existing cleanroom space.

the Department of Commerce's economic and national security responsibilities under the CHIPS Act.

Figure 1.1-2 below shows the competitive position the Proposed Project's fabs would occupy compared to major competitors, based on total campus cleanroom space. The x-axis shows each competitor's campus location, and the y-axis shows the campus cleanroom space in sq. ft. The figure shows an alternating progression of companies building larger campuses as they work to stay ahead of the competition, reflecting a market trend that has since surpassed 2-fab and 3-fab campuses (1.2-1.8 million sq. ft. of cleanroom space) toward campuses crossing the 4-fab threshold (2.4 million sq. ft. or more of cleanroom space). Competitors also are continuing to add capacity to existing campuses over time.

Figure 1.1-2 Proposed Project and Competitor Campus Cleanroom Space



Sources: Micron Technology (n.d.); SEMI World Fab Forecast Report (SEMI, 2025). Note: estimates assume standard large memory campus fab cleanroom sizes of 600,000 sq. ft.

In sum, CPO considered the totality of the specific memory chip factors described above as part of its decision-making process under the CHIPS Act, including the risks to national and economic security posed by a lack of U.S.-based large-scale memory chip production capacity, and the fab cluster and size benchmarks necessary to establish a technologically and economically viable domestic memory chip production capacity.

1.1.2 Micron Purpose and Need

As noted above, this section states Micron's purpose and need in accordance with SEQRA. Micron's purpose and need for the Proposed Project are to construct and operate a state-of-the-art, economically viable semiconductor manufacturing facility. In coordination with CPO and OCIDA, and based on its SNOP process, Micron determined that the only feasible method of establishing an economically viable large-scale memory chip production facility in the U.S. would be to develop a 4-fab facility on a single site capable of efficiently increasing Micron's U.S.-based DRAM production 12-fold from current levels to 52,000 wafers per week, which also would ensure a resilient domestic supply of DRAM chips consistent with CHIPS Incentives Program and New York Green CHIPS Program objectives.

Micron identified the WPCP as a suitable location for the Proposed Project based on the site's ability to accommodate a 4-fab footprint and its proximity to the utility, transportation, and human resources infrastructure necessary to achieve the economies of scale the Proposed Project would require. Accordingly, Micron proposes to lease and ultimately purchase the WPCP from OCIDA and to construct and operate a 4-fab facility at that location.

1.2 PREPARATION OF THE EIS

CPO and OCIDA jointly prepared this Final EIS to evaluate the potential environmental effects of the Proposed Project as required under NEPA and SEQRA. Specifically, CPO prepared the EIS to identify and assess the reasonably foreseeable environmental effects of the Proposed Action and a reasonable range of alternatives, facilitate public involvement and informed agency decision-making, and recommend appropriate mitigation measures. OCIDA prepared the EIS to consider the environmental effects of the Proposed Action and alternatives equally with social and economic factors before it or any involved State or local agency may issue SEQRA findings and exercise discretionary decision-making or funding authority with respect to the Proposed Project, and to propose mitigation measures to avoid or minimize adverse environmental effects to the maximum extent practicable.

CPO and OCIDA agreed to act as joint lead agencies under NEPA and SEQRA. The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (USEPA) agreed to act as cooperating agencies under NEPA based on their jurisdiction by law and special expertise with respect to evaluating the environmental effects of the Proposed Action and alternatives. The FHWA and the U.S. Fish and Wildlife Service (USFWS) agreed to act as participating agencies in the development of the EIS. The Onondaga Nation agreed to be a participating entity in the development of the EIS. OCIDA coordinated input from several State and local agencies into the EIS. The EIS provides a basis for coordinated Federal, State, Tribal, and local input and review in a single document. The following sections describe the specific roles of each entity in the environmental review process.

1.2.1 Lead and Cooperating Agencies

1.2.1.1 CHIPS Program Office

On behalf of the Department of Commerce, CPO is responsible under the CHIPS Act for determining whether to provide Federal funding to Micron to support the Proposed Project. CPO has special expertise in evaluating the environmental effects of semiconductor manufacturing and is the lead Federal agency responsible for preparing this EIS under NEPA. CPO also is the lead agency for purposes of consultations under Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA).

1.2.1.2 Onondaga County Industrial Development Agency

OCIDA is the lead agency responsible for preparing this EIS under SEQRA, based on its role in the proposed lease and subsequent sale of WPCP to Micron, the potential granting to Micron of financial assistance within the meaning of New York General Municipal Law § 854(14), and the potential undertaking of property condemnation pursuant to the New York EDPL. OCIDA is also coordinating input from other State and local agencies.

1.2.1.3 U.S. Army Corps of Engineers

USACE has jurisdiction and authority under Section 404 of the Clean Water Act (CWA), which regulates the discharge of dredged or fill material into waters of the U.S., and Section 10 of the Rivers and Harbors Act, which regulates work or structures in, over, or under navigable waters of the U.S. USACE agreed to act as a cooperating agency in the preparation of the EIS so that it may rely on the content of the EIS and its appendices for making permit decisions regarding discharges of dredged or fill material into waters of the U.S. associated with the Proposed Project and the Connected Actions. The Proposed Project would occur within the USACE Great Lakes and Ohio River Division, Buffalo District. Staff from the Buffalo District cooperated with the lead agencies to prepare the EIS.

USACE will obtain the views of Tribal Nations, natural resource agencies, and the public prior to reaching its decisions on the Proposed Project. As an element of its review, USACE must consider whether the Proposed Project represents the least environmentally damaging practicable alternative, which requires the avoidance, minimization, and mitigation of unavoidable impacts on waters of the U.S. The EIS contains information USACE may use to support this review. USACE will decide whether to adopt the EIS based on an independent review of the document and whether it satisfies USACE's comments. USACE may prepare a separate ROD to formally document its decisions with respect to the Proposed Project, including decisions based on CWA Section 404(b)(1) analyses and environmental mitigation commitments.

1.2.1.4 U.S. Environmental Protection Agency

USEPA agreed to act as a cooperating agency in the preparation of the EIS. Pursuant to Section 309 of the Clean Air Act (CAA), USEPA is responsible for reviewing and commenting in writing on the environmental effects of the Proposed Action and alternatives identified in the EIS. USEPA also has regulatory responsibilities under the CWA Section 404 and Section 401 water quality certification processes and is responsible for reviewing Micron's applications for CAA Title V facility operating permits.

1.2.2 Participating Agencies and Entities

1.2.2.1 Federal Highway Administration

FHWA agreed to act as a participating agency in the preparation of the EIS based on its special expertise in analyzing transportation and traffic studies and analyses.

1.2.2.2 U.S. Fish and Wildlife Service

USFWS agreed to act as a participating agency in the development of the EIS based on its special expertise in evaluating effects on aquatic and terrestrial wildlife and their habitats. Pursuant to the ESA Section 7 consultation process, CPO is consulting with USFWS to ensure that the Proposed Action is not likely to jeopardize the continued existence of any Federally listed threatened or endangered species or destroy or adversely modify designated critical habitat. As part of the Section 7 consultation process, USFWS will prepare a Biological Opinion concerning the take of Federally listed species.

1.2.2.3 Onondaga Nation

The Onondaga Nation elected to participate in the development of the EIS as a participating entity, to contribute its Indigenous Knowledge and special expertise in Haudenosaunee and Onondaga culture and the interrelationship of the natural world in this geographic area.

1.2.3 State and Local Agencies

OCIDA determined that the Proposed Project is a Type I action under SEQRA requiring the preparation of an EIS and a coordinated review among all involved and interested State and local agencies.[14] As lead agency under SEQRA, OCIDA considered the interests and concerns of all such agencies and coordinated their input in the EIS. Table 1.2-1 lists the State and local involved and interested agencies and their roles with respect to the Proposed Project.

Table 1.2-1 State and Local Involved and Interested Agencies

Agency	Role
Involved Agencies	
New York State Department of Environmental Conservation (NYSDEC)	Responsible for permits and authorizations related to air quality, wetlands, threatened and endangered species, water withdrawal, coastal erosion management, water discharges from on-site and off-site land disturbance, discharges associated with industrial activity, direct discharge to New York State waters, CWA Section 401 water quality certification, hazardous substance petroleum and chemical bulk storage, and importation of fill material.
Empire State Development, including the New York State Department of Economic Development and the New York State Urban Development Corporation (ESD)	Responsible for review and approval Micron's Green CHIPS and Excelsior Jobs Tax Credit Program applications.
New York Department of State (NYSDOS)	Responsible for issuing decision on Coastal Zone Management Act (CZMA) Federal consistency.

[14] *See* 6 NYCRR § 617.6(b)(3).

New York State Department of Transportation (NYSDOT)	Operates and maintains the State transportation system that would serve the Proposed Project. Responsible for assessing Proposed Project effects on State transportation facilities, evaluating proposed mitigation measures, and issuing permits for work affecting State highways, such as highway work permits and use and occupancy permits.
New York State Office of Parks, Recreation and Historic Preservation (OPRHP)	Serves as the State Historic Preservation Officer for purposes of NHPA Section 106 consultation.
New York Office of General Services (NYSOGS)	Responsible for construction permit and easement to occupy underwater lands.
New York Power Authority (NYPA)	Responsible for approving ReCharge NY program and high-load factor energy allocations for the Proposed Project.
New York State Canal Corporation	Responsible for issuing use and occupancy permits, easements, and work permits related to water line crossings.
Onondaga County Department of Transportation (OCDOT)	Operates and maintains the County transportation system that would serve the Proposed Project. Responsible for assessing Proposed Project effects on County transportation facilities, evaluating proposed mitigation measures, and issuing permits for work affecting County highways, such as work permits and use and occupancy permits.
Onondaga County Water Authority (OCWA)	Responsible for expanding capacity of and extending potable water lines to serve the Proposed Project. Considering proposed water supply system upgrades and installation of new water transmission mains to serve the Proposed Project.
Onondaga County Department of Water Environment Protection (OCDWEP)	Responsible for development and construction of proposed new industrial wastewater treatment plant (IWWTP) and industrial wastewater and reclaimed water conveyance to serve the Proposed Project. Responsible for submitting application to NYSDEC for modification of OCDWEP Oak Orchard Wastewater Treatment Plant (OOWWTP) site's State Pollutant Discharge Elimination System (SPDES) permit, including permit modifications associated with any on-site water reclamation treatment processes. Responsible for decisions pertaining to OCDWEP industrial pretreatment program as approved by USEPA.
Town of Clay Town Board	Responsible for zoning amendments, special use permits, and discontinuance of Town road.
Town of Clay Planning Board	Responsible for site plan / subdivision approval (re-subdivision of multiple parcels) and municipal separate storm sewer system and Stormwater Pollution Prevention Plan (SWPPP) approval.
Town of Cicero Planning Board	Responsible for subdivision approval.

Interested Agencies	
New York State Department of Public Service (NYSDPS) / New York State Public Service Commission (NYSPSC)	Responsible for approval of Article VII application for proposed National Grid electric transmission electricity improvements and 401 water quality certification (see Section 3.3, Water Resources).
New York State Energy Research and Development Authority (NYSERDA)	Collaborating with ESD in review of Micron's Green CHIPS and Excelsior Jobs Tax Credit Program applications.
Onondaga County Department of Planning	General consultation.
City of Syracuse	General consultation.
Syracuse Metropolitan Transportation Council (SMTC)	General consultation and approval actions to add to official regional transportation plans.
Town of Cicero Town Board	Referral per General Municipal Law.

1.3 PUBLIC REVIEW AND COMMENT

1.3.1 SEQRA Scoping

After OCIDA received an Application for Financial Assistance from Micron, it held a public meeting and circulated a notice of intent to all involved agencies to serve as SEQRA lead agency on July 28, 2023. No objection to that notice was received during the subsequent 30-day comment period. On September 14, 2023, OCIDA issued a Positive Declaration indicating the need for an EIS and scheduled a public scoping meeting to be held on October 11, 2023.

The Notice of SEQRA Positive Declaration, Availability of Draft SEQRA Scope, and Public Scoping Session was published in the Environmental Notice Bulletin on September 20, 2023. Notice of the public scoping meeting was placed in *The Post Standard* (Syracuse.com), the primary newspaper of general circulation serving the Central New York region, on September 19, 2023. OCIDA posted the Draft SEQRA Scope and information on the Proposed Project on its website (https://ongoved.com/).

The comment period for the SEQRA scoping process was extended beyond the required 30 days from September 20, 2023, to October 31, 2023. During this period, OCIDA held the public scoping meeting at 6:30 p.m. on October 11, 2023, to obtain input from the public. Everyone who registered or asked to speak was given the opportunity to submit a verbal comment. The scoping meeting provided simultaneous Spanish and American Sign Language interpretation; no additional language translation services or special needs assistance were requested. Comments also were accepted during the scoping period via electronic mail to micron@ongov.net and via U.S. Mail, Attn: Micron Project, Onondaga County Industrial Development Agency, 335 Montgomery Street, 2nd Floor, Syracuse, NY 13202.

In total, 39 individuals, organizations, and agencies provided comments during the public comment period, including written comment letters from USFWS and NYSDEC. OCIDA considered each comment received during the SEQRA scoping period to determine the final scope of the Draft EIS under SEQRA and inform the related technical analyses and environmental resources to be evaluated. On December 14, 2023, OCIDA adopted the Final SEQRA Scope, which was made available to the previously noticed agencies and posted on OCIDA's website. A copy of the Final SEQRA Scope is included in Appendix A-2.

1.3.2 NEPA Scoping

USACE was initially the lead Federal agency for the Proposed Project under NEPA and published a Notice of Intent (NOI) to Prepare an EIS and conduct a public scoping meeting in the *Federal Register* on March 5, 2024. USACE also mailed 191 scoping letters to interested parties and stakeholders, including: adjacent property owners to the proposed Micron Campus; elected State, County, City, and Town officials; Federal and State agencies; and the Onondaga Nation, the Oneida Indian Nation, the Oneida Nation of Wisconsin, the Wyandotte Nation, the Tuscarora Nation, and the Cayuga Nation. USACE held a public scoping meeting at the Clay Town Hall in Clay, NY on Tuesday, March 19, 2024, with the cooperation of CPO and OCIDA. Approximately 175 individuals participated, and 23 individuals made verbal comments regarding the Proposed Project. The public comment period on the NOI and NEPA scoping closed on April 5, 2024.

By subsequent agreement with USACE, CPO became the lead Federal agency for the Proposed Project on behalf of the Department of Commerce on April 6, 2024.

CPO considered each comment received during the NEPA scoping period and coordinated with OCIDA and USACE to determine the final scope of the Draft EIS under NEPA and inform the related technical analyses and environmental resources to be evaluated. For a summary of the comments that CPO and USACE received during the NEPA scoping period, see Appendix A-3.

1.3.3 Public Review of Draft EIS

CPO filed the Draft EIS with USEPA for issuance of a Notice of Availability in the *Federal Register* and mailed the Notice of Availability to the parties on the mailing list (Chapter 8, Distribution List). In addition, on June 25, 2025, OCIDA adopted the Draft EIS as complete for the purposes of commencement of public review and set an August 11, 2025, deadline for the receipt of public comments. On that same date, OCIDA adopted a Public Hearing Resolution and filed the Draft EIS with the Chief Executive Officer of the Town of Clay and the Town of Cicero and published the Notice of Availability in the Environmental Notice Bulletin and *The Post-Standard*. The Notices of Availability explained how to access the Draft EIS on CPO's and OCIDA's websites, announced a 45-day period for the public to comment on the Draft EIS, and explained how electronic or written comments can be submitted to CPO and OCIDA.

In addition, the Notices of Availability provided notice that a public hearing to take verbal comments on the Draft EIS would be held on July 24, 2025, from 10AM – 1PM, 2PM – 5PM and 6PM-9PM at the Liverpool High School Auditorium, 4338 Wetzel Road, Liverpool, New York, 13090.

Comments on the Draft EIS were accepted in writing, either by first class mail or electronic mail, or as part of the July 24, 2025, Public Hearing. In total, there were approximately 1270 comment submissions received from the general public on the Draft EIS, some of which were duplicates, from a total of approximately 1050 commenters, some in support of the Proposed Project and Connected Actions and others opposed, which includes three comments from local elected officials. In addition, comments were received from 12 federal, state and local agencies.

1.4 PERMITS, APPROVALS, AND CONSULTATIONS

Table 1.4-1 identifies the major permits, approvals, and consultations required for the Proposed Project and Connected Actions. Micron is responsible for obtaining all permits, approvals, or other authorizations required for the Proposed Project, regardless of whether they appear in Table 1.4-1.

Table 1.4-1 Permits, Approvals, and Consultations

Permit / Approval	Agency	Description
Federal		
CWA Section 404 permit	USACE	Permit required for the discharge of dredged or fill material into waters of the U.S. (WOTUS), including wetlands (33 U.S.C. § 1344).
Rivers and Harbors Act Section 10 permit	USACE	Permit required for structures and/or work in or affecting navigable WOTUS (33 U.S.C. § 403).
ESA Section 7 Consultation	USFWS	Formal consultation with Biological Opinion and potential Incidental Take Statement issued by USFWS authorizing incidental take of endangered species (16 U.S.C. § 1536).
NHPA Section 106 Consultation	NYSHPO	Consultation with consulting parties regarding effects of an undertaking on historic properties and development of a programmatic agreement (54 U.S.C. § 306108).
State and Local		
Financial assistance	OCIDA	Approval of application for certain financial assistance; approval of lease and sale of the WPCP, as authorized under law (General Municipal Law Chapter 24).
Financial assistance	ESD	Refundable tax credits under New York's Green CHIPS Excelsior Jobs Tax Credit Program (Green CHIPS Act (S. 9467 / A. 10507)).
Authorizations for structures in state-owned lands under water	NYSOGS	Approval of a lease, easement, or other interest for structures and appurtenances in, on, or above state-owned lands under water (Public Lands Law Articles 2 and 6; 6 NYCRR Part 428).
Work and/or Occupation Permit	NYS Canal Corporation	Permits for work in and/or occupancy on Canal property (Public Authorities Law Chapter 43-A, Title 1, Section 1005-B).
Certificate of Environmental Compatibility and Public Need	NYSDPS / NYSPSC	Approval of application for certificate (Public Service Law Article 7) (exempt from SEQRA review; NYSDPS conducts a separate environmental review).

Incidental Take Permit	NYSDEC	Permit required for incidental take of state-listed species (ECL Article 11; 6 NYCRR Part 182).
Stream Disturbance or Modification permit	NYSDEC	Permit required for any change, modification, or disturbance of any protected stream, its bed or banks, or to remove from its bed or banks sand, gravel, or other material (ECL Article 15; 6 NYCRR § 608.2).
Protection of Waters permit	NYSDEC	Permit required to excavate or place fill in waters protected by the State (ECL Article 15; 6 NYCRR § 608.5).
Water Supply / Withdrawal Permit	NYSDEC	Permit required for the construction, operation, or maintenance of a water withdrawal system (ECL Article 15; 6 NYCRR Part 601).
SPDES Discharge Permit	NYSDEC	SPDES permit required to discharge or cause a surface or groundwater discharge of any pollutant from any outlet or point source into the waters of the State (ECL Article 17; 6 NYCRR Part 750).
SPDES Multi-Sector General Permit (MSGP)	NYSDEC	Permit for industrial activities that discharge stormwater to surface waters of the state must obtain coverage under MSGP (ECL Article 17; 6 NYCRR Part 750).
SPDES General Permit for Construction Activities	NYSDEC	Construction activities with soil disturbance of one or more acres must obtain coverage under the General Permit for Stormwater Discharges from Construction Activities (ECL Article 17; 6 NYCRR Part 750).
Reclaimed water registration	NYSDEC	Registration required for use of reclaimed wastewater or greywater (ECL Article 15).
SPDES Discharge Permit, Septic System Approval	NYSDEC	SPDES permit to discharge or cause a surface or groundwater discharge, and approval of plans for septic disposal system (ECL Article 17; 6 NYCRR Part 750).
CWA Section 401 Water Quality Certification	NYSDEC / NYSDPS	Certification that activity will not violate state water quality standards (33 U.S.C. § 1341).
CAA Title V permit	NYSDEC	Permit required to construct and operate a facility that is considered a major source of air emissions that are at or above certain thresholds (New York Environmental Conservation Law (ECL) Article 19).
Activities on wetland and adjacent areas	NYSDEC	Permit or letter of permission required to conduct activities on wetlands or adjacent areas not specifically exempted from regulation (ECL Article 24; 6 NYCRR Parts 663-664).
Collection, Disposal and Treatment of Refuse and Other Solid Wastes	NYSDEC	Permit for generators and transporters of hazardous wastes (ECL Article 27; 6 NYCRR Part 373).

Beneficial Use Determination	NYSDEC	Permit for the beneficial use of large quantities of imported excavated materials that are not mined or purchased (ECL Article 27; 6 NYCRR Parts 360-365).
Hazardous Substances and Petroleum Bulk Storage Permits	NYSDEC	Registrations or license for facilities that store hazardous substances or petroleum above threshold quantities (ECL Articles 17 and 40; 6 NYCRR Parts 597, 598, 610, 613).
State air facility permit / registration	NYSDEC	State air facility permits are required for facilities with potential air emissions that are below major source thresholds, but above 50% of the level that would make them a major source. Air facility registrations are required for facilities with regulated air emissions that are below criteria for either State facility permits or Title V permits (ECL Article 19; 6 NYCRR Part 201).
Temporary Roadway Access permit	NYSDOT	Permit for new or temporary access to a state highway or for activities conducted within the right of way of a NYS highway (NYS Highway Law Article III, § 52).
Access or Right-of-Way permit	OCDOT	Permit for construction or modification of buildings, driveway, and means of access related to County roads (NYS Highway Law Article VI, § 136).
County wastewater discharge permit	OCDWEP	Waste discharge permit to connect to or discharge into the County sewer system (Onondaga County Administrative Code Article XXII, Section 22, *et seq.*; Appendix 11-A, Sections 1153 g, j, 11.67, 11.68, 11.79) and pursuant to Article IV, Section 4.01 of the Rules and Regulations Relating to the Use of the Public Sewer System issued by the County of Onondaga, Department of Water Environment Protection.
County Planning Review and Recommendation	Onondaga County Planning Department	Review and recommendation by the Onondaga County Planning Department relative to the discretionary approvals required by the Towns of Clay and Cicero (General Municipal Law Section 239).
Zoning Amendment	Town of Clay Town Board	Approval by Town Board of a Petition for Change of Zone, amending the zoning ordinance, and to reclassify the zoning district (Town of Clay Code Section 230).
Subdivision approval	Town of Clay Planning Board	Review and approval of applications for subdivision of land (Town of Clay Code Chapter 200, Chapter 230 § 230-26.B.(2) (Subdivision of Land).
Site Plan Review	Town of Clay Planning Board	Review and approval of site plans (Town of Clay Code § 230-26.B.(4)).
Special Use Permit	Town of Clay Planning Board	Review and approval of applications for special use permits (Town of Clay Code § 230-26.B.(3); §§ 230-27, generally).

Subdivision of Land	Town of Cicero Planning Board	Review and approval of applications for subdivision of land (Chapter 185, Code of the Town of Cicero).

2.0 PROPOSED ACTION AND ALTERNATIVES

This EIS evaluates the Proposed Action and a No Action Alternative. The Proposed Action is identified and referred to in this EIS as the Preferred Action Alternative because it is the alternative that would best meet CPO's purpose and need under NEPA and Micron's purpose and need under SEQRA. The Preferred Action Alternative would encompass the Proposed Project and Connected Actions described in Section 2.1 below. The No Action Alternative, as well as three alternatives that were considered but dismissed from further consideration, are discussed in Section 2.2. The WPCP was selected as the site for the proposed Micron Campus following independent site selection processes conducted over time by the State of New York, Onondaga County, and Micron. For a summary of these site selection processes, see Appendix B-1.

2.1 PROPOSED PROJECT AND CONNECTED ACTIONS

The Preferred Action Alternative would consist of: (1) the Proposed Project, which would include the construction and operation by Micron of the Micron Campus, the Rail Spur Site, and the Childcare Site, and the leasing and operation by Micron of the Warehouse Site; and (2) the Connected Actions, which would include the expansion of certain existing utility properties and the construction and operation of various utility improvements by National Grid, OCWA, OCDWEP, and others to support the electricity, natural gas, water supply, wastewater, and telecommunication needs of the Proposed Project.[15]

The build-out of the Proposed Project and Connected Actions would occur over a 16-year period, based around the construction of the four fabs at the Micron Campus. Although some components of the Preferred Action Alternative have undergone extensive planning, the details of some of the later Connected Actions are still in the planning stages. For additional information and analysis of the estimated resource demands of the Proposed Project and Connected Actions, see Section 3.10 (Utilities and Supporting Infrastructure).

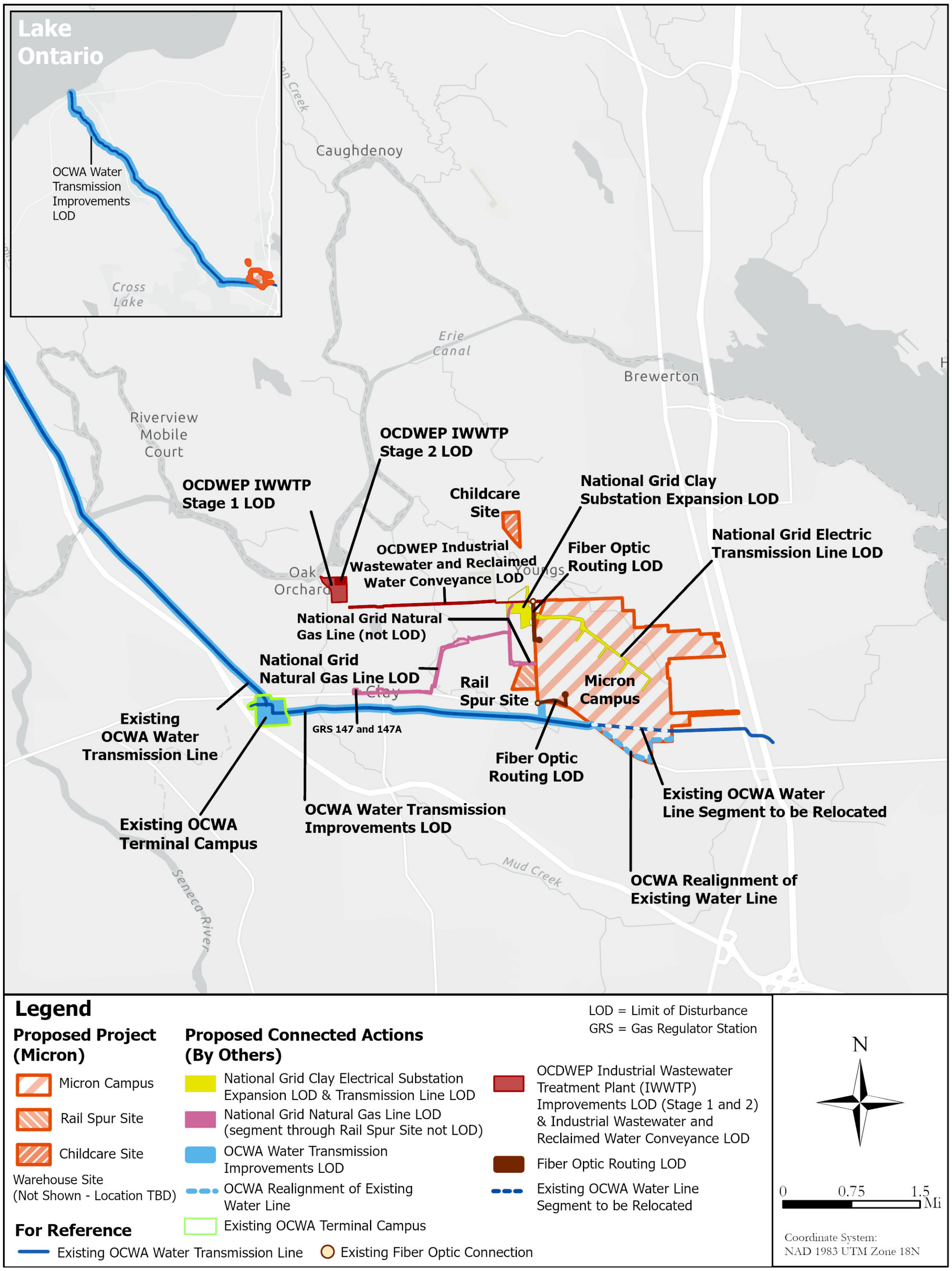
Figure 2.1-1 on the next page shows a map of the components of the Proposed Project and Connected Actions. On the following pages, Figure 2.1-2 shows the boundary of the proposed Micron Campus, which would total approximately 1,377 acres, including the 1,339-acre WPCP, a 28-acre South Finger area, the nine-acre Burnet Road right-of-way (ROW), and a one-acre jack and bore site,[16] and Figure 2.1-3 shows the construction timeline for the Proposed Project and Connected Actions.

Table 2.1-1, following the figures, briefly describes the Proposed Project and Connected Action components, which are described in detail in Sections 2.1.1 through 2.1.9.

[15] For purposes of this EIS, the term "Connected Action" (synonymous with the term "related action" under SEQRA) refers to a Federal, State, or local activity that would not proceed without construction and operation of the Proposed Project and is therefore considered in this EIS along with the Proposed Project.

[16] Although the discussion of the Affected Environment in the EIS generally refers to the WPCP to describe the existing location where the proposed Micron Campus would be built, the Micron Campus also would include the additional properties and acreages adjacent to the current WPCP as described above.

Figure 2.1-1 Proposed Project and Connected Actions[17]



Source: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.

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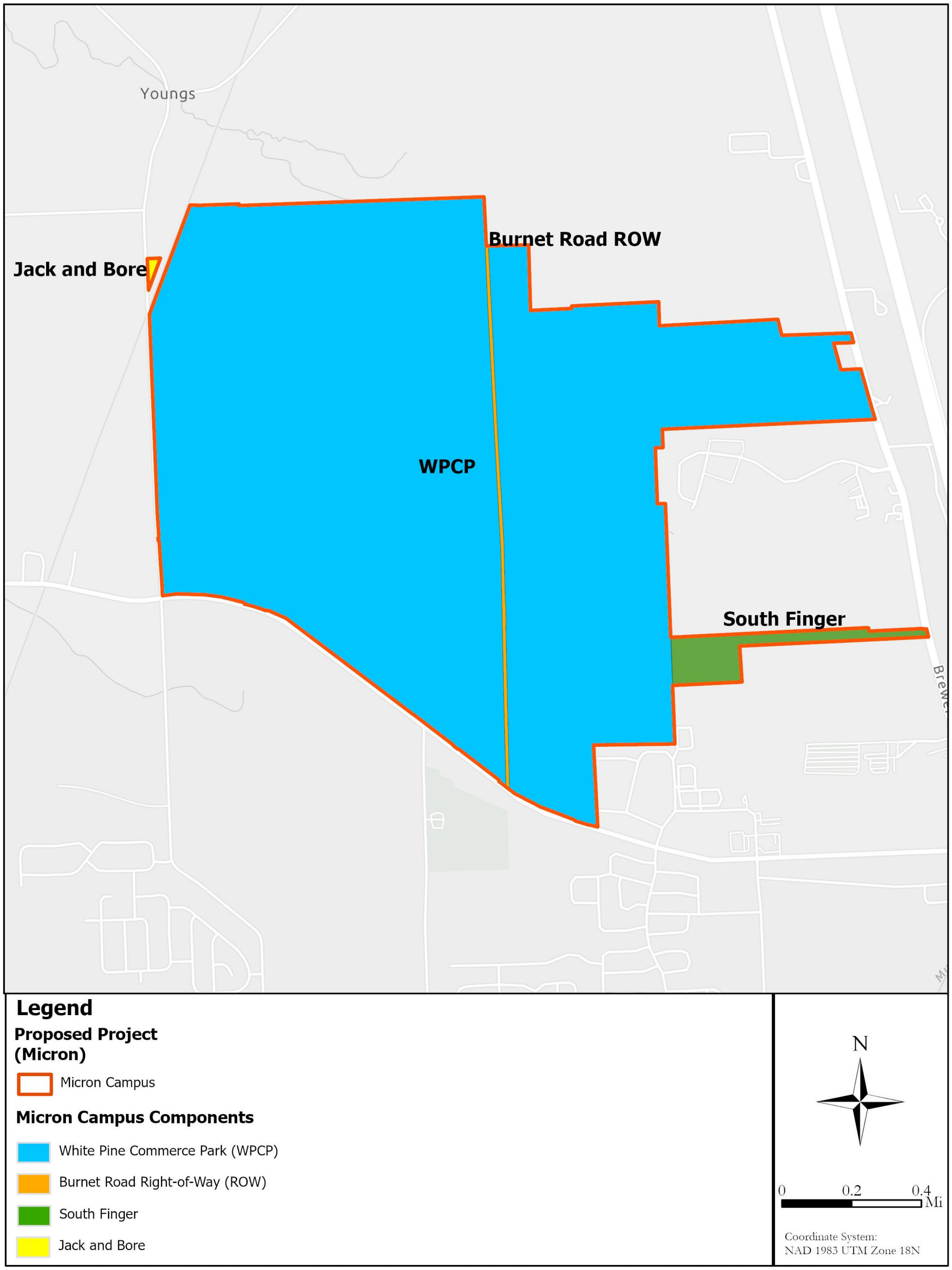
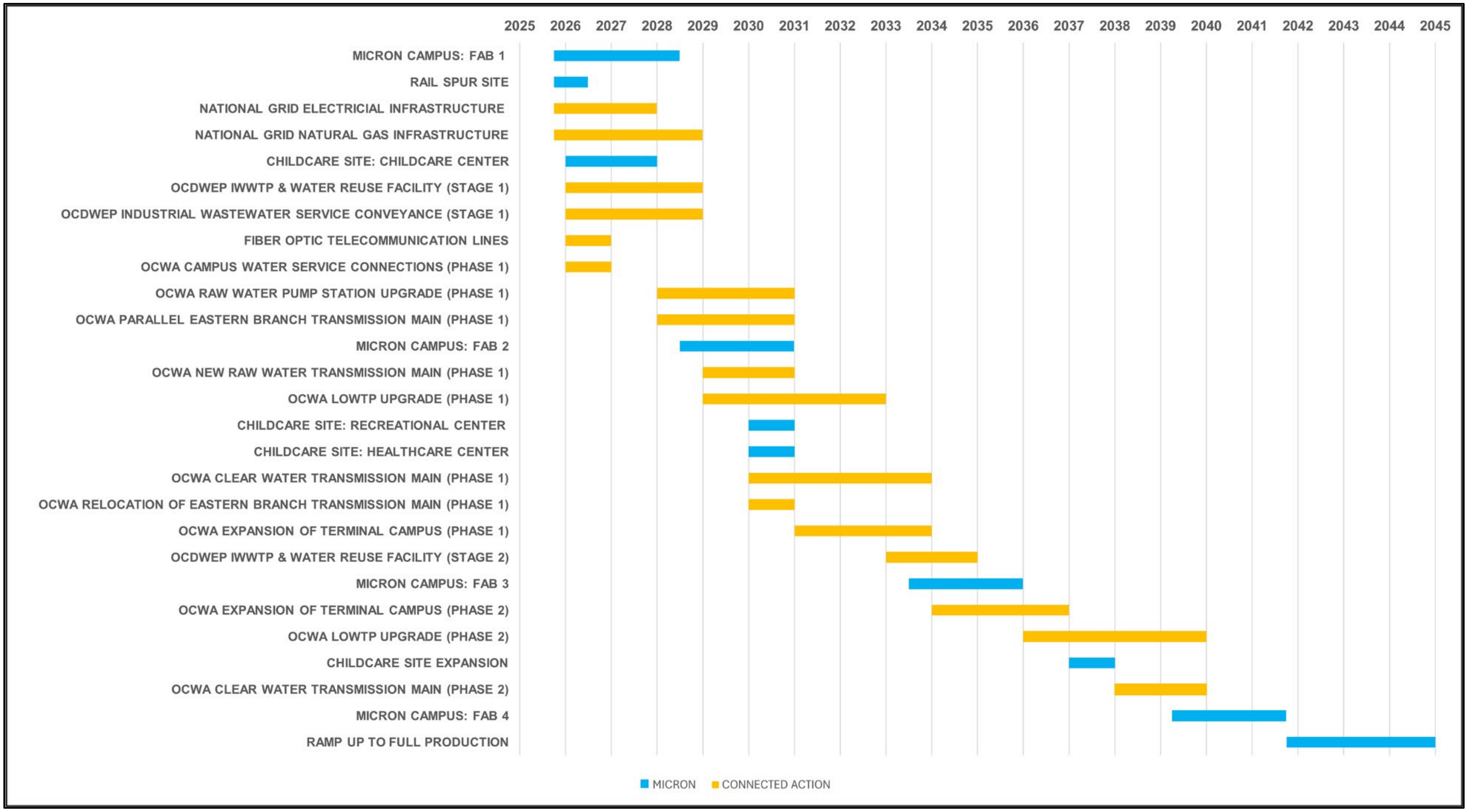
17 Disturbance areas that overlap between different project components are only counted a single time for the environmental analyses in Chapter 3.

Figure 2.1-2 Proposed Micron Campus Boundary



Source: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.

Figure 2.1-3 Proposed Project and Connected Actions Construction Timeline



Sources: Micron Technology (n.d.); National Grid (n.d.); OCWA (n.d.); and OCDWEP (n.d.).

Note: Phases 1 and 2 of the OCWA improvements and Stages 1 and 2 of the OCDWEP improvements would be timed to serve Phase 1 (Fabs 1-2) and Phase 2 (Fabs 3-4) of the Micron Campus. The Warehouse Site is not shown but Micron would anticipate leasing warehouse space for a 7-10-year term beginning in April 2026.

Table 2.1-1 Proposed Project and Connected Actions

Component	Description	Approx. Area	Timing
Proposed Project			
Micron Campus	Micron proposes to lease and ultimately purchase from OCIDA the 1,339-acre WPCP located at 5171 NYS Route 31 in Clay, NY. The WPCP, together with the approximately 28-acre South Finger (part of Town of Cicero tax parcel 091.-01-02.1), which would provide access from U.S. Route 11, and the approximately nine-acre Burnet Road ROW, would form the central component of the Micron Campus, which also would include an approximately one-acre jack and bore site (Town of Clay tax parcel 048.-01-02.1), which would be solely used for utility lines. The proposed Micron Campus (1,377 total acres) would consist of a semiconductor manufacturing facility with four DRAM production fabs, ancillary support facilities, driveways, parking, and ingress and egress roads with access from NYS Route 31, U.S. Route 11, and Caughdenoy Road and would be constructed in phases over a 16-year period. The facility would reach full production in 20 years.	1,377 acres	2025-2029 (Fab 1) 2028-2030 (Fab 2) 2033-2035 (Fab 3) 2039-2041 (Fab 4) 2041-2045 (ramp-up to full production)
Rail Spur Site	Micron proposes to construct a rail spur and conveyance facility from late 2025 to the middle of 2026 on approximately 38 acres west of 8625 Caughdenoy Road, Clay, NY (Town of Clay tax parcel 046.-02-03.2) to convey fill and other aggregate construction material to the Micron Campus.	38 acres	Q4 2025 to Q2 2026
Childcare Site	Micron proposes to construct a childcare center from 2026-2028 and a healthcare center and a recreation center from 2030-2031 on an approximately 31-acre parcel at 9100 Caughdenoy Road, Brewerton, NY (Town of Clay tax parcel 042-01-13.0). Micron would plan to construct an expansion of the childcare center within a portion of the proposed Childcare Site from 2037-2038.	31 acres	2026-2028 (Childcare) 2030-2031 (Healthcare and Recreation) 2037-2038 (Childcare Expansion)
Warehouse Site	Micron proposes to lease 360,000-500,000 sq. ft. (8.3-11.5 acres) of existing warehouse space in an industrially zoned area at a to-be-determined location within 20 miles of the Micron Campus.	8-11 acres	Lease in April 2026 (expected)

Connected Actions			
Electricity	National Grid proposes to expand the existing Clay Substation and construct new 345kV electric transmission lines and eight new underground duct banks to connect to the Micron Campus.	39 acres	Q4 2025 to Q4 2027
Natural Gas	National Grid proposes to expand an existing gas regulator station (GRS) and construct a new natural gas distribution line from the regulator station to the Micron Campus.	3.1-mile gas line	Q4 2025 to Q4 2028
Water Supply	OCWA proposes to undertake two phases of water system capacity and transmission upgrades to supply water to the Micron Campus. Phase 1 would involve upgrades to the Lake Ontario Water Treatment Plant (LOWTP), Raw Water Pump Station (RWPS), and Terminal Campus in Clay, plus construction of an approximately 2.5-mile raw water transmission main from the pump station to the LOWTP for water supply redundancy, an approximately 22-mile clear water transmission main running parallel to the existing transmission main from the LOWTP to the Terminal Campus, and an approximately 5-mile transmission main parallel to the existing Eastern Branch Transmission Main. Phase 2 would involve additional upgrades and potential transmission lines based on need.	2.5-mile raw water transmission main 22-mile clear water transmission main 5-mile eastern branch transmission main and upgrades to existing OCWA utility properties	2026-2034 (Phase 1 / to serve Fabs 1-2) 2034-2040 (Phase 2 / to serve Fabs 3-4)
Wastewater	OCDWEP proposes to undertake two stages of wastewater treatment system capacity and conveyance upgrades to serve the Micron Campus. Stage 1 would involve a bridging project at the existing OOWWTP to receive sanitary wastewater and temporarily accommodate startup industrial wastewater from the Micron Campus as OCDWEP constructs a new IWWTP and water reuse facilities on 36 acres of its existing 76-acre Oak Orchard site, plus construction of a new industrial wastewater conveyance from the Oak Orchard site to the Micron Campus. Stage 2 would expand and upgrade the IWWTP to serve additional campus industrial wastewater flows.	36 acres (existing utility property)	2026-2029 (Stage 1 / to serve Fabs 1-2) 2033-2035 (Stage 2 / to serve Fabs 3-4)
Telecomm.	Fiber optic telecommunication lines would be re-routed to serve the Micron Campus.	1-2 miles (cable extensions)	2026

Sources: Micron Technology (n.d.); National Grid (n.d.); OCWA (n.d.); OCDWEP (n.d.).

2.1.1 Micron Campus

2.1.1.1 Overview

The Micron Campus is the primary component of the Proposed Project. Micron proposes to construct a semiconductor manufacturing facility on 1,377 acres, which includes the WPCP, the Burnet Road ROW, the South Finger, and the one-acre jack and bore site for utility lines. The facility would include four fabs built in phases over an approximately 16-year period as shown in Table 2.1-2. The construction period (2025-2041) would conclude with completion of the Fab 4 buildings.

Table 2.1-2 Micron Campus Fab Construction Schedule

Phase	Fab	Construction Start	Ready for Equipment	Building Construction End	Operations Start
Phase 1A	Fab 1	Q4 2025	Q2 2028	Q2 2028	Q1 2029
Phase 1B	Fab 2	Q3 2028	Q3 2030	Q4 2030	Q4 2030
Phase 2A	Fab 3	Q3 2033	Q3 2035	Q4 2035	Q4 2035
Phase 2B	Fab 4	Q2 2039	Q2 2041	Q3 2041	Q3 2041

Source: Micron Technology. Note: Fab 4 building construction would end in Q3 2041, with final site work continuing into late 2041, internal equipment fit out continuing in 2042, and ramp up to full production by 2045.

In Table 2.1-2, “Construction Start” refers to when large scale site preparation and construction would begin; the “ready for equipment” dates are when semiconductor manufacturing equipment and tools would be installed inside the fab buildings; “Building Construction End” refers to the completion of the fab building; fab operations would then start soon after. The fabs would be built sequentially from west to east. When external construction of a fab building is completed, internal construction would continue as semiconductor manufacturing equipment and tools are installed inside. While internal construction begins on one fab, external construction of the next fab would begin. This process would result in continuous construction activity on the Micron Campus from 2025 to 2041. For schematics showing the sequential build-out of the four phases, see Appendix B-2.

For a visual rendering of the final Micron Campus, see Figure 2.1-4 on the next page. Following the rendering, Sections 2.1.1.2 through 2.1.1.5 provide additional information on Micron Campus site preparation, foundation work, and building erection; the main components of the campus; and its estimated construction and operational labor force requirements.

For a more detailed description of the site preparation process, see Section 3.2 (Geology, Soils, and Topography). For more detailed information on the anticipated effects of site preparation and construction work for the Micron Campus relating to transportation, traffic, noise, and other aspects of the surrounding local community, see Sections 3.11 (Transportation and Traffic), 3.12 (Noise and Vibration), 3.13 (Visual Effects and Community Character), and 3.14 (Community Facilities, Open Space, and Recreation).

Figure 2.1-4 Micron Campus Visual Rendering

Source: Micron Technology (n.d.).

2.1.1.2 Site Preparation

Preparing the proposed Micron Campus for construction would require approximately 997 acres of ground disturbance, including 445 acres of tree clearing and grubbing. Site preparation activities for Fab 1 at the western limits of the WPCP would start first and would include tree clearing, grubbing, soil excavation and removal, import of fill material, installation of erosion and sediment control, and grading. When tree clearing and site preparation occurs sequentially, the process below would occur over a continuous period of time. However, there will be periods when tree clearing and limited site preparation will occur followed by a pause before more intensive site preparation (see Fab 3 and 4).

In general, site preparation also would incorporate the following activities:

- Mobilizing contractors to commence the work within the site boundary and prepare contractor areas for future activity.
- Identifying the limits of tree clearing and flagging and staking all buffer areas, sensitive areas, and wetlands prior to the start of construction.
- Installing temporary erosion and sediment controls, stormwater management areas, and stormwater infrastructure.
- Establishing site access points and installing perimeter fencing for security.
- Setting up infrastructure at the site, including contractor offices, laydown areas, precast yards, and personnel parking.
- Constructing haul roads into and out of the site and setting up traffic arrangements.
- Performing site clearing and landscape grubbing work.
- Installing cut-and-fill earthworks to create the necessary level platform areas before foundation work commences.

In general, site preparation and construction activity for the Micron Campus would take place seven days a week between the hours of 6 a.m. and 10 p.m.[18] For more detailed information on construction dates, times, and restrictions, see Section 3.12 (Noise and Vibration).

2.1.1.3 Foundation Work

Foundation work, also described in further detail in Section 3.2 (Geology, Soils, and Topography), would require installation of drilled piers into bedrock followed by concrete work to pour and form slabs or "pads" for the fab buildings. At this stage, Micron also would perform any necessary dewatering work and install underground utility lines. After completing foundations

[18] Applicable Town of Clay requirements currently do not authorize construction activities during these extended times. Micron is in discussions with the Town of Clay to either modify or obtain a variance from the applicable requirements to facilitate timely construction of the Proposed Project as presented in this EIS and will comply with all applicable noise ordinances. See Section 3.12 (Noise and Vibration) for more information.

and any necessary fill and grading, Micron would place topsoil and seed disturbed areas for regrowth.

2.1.1.4 Building Erection

At the fab building erection stage, Micron would install pre-cast concrete superstructures (either produced on or off-site) and install enclosures beginning from the lower floors and continuing up to the top of the buildings. Interior partitions and dividing walls would be framed concurrently with building enclosure installation. Following the enclosure of each floor, mechanical, electrical, plumbing, and process system rough-ins would be installed. Finally, Micron would complete interior work, including interior finishes, painting, cabinetry, and installation of plumbing fixtures and appliances.

Final sitework would include completing the building rooftops and installing surrounding landscapes, as well as paving work, site lighting work, and remaining landscaping activity.

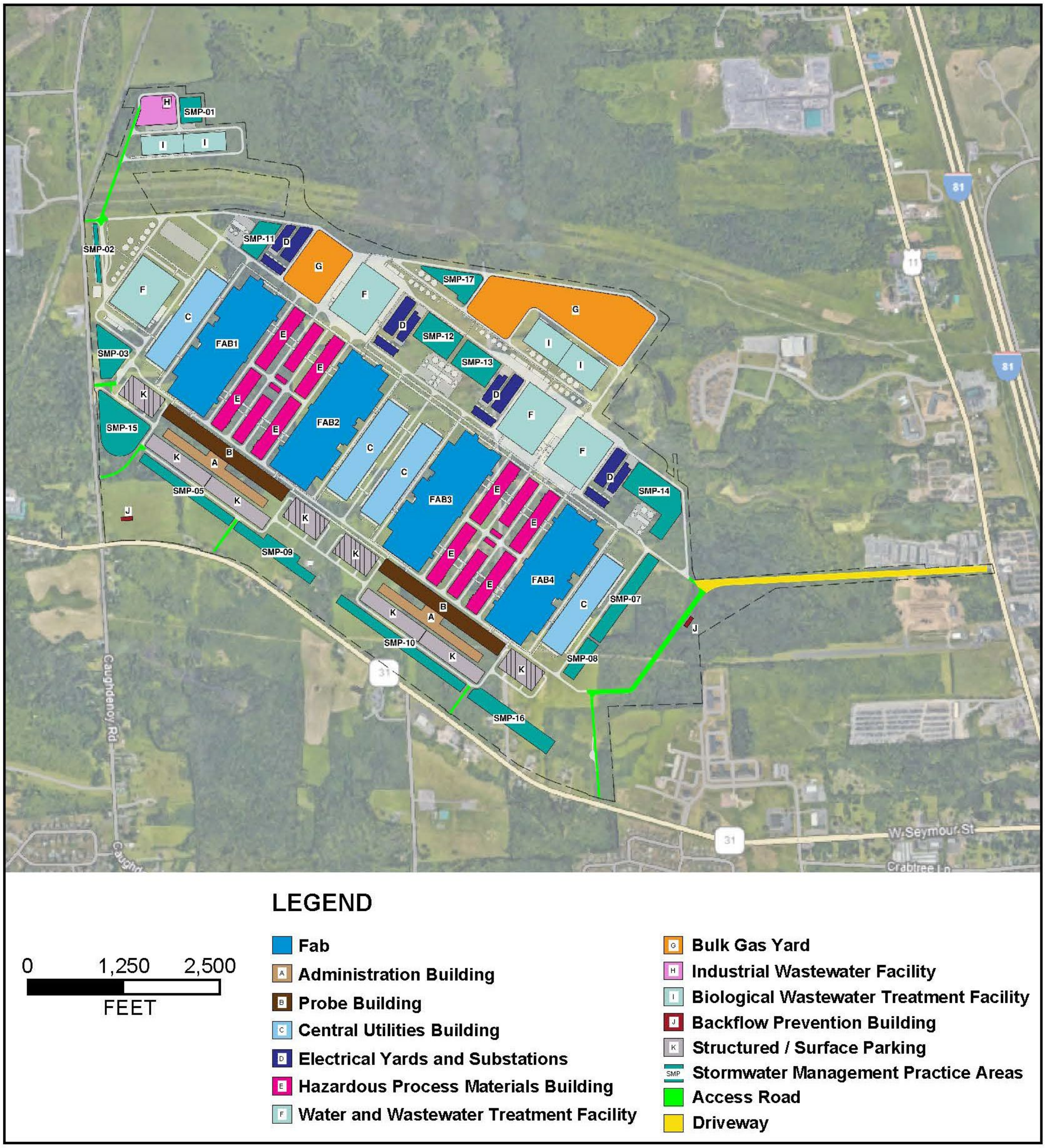
At full build-out in 2041, the Micron Campus would include 645 acres of new impervious surface, 58 acres of semi-pervious area, and 278 acres of green space within the 997-acre construction disturbance footprint.

For each fab, the foundation work, erection of building shells, and other exterior construction would span roughly a 1-year period. A significant portion of the construction activities during the 16-year construction period would occur inside the fab building shells and, with the exception of equipment deliveries, would not be visible or exposed to surrounding residents or the general public.

2.1.1.5 Components

Figure 2.1-5 below provides a site plan of the Micron Campus. Following the site plan, Table 2.1-3 provides descriptions of the main components of the campus.

Figure 2.1-5 Micron Campus Site Plan



Source: Micron Technology (n.d.).

Table 2.1-3 Micron Campus Components

Component	Plan Marker	Area	Description
Fabrication Buildings (4)	FAB	4.8 million sq. ft.	Micron proposes to construct four fabs, each with an identical footprint of approximately 27.5 acres or 1.2 million sq. ft. (600,000 sq. ft. of cleanroom space and 600,000 sq. ft. for the supporting building infrastructure and utilities needed to operate the fab), for a total footprint for all four fabs of 4.8 million sq. ft. at full build-out in 2041. By constructing the fabs sequentially in phases, Micron would be able to begin chip manufacturing at the Micron Campus as soon as Fab 1 becomes operational. The four fabs would be constructed in close proximity to each other with the same layout, orientation, and finished floor elevation, and would be successively connected as they are constructed to form the "spine" of the manufacturing facility, to maximize efficiencies and flows across the fabs and the production efficiency of the facility as a whole. Each fab would have a typical height of approximately 148 ft., with the tallest small individual roof penthouses reaching a height of 160 ft. Operations at each fab would include raw material receiving, memory chip manufacturing, and final product storage and shipping. Manufacturing operations would commence upon completion of construction and equipment installation and testing.
Administration Buildings (4)	A	478,000 sq. ft.	Four administration buildings to the south of the probe buildings (see below), each approximately 105 ft. tall with a 119,500 sq. ft. footprint, would provide office space supporting the estimated 2,000 manufacturing employees at each fab.
Probe Buildings (4)	B	730,400 sq. ft.	Four probe buildings to conduct electrical testing on manufactured chips before they are shipped would each have an approximately 182,600 sq. ft. (4.2 acre) footprint and approximately 85,000 sq. ft. of cleanroom space on the upper floor (for a total 340,000 sq. ft. of cleanroom space). These buildings also include a small number of emergency generators.
Central Utilities Buildings (4)	C	1.8 million sq. ft.	Four central utility buildings (CUBs), one dedicated to each fab, would house the systems required to deliver the utilities necessary to produce the chips, including HVAC, electrical transmission equipment, water purification and recycling, and chemical/specialty gas delivery systems. Each CUB would be 73 ft. tall with a 441,210 sq. ft. (10.1 acre) footprint consisting of multiple individual utility plant modules to house the heating, cooling, compressed air, electrical equipment, and emergency generators (approximately 60 per CUB) serving the surrounding buildings associated with each fab. A small number of emergency generators would also be located outside the CUB at other locations on campus, including emergency fire pump engines.

Electrical Yards and Substations (4)	D	700,000 sq. ft.	Four electrical yards and substations, one for each fab, each with a 175,000 sq. ft. (4-acre) footprint, would be constructed on the north sides of the fabs, and would supply the electrical needs for full fab operations.
Hazardous Process Materials Buildings (8)	E	2.1 million sq ft.	Eight hazardous process materials buildings, each with a 525,000 sq. ft. (12 acre) footprint, would store and dispense specialized chemicals and gases for manufacturing and would be arranged as four groupings of two buildings each, with identical footprints and configurations, located between Fabs 1 and 2 and Fabs 3 and 4.
Water and Wastewater Treatment (WWT) Facilities (6)	F	2.46 million sq. ft.	Six WWT facilities would be constructed in four identified WWT locations, each with a 615,000 sq. ft. (14.1 acre) footprint, one for each fab and biological treatment (BIO) facility (see below), and would ensure that incoming water meets Micron's high-purity specifications for manufacturing, provide treatment for on-site reuse, and ensure that outgoing wastewater meets quality requirements for treatment at the wastewater treatment and renewal facility.
Bulk Gas Yards (4)	G	1.88 million sq. ft.	Four bulk gas yards, each with an approximately 455,000 sq. ft. (10.5 acre) footprint, 170 ft. tall columns, and cold box units, would be constructed north of the fab buildings. The gas yards would be used to isolate oxygen, argon, and nitrogen from the ambient air for use in the fabrication process, which is more efficient than trucking in gases.
Industrial Pretreatment Wastewater Facility (1)	H	216,554 sq. ft.	An on-site industrial wastewater facility and pump station would provide an alternative collection area for incoming treated and reclaimed water from the OCDWEP IWWTP that does not meet specifications or if outgoing water chemistry or volume exceeds Micron's standards for delivery to the IWWTP.
Biological Wastewater Treatment Facility (4)	I	731,808 sq. ft.	Four BIO facilities, each with a 182,952 sq. ft. (4.2 acre) footprint, would remove dissolved organic contaminants and nutrients from wastewater prior to sending the wastewater to the IWWTP.
Backflow Prevention Building (2)	J	15,000 sq. ft.	Two 7,500 sq. ft. backflow prevention buildings would ensure that site water could not flow back into the OCWA water mains. One would be located at the southwest corner where the water mains enter the site near the intersection of NYS Route 31 and Caughdenoy Road, supporting Fabs 1 and 2, and the second would be located on the southeast corner to support Fabs 3 and 4.

Surface Parking (4), Structured Parking (4), and Access Roads (7)	K	1.36 million sq. ft.	11,600 parking spaces,[19] four bus stops, and seven access roads would be constructed on the campus, including four 500-space surface parking lots south of the administration and probe buildings and four 2,400-space structured parking areas (indicated with a diagonal hatch on Figure 2.1-5), totaling 8.19 million sq. ft. (188 acres) of new impervious area associated with paved surface parking and site access roadways. Three of the access roads would enter the campus from Caughdenoy Road near the Rail Spur Site, three from NYS Route 31, and one from U.S. Route 11 on the east side of the campus, traversing land area within the Town of Cicero. As the construction phases progress from west to east and fab operations begin, the use of the access roads would shift from construction to permanent employee access. Micron would implement site traffic plans to ensure safety during construction phases of the campus build-out.
Rooftop Solar Energy	N/A	N/A	Micron would install approximately 4 megawatt (MW) of solar panels on the roofs of the parking garages, WWT buildings, and BIO buildings.
Stormwater Management Practice Areas (15)	SMP (#)	2.9 million sq. ft.	Stormwater management practice (SMP) areas would be constructed throughout the campus to detain and treat stormwater runoff from its approximately 645 acres of newly created impervious surfaces. SMPs would include wet extended detention ponds (SMPs 01, 03, 11, 12, 13, 14, 15, and 17 in Figure 2.1-5) and filtration bioretention (SMPs 02, 05, 07, 08, 09, 10, and 16).[20] The SMPs would be built in phases along with the campus construction phases and would be sized according to hydrologic and hydraulic modeling conducted for the site.

Source: Micron Technology (n.d.).

[19] The number of parking spaces would accommodate an anticipated workforce of approximately 9,005 employees, contractors, and temporary workers, along with snow storage, events, and visitor needs. For additional information on the Micron Campus parking space needs, see Appendix B-4.

[20] SMP 04 and SMP 06 were never assigned and are therefore intentionally omitted from Figure 2.1-5.

2.1.1.6 Labor Force

As shown in Figure 2.1-6 on the next page, construction of the Micron Campus would require approximately 4,200 construction workers on-site daily during peak construction periods lasting roughly six months for each fab, with the actual number of construction workers on-site fluctuating depending on the type of work being conducted.

Micron Campus operations would require at least 2,000 manufacturing employees for each fab, with the total number of manufacturing employees increasing sequentially as each fab comes online. Once Fab 1 becomes operational in 2029, there would be five manufacturing employee shifts, one working Monday through Friday from 8 a.m. to 5 p.m. and four shifts working overlapping 11.5-hour shifts to support the continuous 24-hour, seven day per week manufacturing operation. Fabs 2 through 4 would use the same shifts as they come online.

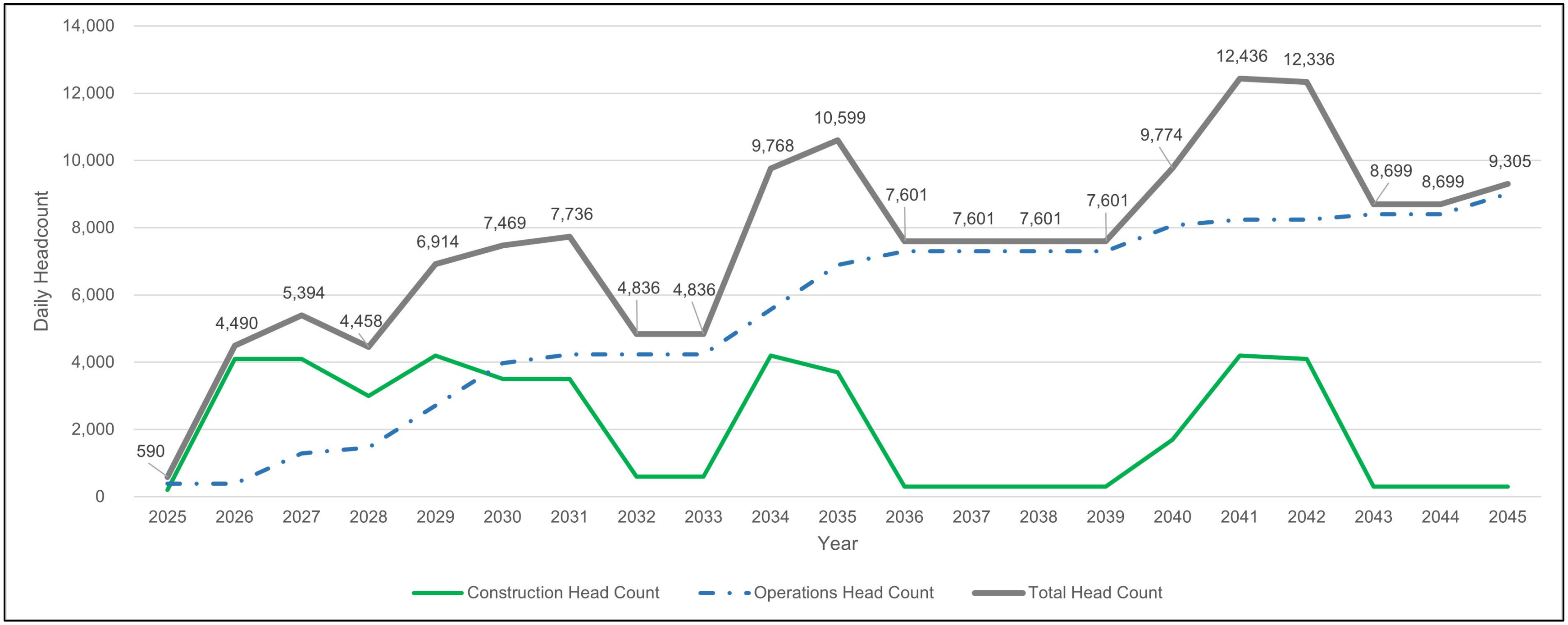
Information on the local labor market suggests that approximately 2,000 local workers may be available for each phase of the Micron Campus construction, which could help reduce the number of construction crews traveling to Clay, NY from other geographical locations. For additional information on construction employee considerations, see Section 3.15 (Socioeconomic Conditions) and Appendix Q.

Construction workers and manufacturing employees engaged in building the successive phases of the four-fab campus would be co-located at the campus until full build-out in 2041. Overall, the number of workers on-site would continually increase until construction and internal outfitting of Fab 4 is complete, at which point the on-site construction workforce would be reduced to a continuous nominal presence required for implementation of each new memory chip production technology node.

The headcount on the Micron Campus would peak in 2041 (12,436 employees and workers) as construction of Fab 4 is completed. During 2042, when Fab 4 would be outfitted internally for full production, the headcount would remain elevated. From 2043 to 2045, as the campus ramps up to full production, the operational workforce would increase while the construction workforce would decrease.

At full production in 2045, the operational headcount of the Micron Campus, including manufacturing, business, and administrative employees, would be 9,005 employees, with a nominal remaining presence of approximately 300 construction workers.

Figure 2.1-6 Proposed Project On-Site Construction, Operation, and Total Headcount (2025-2045)



Source: Micron Technology (n.d.). Note: Although Fab 4 construction would end in Q3 2041, Fabs 3 and 4 would not ramp up to full production until 2045.

2.1.2 Rail Spur Site

2.1.2.1 Overview

The Rail Spur Site is a component of the Proposed Project. Micron proposes to construct a rail spur and construction material conveyance facility on approximately 38 acres west of 8625 Caughdenoy Road, Clay, NY to economically transport fill and other aggregate construction material to the Micron Campus by rail.

Due to existing soil conditions at the WPCP that would be unsuitable for large building construction, as part of the construction process for the Micron Campus, Micron would need to excavate and remove 1.5 million cubic yards (CY) of soil from the WPCP and import 9 million CY of fill or other aggregate construction material to the site in order to provide sufficient clean and stable soils on which to construct the Micron Campus facility foundations. For a detailed explanation of this process, see Section 3.2 (Geology, Soils, and Topography).

Micron therefore proposes to build the Rail Spur Site as part of the Proposed Project to facilitate a more efficient construction timeline, minimize the need to rely on transportation of construction material by truck over the Proposed Project's 16-year construction period, and avoid or minimize the environmental effects such truck transportation would cause, particularly effects relating to increased transportation emissions, noise, and traffic congestion.

For the proposed Rail Spur Site location, Micron has purchased two contiguous parcels of land adjacent to the western side of the WPCP between the CSX Railroad line and Caughdenoy Road (Town of Clay tax parcels 046.-02-03.2 and 046.-01-19.1).

2.1.2.2 Construction

Construction of the proposed Rail Spur Site would start in Q4 2025 and take approximately seven months, concluding in Q2 2026 with operations also starting in Q2 2026. Construction would require approximately 22 acres of tree clearing, approximately 24 acres of ground disturbance, the excavation and removal of 85,000 CY of soil, the import of 150,000 CY of fill, the laying of 4.3 acres of impervious surface, and the construction of approximately 7,300 sq. ft. of new building space. Micron would re-use excavated soil and fill material in construction of the site, and transport unusable or excess material for off-site reuse, to the greatest extent practicable, subject to relevant approvals and disposal site capacity.

All construction staging and activity would be contained within the Rail Spur Site property boundaries except for those elements of the conveyance system that would extend east across Caughdenoy Road onto the Micron Campus. Site clearing and associated construction activities would not commence until Micron has obtained all applicable permits and approvals. Construction activities on the Rail Spur Site would be limited to between 6 a.m. to 10 p.m. daily.[21]

[21] Applicable Town of Clay requirements currently do not authorize construction activities during these extended times. Micron is in discussions with the Town of Clay to either modify or obtain a variance from the applicable requirements to facilitate timely construction of the Proposed Project as presented in this EIS and will comply with all applicable noise ordinances. See Section 3.12 (Noise and Vibration) for more information.

2.1.2.3 Operation

The Rail Spur Site would be operated by an independent contractor pursuant to an agreement with Micron. Construction material for the Micron Campus would be sourced off-site and arrive at the Rail Spur Site by rail car on the CSX Railroad line. Rail cars would be anticipated to transport up to 1,500 short tons per hour of aggregate materials to the site for off-loading of material from the rail cars onto an aggregate conveyance system comprised of belt conveyors designed to move material up and over Caughdenoy Road onto the Micron Campus.

Each day, one set of 60 rail cars would be off-loaded at the Rail Spur Site, while another set of 60 rail cars returns to the aggregate supply sources, and a third set of 60 rail cars is in transport from the sources to the Rail Spur Site. This rotating activity would occur until aggregate material is no longer required for a particular construction phase.

The Rail Spur Site would operate daily from 6 a.m. to 10 p.m. for receiving arriving and departing rail cars, and off-loading aggregate material from the rail cars onto the conveyor system. Off-loading would continue until aggregate is no longer required for a particular construction phase. The independent contractor would operate two rail off-loaders in rotation to off-load a set of 60 rail cars in a 16-hour period each day, during the 6 a.m. to 10 p.m. daily window.

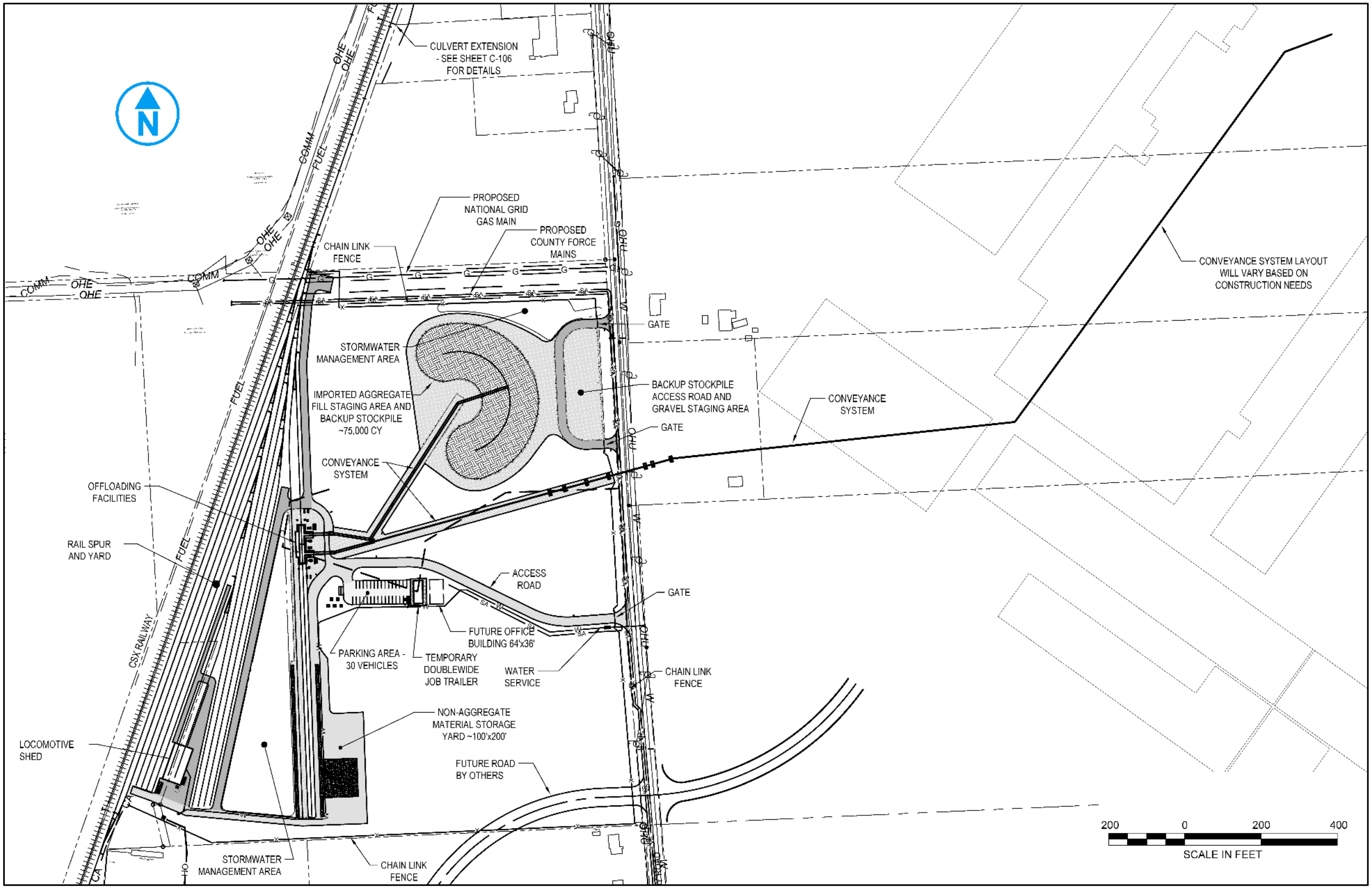
The rail spur and conveyance system would remain active during each of the four fab construction phases (i.e., from Q4 2025 to Q2 2028, Q3 2028 to Q4 2030, Q3 2033 to Q4 2035, and Q2 2039 to Q3 2041). As construction of each phase of the Micron Campus transitions from the site preparation and foundation stage to the structural stage, mobile elements of the aggregate conveyance system would either be removed or would remain in place unused, until construction of the next phase of the Micron Campus commences.

During the structural stage of construction for each fab, the rail spur would continue to be used to bring off-site manufactured construction materials to the Micron Campus, such as pre-cast concrete and facades. These materials would be trucked a short distance from the Rail Spur Site to the Micron Campus and the Childcare Site. Once a fab becomes operational, the rail spur may also be used to bring in equipment and non-hazardous materials required for semiconductor manufacturing. The Rail Spur Site would not be used to transport any hazardous materials for use in Micron Campus operations.

2.1.2.4 Components

The Rail Spur Site would include the following components: rail siding, rail yards, and an off-loading track and facility; the aggregate materials conveyance system; an office building and trailer; a locomotive shed; paved access roads and a parking area; paved storage areas; a backup stockpile area; a stormwater management area; and lighting. Figure 2.1-7 on the next page provides a site plan, and Table 2.1-4 provides additional detail on the components.

Figure 2.1-7 Rail Spur and Aggregate Materials Conveyance System Plan



Source: Ramboll Americas Engineering Solutions, Inc. (Ramboll; 2025a)

Table 2.1-4 Rail Spur Site Components

Component	Description
Rail Siding, Rail Yards, and Off-loading Track and Facility	A rail siding track would be located east of and parallel to the CSX Railway mainline with a 70-rail car storage capacity, two railyards (A and B) with a combined storage capacity for 165 additional rail cars, and an off-loading track and facility with storage capacity for 15 additional rail cars. The Rail Spur Site would require this total 250-rail car storage capacity to facilitate the required daily off-loading rate for the Micron Campus construction schedule. Two rail off-loaders would run in series capable of off-loading construction material from 60 rail cars in a 16-hour period each day, from 6 a.m. to 10 p.m. Each day, one set of 60 rail cars would be off-loaded at the Rail Spur Site, while another set of 60 rail cars returns to the aggregate supply sources, and a third set of 60 rail cars is in transport from the sources to the Rail Spur Site. Rail transport and receiving activity at the Rail Spur Site would be limited to 6 a.m. to 10 p.m. daily. This rotating activity would occur until aggregate is no longer required for a particular construction phase.
Aggregate Materials Conveyance System	An aggregate materials conveyance system would be constructed on-site capable of transporting up to 1,500 short tons per hour of aggregate materials from the Rail Spur Site over Caughdenoy Road onto the Micron Campus. The two-pronged system would be comprised of 23 belt conveyors, the majority of which would be modular and could be re-positioned as necessary. The central component of the system would be a 42-inch wide, 825-foot-long stationary conveyor with side guards to convey materials up and over Caughdenoy Road with an 18-foot clearance. The conveyor would be used solely for the construction phases on the Micron Campus. The conveyor would require concrete foundations for the head and tail sections supporting the 100-foot-long clear-span section crossing over the roadway. The modular conveyor segments on the land on either side of Caughdenoy Road would be built on 12 inches of crushed stone on top of geogrid. The central stationary conveyor would feed a telescoping radial conveyor that would discharge aggregate materials onto the Micron Campus. A smaller conveyance system would serve the backup stockpile area (described below). All conveyors would meet mine duty specifications. To reduce noise, rubber disk return rollers and urethane or rubber liners would be used in high impact areas. To reduce dust at transfer points, head chutes would be installed, and coverings would be used at loading zones and over Caughdenoy Road.
Office Building and Trailer	A detached temporary double-wide trailer would be located on-site to oversee operations while a permanent 2,300 sq. ft. office building is constructed. The trailer would be removed after construction of the office building is complete.
Locomotive Shed	A 5,000 sq. ft. locomotive shed would be located at the southern end of the rail yard. The shed would be used for maintenance of the rail cars as necessary. The shed would not include any sewer drains; all fluids generated on-site would be captured in a sump and hauled off-site when disposal becomes necessary.

Paved Access Roads and Parking Areas	An access driveway would extend west from Caughdenoy Road to the office building and a 30-space surface parking lot. Internal access roads would run from along the eastern edge of the rail yard and off-loading track to the locomotive shed.
Paved Storage Area	A 20,000 sq. ft. non-aggregate materials storage area would be located immediately east of the locomotive shed. This area would be used to temporarily store prefabricated concrete components that would be delivered by rail before being transported to their final installation locations. The size of the area was determined based on the estimated number and size of precast pieces needed per day.
Backup Stockpile Area	A 75,000-CY stockpile area allowing for rail car off-loading activities would be maintained in the event of an unexpected equipment failure with the main conveyance system. Aggregate material would be loaded onto the backup stockpile access road and gravel staging area along the northeast portion of the Rail Spur Site boundary, then trucked a short distance across Caughdenoy Road to the Micron Campus until main conveyance system operations are re-established.
Stormwater Management Area	Micron would provide stormwater management on the Rail Spur Site. Site plans currently propose stormwater management facilities, including two stormwater management areas, which would be designed in accordance with the sizing criteria outlined in the 2024 NYS Stormwater Design Manual. Approval and sizing of these areas is subject to NYSDEC and Town of Clay review.

Source: Micron Technology (n.d.).

2.1.3 Childcare Site

2.1.3.1 Overview

The Childcare Site is a component of the Proposed Project. Micron proposes to construct a childcare center, healthcare center, and recreation center, along with associated workforce amenities and site infrastructure, on an approximately 31-acre parcel three quarters of a mile northwest of the proposed Micron Campus, at 9100 Caughdenoy Road, Brewerton, NY (Town of Clay tax parcel 042-01-13.0). The Childcare Site would serve the childcare, healthcare, and recreational needs of the anticipated 9,300-member labor force that would commute to and from the Micron Campus at its full operational capacity in 2045.

2.1.3.2 Construction

Construction of the childcare center would start in early Q3 2026 and conclude in 2028, before Fab 1 operations would begin in Q1 2029. Construction of the healthcare and recreation centers would occur later, from Q2 2030 to Q2 2031, and would plan to open in Q2 2031 when the employee base at the Micron Campus would grow large enough to support the need for those facilities. All construction staging and activity would be contained within the Childcare Site property boundaries. Site clearing and associated construction activities would not commence until Micron has obtained all applicable permits and approvals.

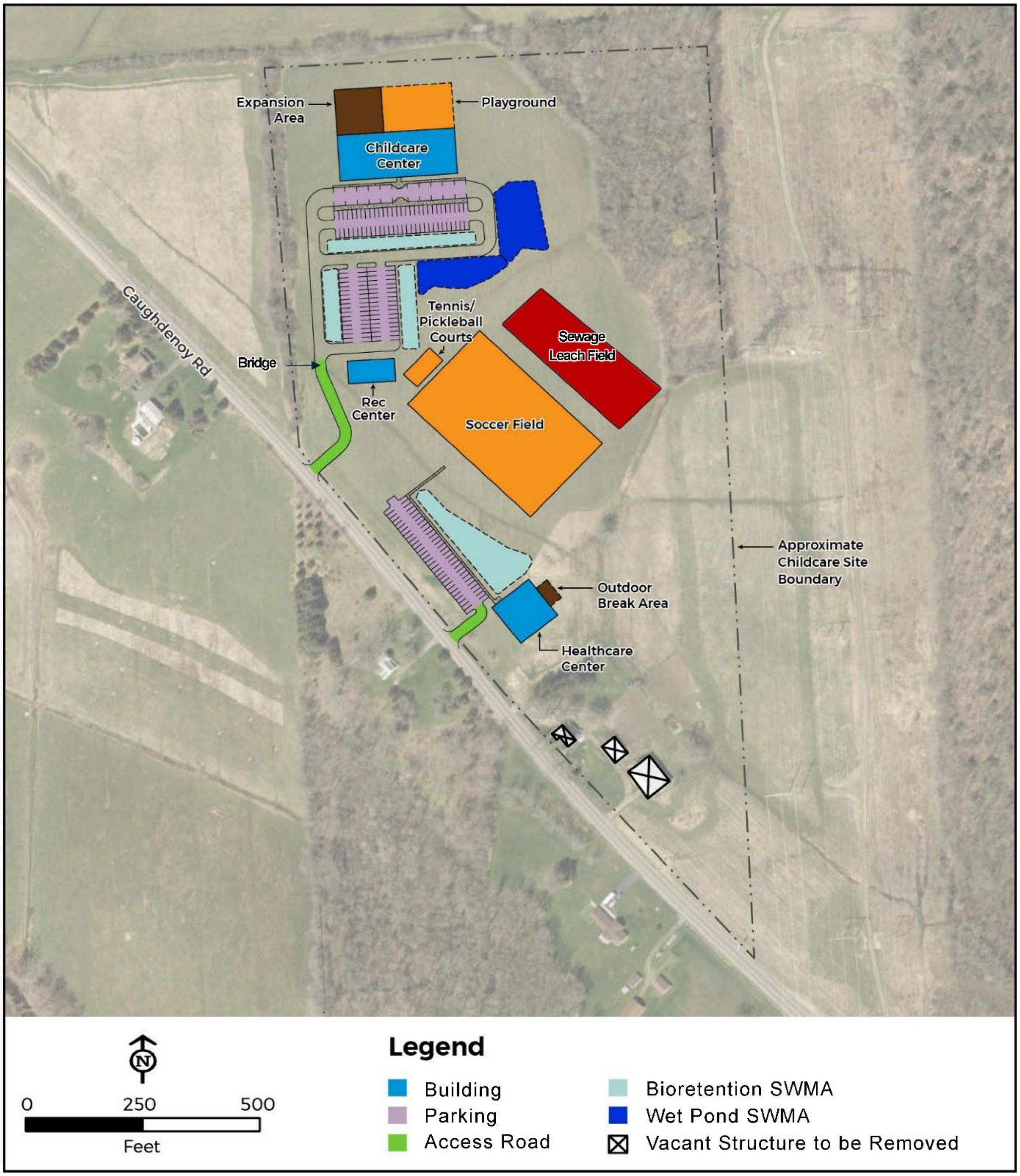
Construction of the Childcare Site would occur on predominantly vacant land but would require the removal a vacant former residence and associated barn foundation at the site's southernmost boundary once all relevant approvals are obtained, followed by construction over time as noted above of the childcare, healthcare, and recreation centers, as well as an athletic field, a sewage disposal system, and 208 surface parking spaces.

Site development would require a total area of disturbance of 13 acres with no tree clearing, excavation and removal of 50,000 CY of soil and import of 25,000 CY of fill, and construction of 2.6 acres of impervious surface, which would include 40,000 sq. ft. (0.9 acres) of new buildings and parking spaces. To comply with Town of Clay zoning regulations, all proposed structures would be less than 50 feet in height and all required setbacks would be met. Each building would be equipped with its own septic tank and pump station, with sanitary wastewater directed via piping to a sewage disposal system and leaching field.

2.1.3.3 Components

In addition to the childcare, healthcare, and recreation centers, the Childcare Site would include a soccer field, a tennis/pickleball court, the sewage disposal system and leaching field, stormwater management areas, a pedestrian walkway and bridge, and lighting. Figure 2.1-8 on the next page provides a site plan, and Table 2.1-5 following the figure provides additional detail on the site components.

Figure 2.1-8 Childcare Site



Source: Ramboll Americas Engineering Solutions, Inc (Ramboll, 2025b).

Table 2.1-5 Childcare Site Components

Component	Description
Childcare Center	The childcare center would include a 25,000 sq. ft. (0.6 acre) structure and a 64,120 sq. ft. (1.5 acre) parking lot, entrance drive and bridge spanning a linear wetland,[22] and sidewalk, with 80 paved parking spaces (60 long-term parking spaces and 20 drop-off / pick-up spaces) and an access drive shared with the recreation center, entering from Caughdenoy Road.[23]
Healthcare Center	The healthcare center would include a 10,000 sq. ft. (0.2 acre) structure and a 21,630 sq. ft. parking lot, entrance drive, and sidewalk, with 60 paved parking spaces and a dedicated access drive from Caughdenoy Road.
Recreation Center	The recreation center would include a 5,000 sq. ft. (0.1 acre) structure and a 23,660 sq. ft. parking lot, entrance drive, and sidewalk, with 68 paved parking spaces and would share the childcare center's access drive.
Playground	A 15,000 sq. ft. playground would be located behind the childcare center.
Soccer Field	An 86,400 sq. ft. (2 acre) soccer field would be located north of the recreation center.
Tennis / Pickleball Court	A 3,200 sq. ft. tennis / pickleball court would be located north of the recreation center.
Sewage Leach Field	A 41,100 sq. ft. (0.9 acre) sewage disposal system (a leach field) would be located at the rear of the parcel north of the soccer field.
Stormwater Management Areas	Based on sizing criteria contained in the 2024 NYS Stormwater Design manual, site plans currently propose approximately 55,380 sq. ft. (1.3 acres) of stormwater management facilities, including four bioretention areas and a wet pond, but approval and sizing of these areas is subject to NYSDEC and Town of Clay review.
Pedestrian Walkway and Bridge	A 500-sq. ft. access walkway would extend from the healthcare center and associated parking spaces to the recreational fields and would include a bridge spanning a linear wetland.
Lighting	For safety, exterior illumination would include 70 lights, including 27-foot-tall, downward directional warm white LED lights along internal roads, parking areas, and around buildings, and 80-foot-tall stadium-style cool white LED lights bordering the soccer field and tennis courts.
Future Expansion Area	Approximately 10,000 sq. ft. of undeveloped land in the rear yard of the childcare center adjacent to the playground would be set aside for potential future expansion needs.

Source: Micron Technology (n.d.).

[22] The bridge would be designed and constructed in accordance with NYSDEC specifications to avoid impacts to wetlands.

[23] The childcare center would require removal of a small amount of non-jurisdictional wetlands.

2.1.4 Warehouse Site

The Warehouse Site is a component of the Proposed Project. Micron proposes to lease 360,000-560,000 sq. ft. (8 to 11 acres) of existing off-site warehouse space in an industrially zoned area at a to-be-determined location within 20 miles of the Micron Campus. Micron would directly lease the warehouse space or would subcontract with a third-party logistics company to lease the space and manage warehousing operations. The warehouse space would have a minimum interior clearance height of 32 feet to support optimal vertical stacking for storage. The purpose of the Warehouse Site would be to store manufacturing equipment and materials, including spare equipment such as robots, hardware consumables, electronics parts, and components related to Extreme Ultraviolet Lithography (EUV) and other process tools. Materials stored may include Chemical Mechanical Planarization (CMP) pads and raw silicon wafers. No hazardous materials would be stored within the warehouse space. Micron anticipates leasing the warehouse space for a 7-10-year term beginning in April 2026.

2.1.5 Electricity

Certain electrical infrastructure improvements are Connected Actions. National Grid is a natural gas and electric transmission and distribution company that provides service to Clay, NY. National Grid owns the Clay Substation located to the northwest of the WPCP across the CSX Railroad line and the electric transmission line and ROW that runs to the north of the WPCP. To supply the estimated electricity needs of the Micron Campus, National Grid proposes to undertake phased construction based on interconnection approval from NYISO. The electricity improvements that would be required for the proposed Micron Campus are subject to approval under a separate, ongoing regulatory proceeding before the NYSPSC relating to the 345kV electric transmission lines.[24]

For Fab 1, National Grid proposes to expand the existing footprint of the Clay Substation toward the north and east by approximately 10 acres. For a more detailed analysis of the Micron Campus electricity demands, see Section 3.10 (Utilities and Supporting Infrastructure). This expansion would enable the installation of four new 345kV electric transmission lines that would run from the Clay Substation through eight new underground duct banks to four new 345kV substations on the Micron Campus (one for each fab). Each of the eight duct banks would accommodate one 345kV transmission circuit. The duct banks would be buried a minimum of six feet deep within a permanent 110-foot-wide ROW and would extend one mile in length on average, depending on the fab. The Clay Substation expansion and construction of the 345kV lines, duct banks, and substations would require approximately 76 acres of ground disturbance.[25] These improvements are shown in Figure 2.1-9. Construction of the proposed Clay Substation expansion and electricity improvements would start in Q3 2027 and conclude in Q3 2032.

Since the publication of the Draft EIS, NYISO has finalized the completion of the interconnection study for Fab 2 and has identified the need for an additional

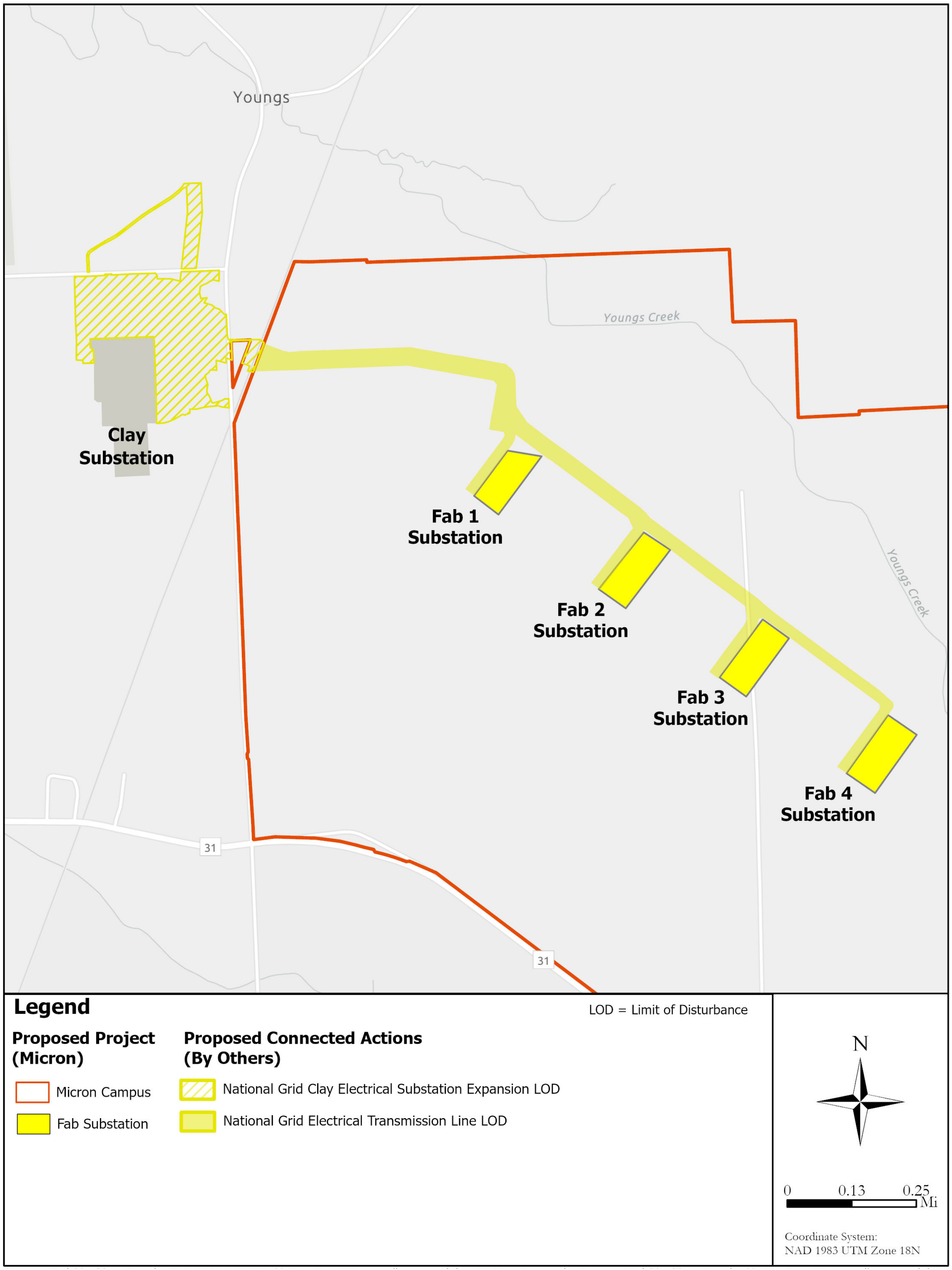
[24] This Connected Action is a Type 2 action under SEQRA as it is being reviewed by the NYSPSC pursuant to Article VII of the Public Service Law (NYSPSC Dkt 24-T-0120).

[25] A portion of the 76-acre LOD overlaps with the Micron Campus LOD. See Figure 2.1-9.

substation/switchyard.[26] Pursuant to this determination, National Grid has tentatively identified a general location in Lysander, New York, for the new substation/switchyard needed to support Fab 2. A specific location has yet to be identified. Under New York law, Micron similarly would be required to apply for interconnection approval from the NYISO for Fabs 3 and 4. National Grid would be responsible for securing the necessary regulatory approvals, construction and operation of any additional electrical infrastructure upgrades determined to be needed by NYISO. In the absence of any specificity with regard to the future substation's specific location, design or potential environmental impacts, a detailed analysis of the effects of the future substation—over which the lead agencies would exercise no permitting authority or funding control—is not carried through this EIS as it would be purely speculative.

[26] Because the reasonably foreseeable environmental impacts of this electrical infrastructure upgrade are unknown, and there are currently no known federal approvals required, it is not currently clear if it is a Connected Action under NEPA. It would, however, be exempt from SEQRA. 6 N.Y.C.R.R. § 617.5(c)(44).

Figure 2.1-9 Electricity Improvements



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Micron Technology (n.d.).

2.1.6 Natural Gas

Natural gas infrastructure improvements are part of the Connected Actions. To supply the estimated natural gas demands of the Micron Campus (174,528 thousand cubic feet (MCF) a month per fab, or 698,112 MCF per month by full build-out in 2041), National Grid proposes to construct an approximately 3.1-mile long, 16-inch diameter below-grade (underground) natural gas distribution line from its existing GRS 147 at 4459 NYS Route 31 (tax parcel 029.-01-13.1) to the Micron Campus and to construct a new GRS 147A at the same address. For a more detailed analysis of the Micron Campus natural gas demands, see Section 3.10 (Utilities and Supporting Infrastructure).

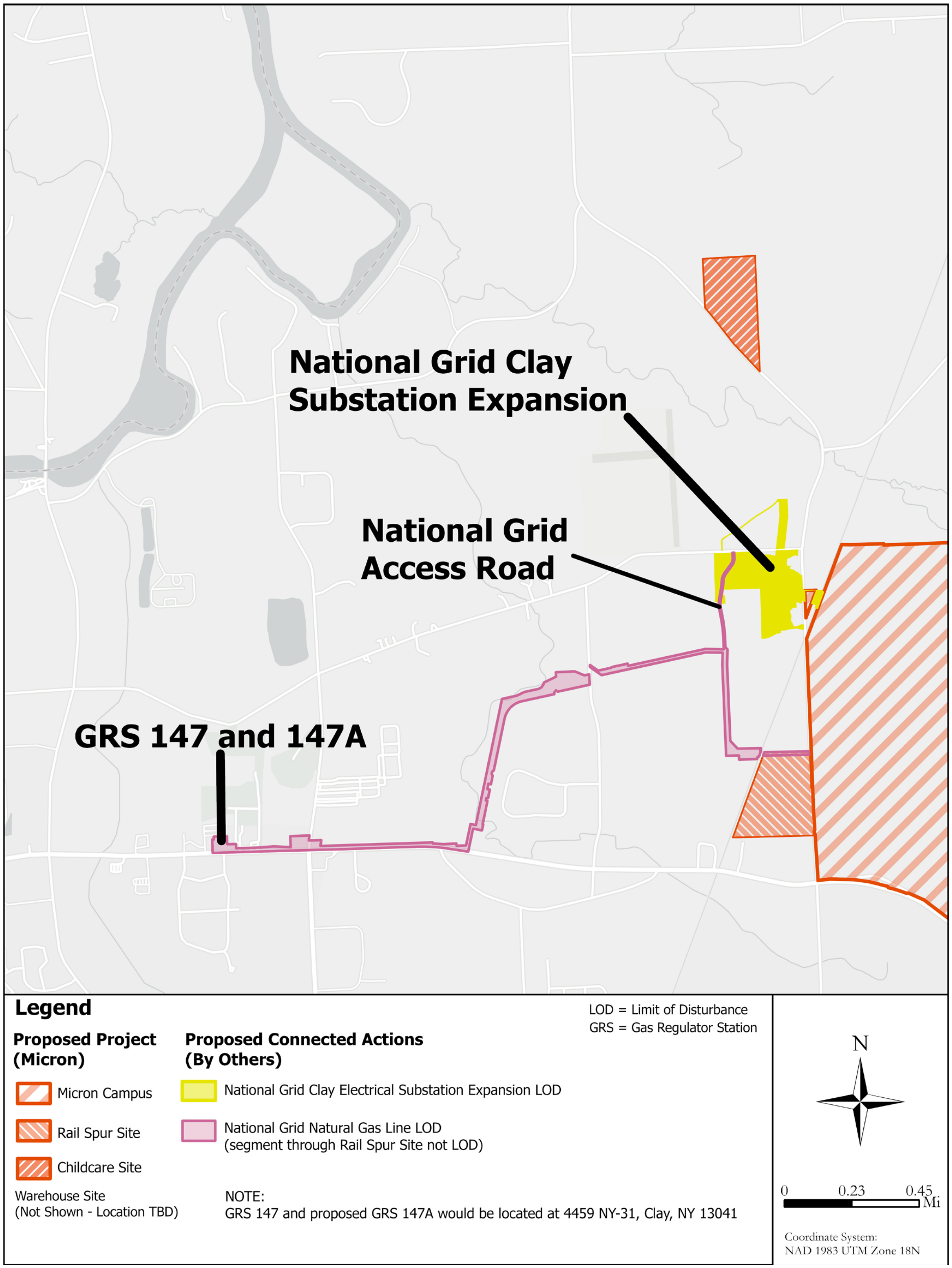
Construction of GRS 147A would require installing new subsurface infrastructure and above-grade equipment to the northeast of the existing GRS 147 fenced area and a new 34-foot-tall utility pole toward the south end of the fenced area, the same height as the utility poles on NYS Route 31. National Grid would replace the existing fence around the site with a new fence of the same height and appearance extending around the GRS 147A expansion area and a new entrance driveway on the eastern side of the site.

As shown in Figure 2.1-10 below, the new natural gas line would extend beneath the west-bound lane of NYS Route 31 from GRS 147A to a point approximately 400 feet east of the west end of Grange Road. At that point, the gas line would extend north and east within a 20-foot-wide easement that runs through several privately owned parcels and wetland areas. The gas line would be co-located within an existing utility ROW containing two 115kV overhead electrical lines, underground electric lines supplying a solar farm, telecommunication lines, and other utility lines.

The new natural gas line would extend south and east through the Clay Substation, pass under the existing CSX Railroad line and Buckeye Petroleum pipeline, and enter the Rail Spur Site (tax parcel 046.-02-03.2). From there, the line would pass under Caughdenoy Road and terminate within the Micron Campus (in tax parcel 048.-01-01.0). Construction of the new below-grade gas line would use cut-and-cover and horizontal directional drilling (HDD) methods at depths of 50 to 70 feet or more under Van Hoesen Road and conventional boring under the CSX Railroad line and Caughdenoy Road, with excavation of entry and exit pits at the ends of installation areas.

Construction would require temporary workspace and laydown areas along the entire gas line route but would not require the permanent acquisition of any properties or the alteration or removal of any structures. Temporary workspace in certain non-contiguous areas between GRS 147A and the existing easement east of Grange Road would need to partially extend onto adjacent private properties on either side of the easement, primarily grassy lawns adjacent to the north side of NYS Route 31. The temporary workspace also would include a parcel at 4541 NYS Route 31 at the intersection with Henry Clay Boulevard (tax parcel 029.-01-09.1) that currently includes a paved lot with a single-story brick commercial building dating from the late 20th century, which would not be affected by construction. A temporary workspace that would be located south of the Clay Substation and west of Caughdenoy Road would use an existing access road extending south of Verplank Road and would potentially require improvements to the access road.

Figure 2.1-10 Proposed Natural Gas Line and Clay Substation Expansion



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Micron Technology (n.d.).

Temporary workspace and laydown areas would potentially require tree clearing at certain locations to accommodate equipment access or material storage, including private properties within the easement. Tree stumps would be covered with mats to create workable surfaces where feasible, but tree stumps in certain other areas would potentially need to be removed. National Grid would restore disturbed areas to their original condition to the greatest extent practicable after construction. Trees may be replanted in areas where feasible; however, they would not be replanted in locations where they could potentially interfere with safe operation of the natural gas line. Construction of the proposed GRS expansion and gas distribution line would start in late 2025 and conclude in early 2028.

2.1.7 Water Supply

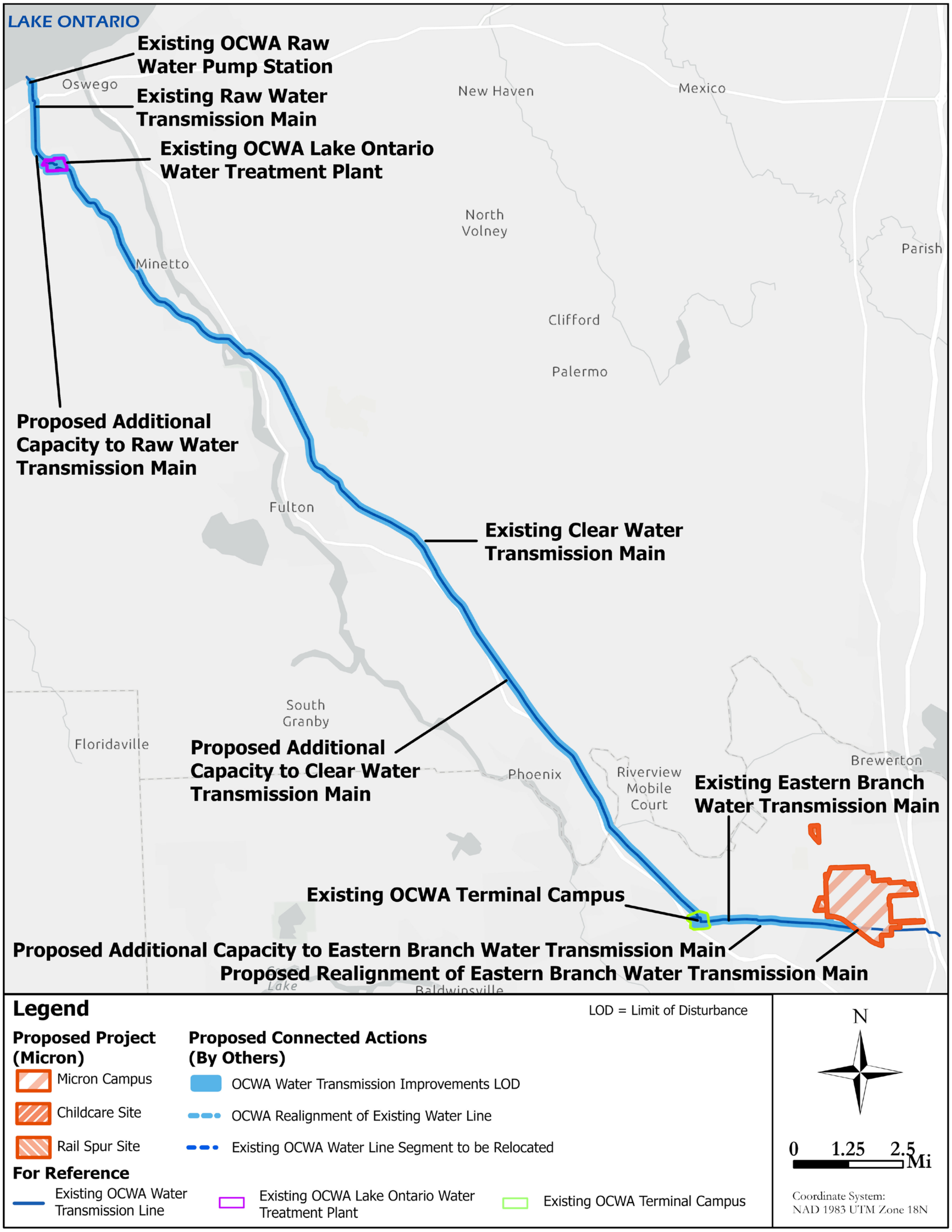
2.1.7.1 Overview

Water supply infrastructure improvements are part of the Connected Actions. OCWA proposes to undertake two phases of water system capacity and transmission upgrades to supply water to the Micron Campus. Phase 1 would involve upgrading the RWPS and LOWTP in Oswego and the Terminal Campus in Clay and constructing new water transmission mains. Phase 2 would involve additional upgrades and transmission lines based on future needs. Figure 2.1-11 provides an overview of these proposed improvements.

None of OCWA's proposed water infrastructure upgrades needed to meet Micron Campus water demands would require permanent land acquisition. OCWA would install new or re-routed transmission mains using standard cut-and-cover trenching, directionally drilled or micro-tunneling construction techniques as needed based on site conditions.

Sections 2.1.7.2 and 2.1.7.3 provide additional detail on OCWA's proposed Phase 1 and Phase 2 improvements.

Figure 2.1-11 Proposed Water Supply Improvements



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Micron Technology (n.d.).

2.1.7.2 Phase 1 Water Supply Improvements

The Micron Campus would consume 7.85 million gallons per day (MGD) of water in 2029 (Fab 1), 17. 4 MGD in 2030 (Fabs 1-2), 30.3 MGD in 2035 (Fabs 1-3), and 48 MGD at full build-out in 2041 (Fabs 1-4). For a more detailed analysis of the Micron Campus water demands and measures Micron would take in coordination with OCWA and OCDWEP relating to water reclamation and recycling, see Section 3.10 (Utilities and Supporting Infrastructure).

OCWA's existing water supply system would have the capacity to service the 7.85 MGD demand from Fab 1 coming online in 2029 with minor upgrades but would need to undertake further upgrades to service the 17.4 MGD demand when Fab 2 comes online in 2030. Table 2.1-6 outlines OCWA's proposed Phase 1 improvements (for Fabs 1-2).

Table 2.1-6 OCWA Phase 1 Improvements (for Fabs 1-2)

Timeframe	Improvements
2026 to 2027	OCWA would construct an approximately 1,000-foot-long pair of 42-inch water service connections within a 50-foot-wide easement through OCIDA property and terminating within the Micron Campus along Caughdenoy Road to supply potable water for initial Micron Campus construction needs through existing buried water mains.
2026 to 2027	OCWA would make minor upgrades to its Terminal Campus in Clay by renovating the Farrell Pumping Station, upgrading existing pumps, adding two new pumps, and constructing a new flow control facility capable of integrating a new water transmission main with site piping and managing future increased water flow to the existing pump station and tanks.
2028 to 2031	OCWA would upgrade the RWPS at Oswego by upgrading its pumps and drives to increase the water supply capacity of the LOWTP. The RWPS capacity is currently subject to a 62.5 MGD permit limit; OCWA would need to obtain a modification to its withdrawal permit for the RWPS before expanding the site capacity above that limit. The application for this permit has been submitted.
2028 to 2031	OCWA would construct an approximately 5-mile, 54-inch or larger transmission main running parallel to its existing Eastern Branch Transmission Main that runs from the Terminal Campus in Clay to the WPCP. OCWA also would relocate a portion of the Eastern Branch Transmission Main that is currently on the WPCP.
2029 to 2032	OCWA would construct a new, approximately 2.5-mile, 54-inch or larger raw water transmission main from the RWPS to the LOWTP parallel to the existing raw water transmission main for water supply redundancy and capacity.
2029 to 2033	OCWA would upgrade the LOWTP by replacing an existing backwash storage tank and the plant's existing clearwells with up to 15 MGD of new storage capacity, adding two new filters, installing an additional underground seal weir structure and parallel piping, and installing additional chemical storage space and residual handling (drying bed) facilities.
2030 to 2034	OCWA would construct a new, approximately 22-mile, 54-inch or larger clear water transmission main (crossing from Oswego into Onondaga County) running parallel to the existing clear water transmission main that runs from the LOWTP to the Terminal Campus, within current 99-foot-wide easements.

Source: OCWA (n.d.).

2.1.7.3 Phase 2 Water Supply Improvements

Phase 2 would involve additional water infrastructure improvements based on further evaluation of Micron Campus demand as Fabs 3 and 4 would start operations in 2035 and 2041. For a more detailed analysis of the projected water demand for Fabs 3-4 and how water reclamation and recycling measures would factor into those projections, see Section 3.10 (Utilities and Supporting Infrastructure). At this stage of the Proposed Project and Connected Actions, OCWA would tentatively propose to undertake the improvements in Table 2.1-7 to build in further water supply redundancy for Fab 2 and accommodate the projected demand for Fabs 3-4.

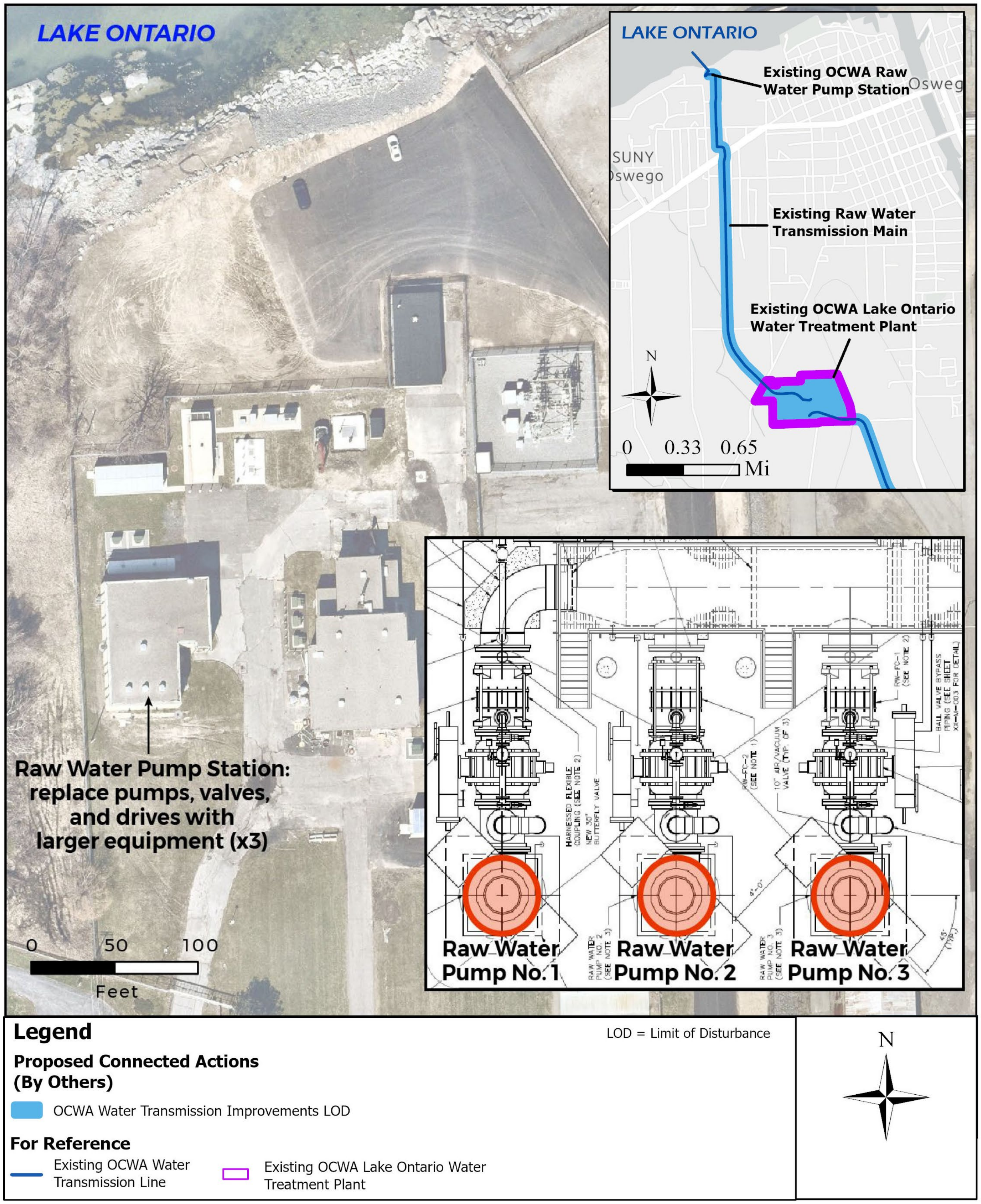
Table 2.1-7 OCWA Phase 2 Improvements (for Fabs 3-4)

Timeframe	Improvements
2034 to 2037	OCWA would make additional upgrades to the Terminal Campus, including up to two new 15-million-gallon (MG) tanks, a new parallel Farrell Pumping Station, associated piping work, and expansion of the existing substation.
2036 to 2040	OCWA would make additional upgrades to the LOWTP, installing at least two new filters and contact basins in a new filter wing, an additional clearwell tank, a second clear water pump station, and additional chemical storage space and residual handling facilities. These upgrades would require relocation of an existing solar field on a portion of the LOWTP property; OCWA would relocate and re-install the solar panels to avoid a reduction in their generation capacity. Alternatively, OCWA is considering upgrade layouts that would potentially avoid the need to relocate the solar panels and preserve as much of the site footprint as possible for future needs. OCWA also would potentially construct a third approximately 22-mile, 54-inch clear water transmission main parallel to the existing and Phase 1 transmission mains discussed above within the current 99-foot-wide easements. Finally, OCWA would construct a new 5,000 sq. ft. Clear Water Pumping Station within the LOWTP footprint to accommodate the additional projected demand for Fabs 3 and 4.
2038 to 2040	OCWA would construct a third approximately 5-mile, 54-inch or larger Eastern Branch transmission main parallel to the existing and Phase 1 Eastern Branch transmission mains discussed above.

Source: OCWA.

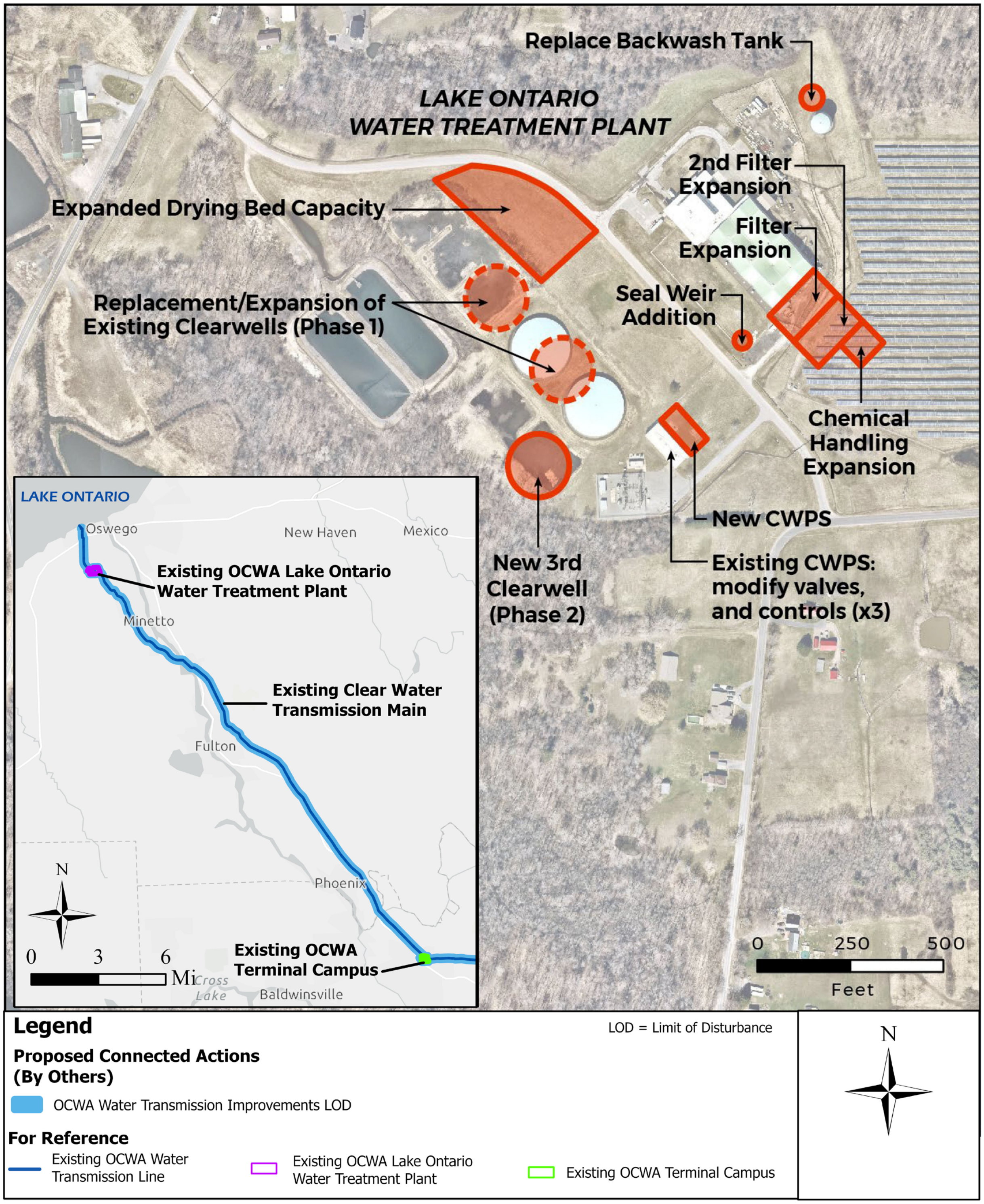
Figure 2.1-12 through Figure 2.1-15 on the following pages show OCWA's proposed upgrades to the RWPS, LOWTP, Terminal Campus, and Eastern Branch transmission infrastructure, and maps of proposed new water transmission main routes, as described above.

Figure 2.1-12 Proposed Raw Water Pump Station Upgrades



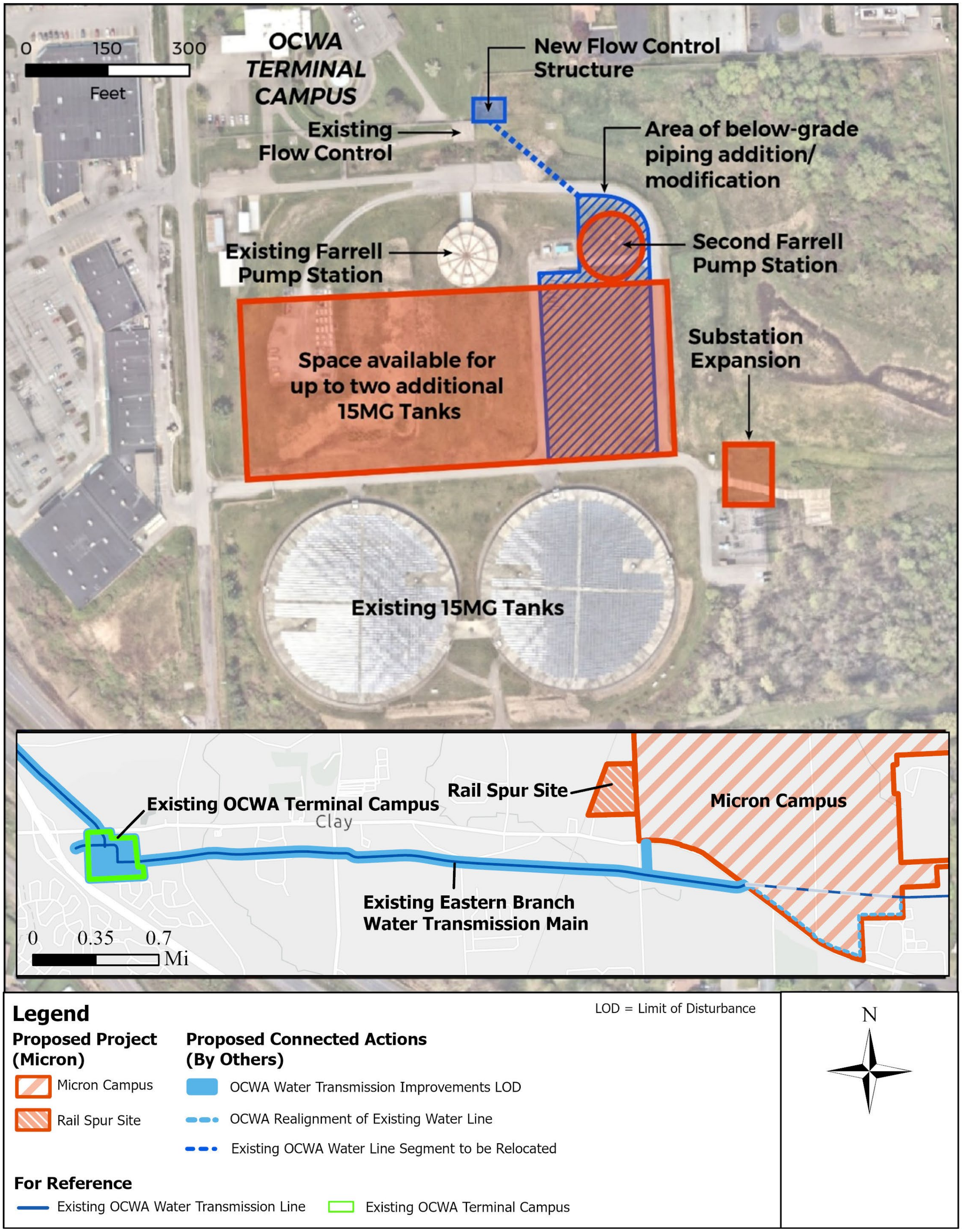
Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; OCWA (2023a).

Figure 2.1-13 Proposed LOWTP Upgrades and Transmission Mains



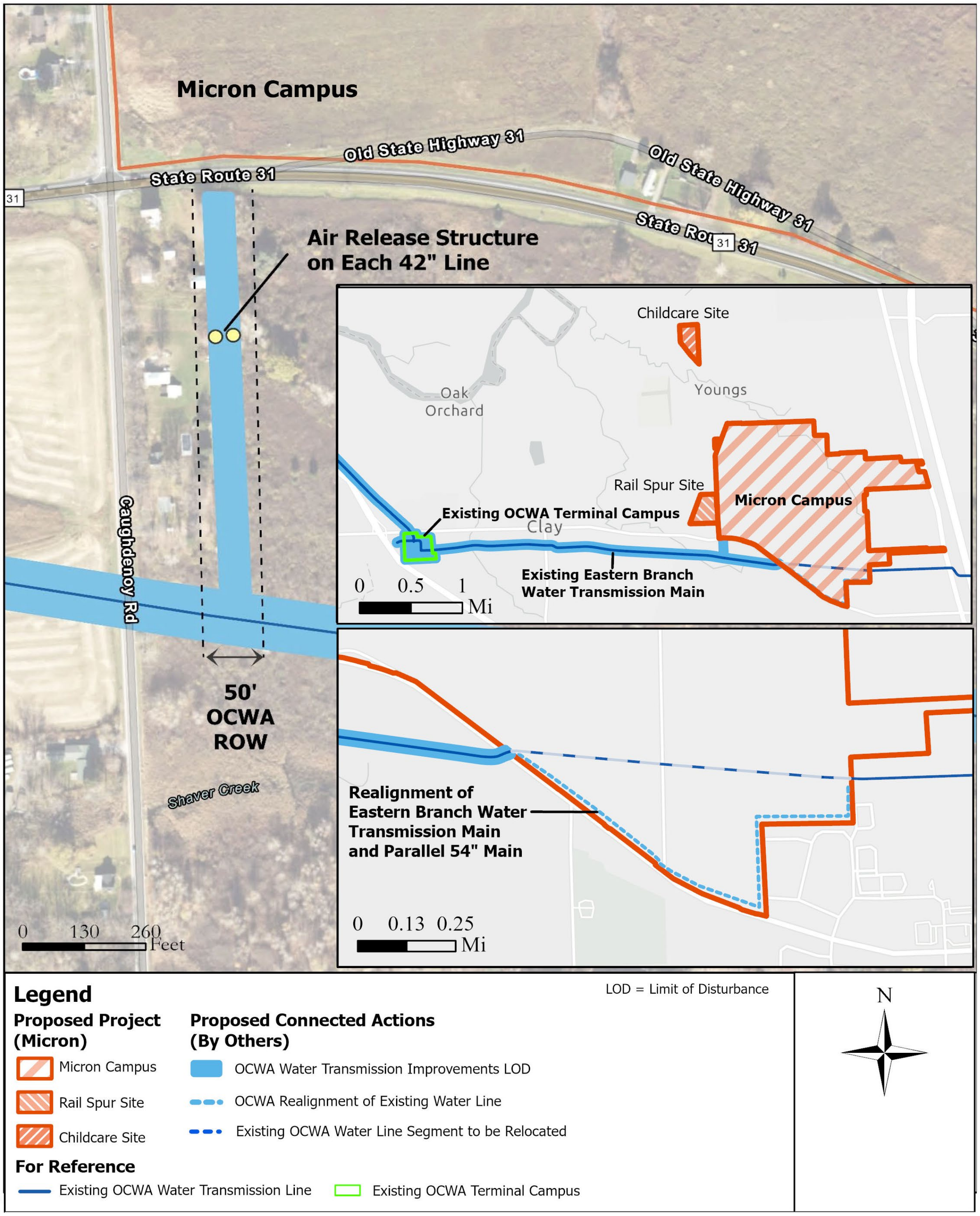
Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; OCWA (2023a).

Figure 2.1-14 Proposed Terminal Campus and Eastern Branch Upgrades



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; OCWA (2023a).

Figure 2.1-15 Proposed Eastern Branch Connection to Micron Campus



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; OCWA (2023a).

2.1.8 Wastewater

2.1.8.1 Overview

OCDWEP proposes to undertake two stages of wastewater infrastructure and capacity improvements to serve the Micron Campus. Stage 1 would involve interim "bridging" projects (see below) at the existing OOWWTP to receive startup industrial wastewater flows and potentially initial manufacturing industrial flows from construction of Phase 1 of the Micron Campus (Fabs 1-2) while OCDWEP constructs a new IWWTP and reclaimed water facilities at its 76-acre Oak Orchard site. Stage 1 would also involve construction of a new conveyance between the Micron Campus and the Oak Orchard site to send pretreated industrial wastewater to the IWWTP and return reclaimed water to the Micron Campus.

Stage 2 would expand and upgrade the IWWTP to serve additional campus industrial wastewater flows from Phase 2 of the Micron Campus build-out (Fabs 3-4) and provide additional reclaimed water back to the Micron Campus.

2.1.8.2 Interim Bridging Projects

Anticipated industrial wastewater flows from the Micron Campus would require construction of a new IWWTP. However, OCDWEP would not complete construction of the IWWTP until 2029 (see below). In the interim period, while the IWWTP and Fab 1 are each under construction, the existing OOWWTP would need to temporarily accept "startup" wastewater flows from construction, initial equipment testing of Fab 1, and potentially some of the initial manufacturing flows. If necessary, and to ensure OCDWEP's infrastructure at the Oak Orchard site could accommodate these flows and loading during this interim period, OCDWEP would construct temporary "bridging" projects between the OOWWTP and the under-construction IWWTP. The bridging projects would consist of temporary biological treatment to supplement the existing OOWWTP capacity during the construction phase, Fab 1 start-up testing, and initial manufacturing.

2.1.8.3 New Industrial Wastewater Treatment Plant

As part of Stage 1 (to service Fabs 1-2), OCDWEP would oversee the design, construction, operation, and maintenance of a new IWWTP, as well as the reclaimed water facilities, on OCDWEP's existing 76-acre Oak Orchard site. The new IWWTP processes would include equalization, fine screening, biological treatment and UV disinfection. OCDWEP anticipates starting construction of the IWWTP in 2026, advancing interim operations in 2028, and completing construction in 2029. The IWWTP treated water would connect on the Oak Orchard site to the existing OOWWTP discharge for ultimate combined discharge through the OOWWTP outfall to the Oneida River. The IWWTP would establish pretreatment limits for Micron in an industrial wastewater discharge permit (IWTP). The industrial wastewater pre-treatment facilities constructed on the Micron Campus will be required to comply with the IWDP limits. For a more detailed discussion of the wastewater capacity that would be needed for the full build-out of the Micron Campus, see Section 3.10 (Utilities and Supporting Infrastructure).

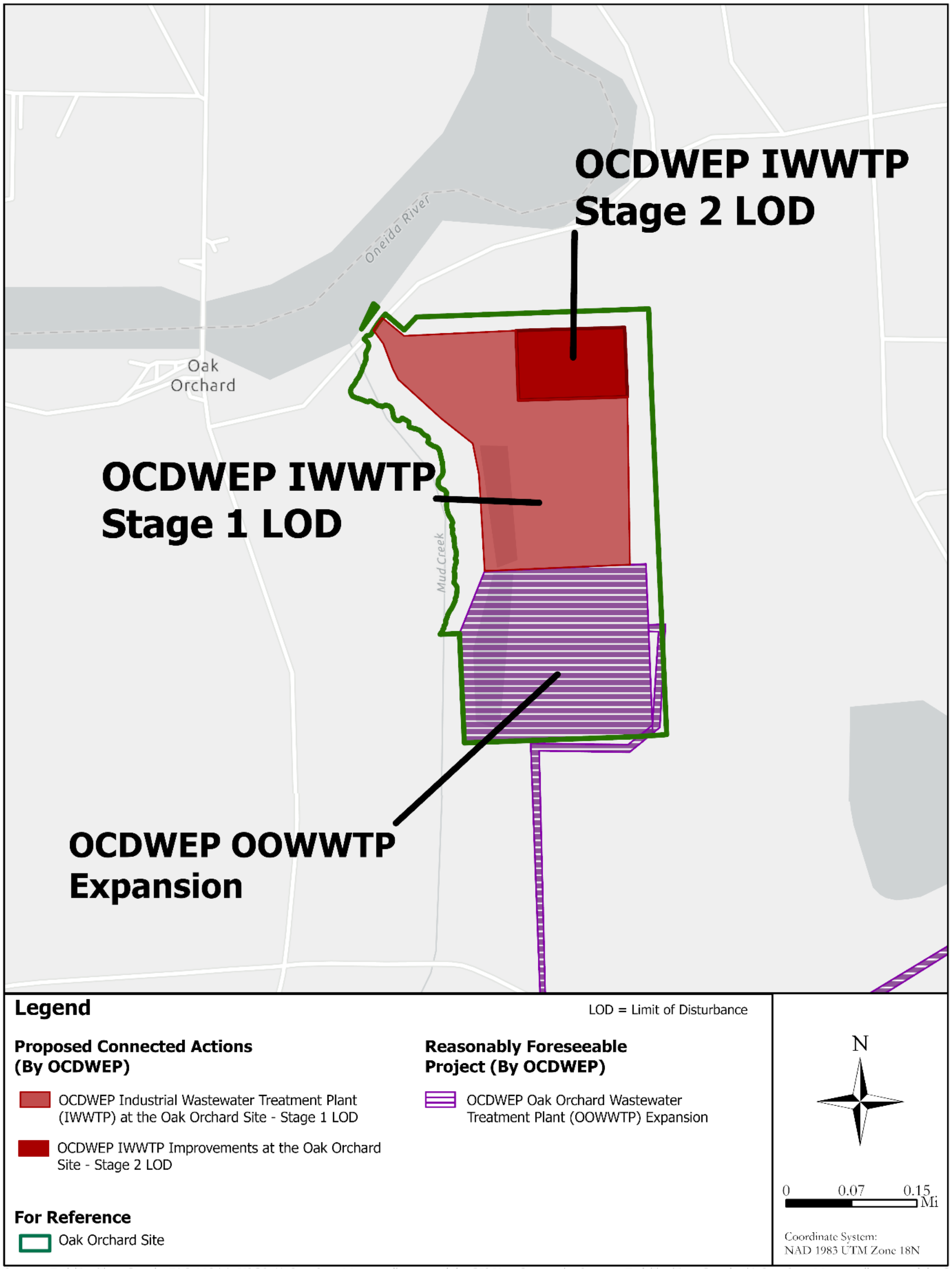
In addition to the IWWTP, OCDWEP is coordinating with Micron to identify opportunities for water reuse, reclamation, and recycling. OCDWEP and Micron are currently evaluating two potential sources of reclaimed water: (1) reuse of municipal effluent treated from the existing

OOWWTP to supplement potable water supplies to the Micron Campus from OCWA as makeup water for Micron's ultrapure water system (and potential other industrial end users); and (2) reuse of industrial effluent that would be treated by the IWWTP as makeup water for cooling towers and other mechanical systems on the Micron Campus. These reclaimed effluent streams would require their own conveyances from the Oak Orchard facilities back to the Micron Campus. Although these reuse projects would reduce Micron's demand for freshwater supplies from OCWA, they are still speculative in nature and their potential benefits in reducing overall water demand from OCWA for the Proposed Project are not assumed in this NEPA/SEQRA analysis.

The IWWTP would be sufficient to service Fabs 1-2. As part of Stage 2 (to service Fabs 3-4), OCDWEP would undertake a limited expansion of the IWWTP beginning in 2031, approximately 30 months prior to Micron's anticipated Q3 2035 ready-for-equipment date for Fab 3. OCDWEP would anticipate completing the Stage 2 expansion of the IWWTP in 2034. As shown in Figure 2.1-16 below, the reduced Stage 2 footprint relative to the footprint for Stage 1 of the IWWTP would reflect a lower wastewater flow rate and organic loading as a result of additional pre-treatment measures implemented at the Micron Campus for Micron's Phase 2 (Fab 3-4) operations. Micron would construct additional pretreatment facilities, including BIO treatment, on the Micron Campus to remove dissolved organic contaminants and nutrients from industrial wastewater from Fabs 3-4 prior to sending the wastewater to the IWWTP. This also would increase Micron's internal water recovery rate and thereby lower Micron's total effluent discharge to the IWWTP.

Construction of the IWWTP would necessitate the removal of existing solar panel arrays located on an existing OOWWTP lagoon on the Oak Orchard site. OCDWEP would work with the solar company that is currently leasing the space at Oak Orchard to identify locations for potential relocation of the solar facility at other County properties.

Figure 2.1-16 Proposed OOWWTP Expansion and New IWWTP



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; OCDWEP (n.d.)

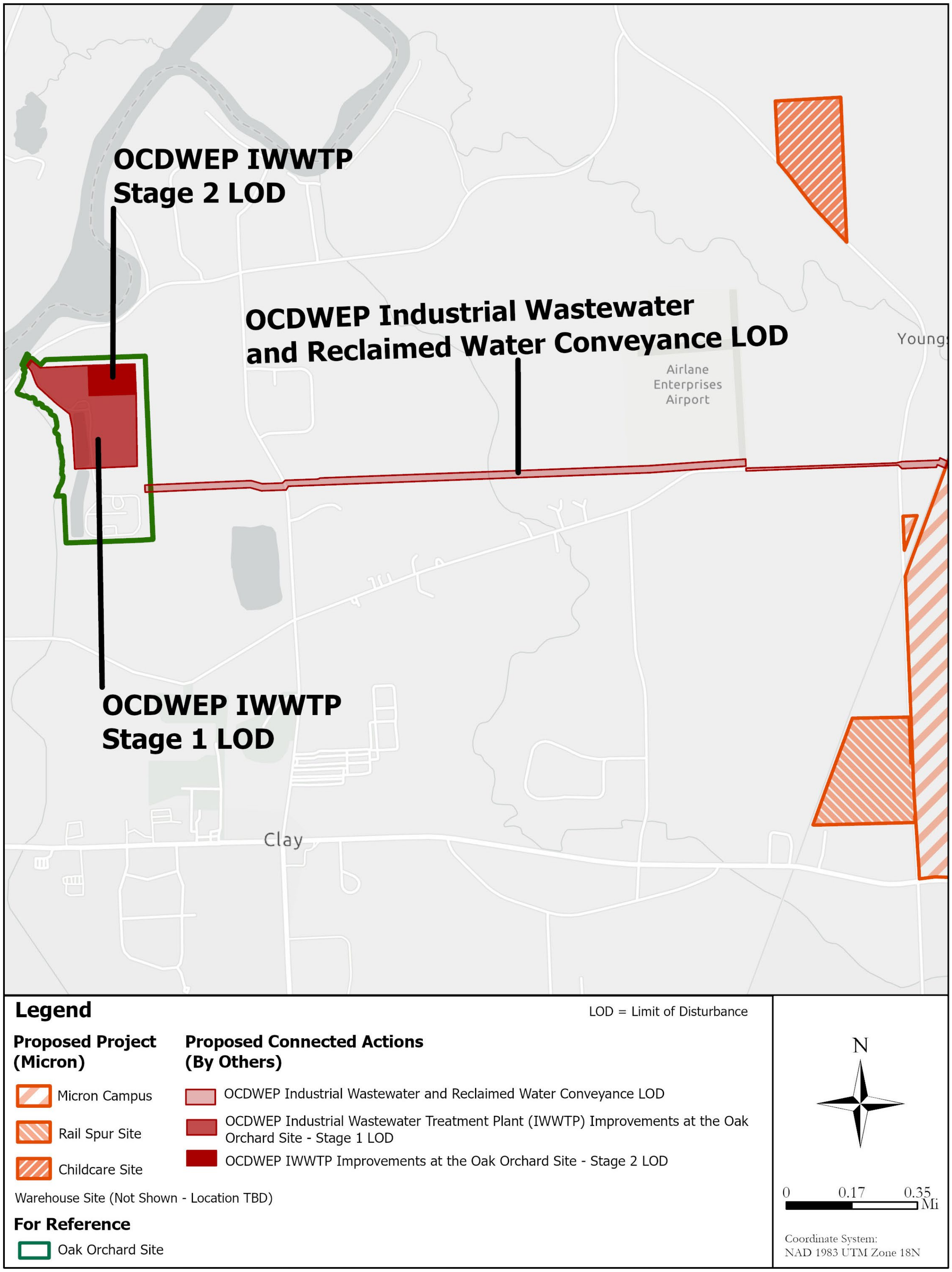
2.1.8.4 New Industrial Wastewater and Reclaimed Water Conveyance

As part of Stage 1, OCDWEP would oversee the design, construction, operation, and maintenance of a new two-mile-long industrial wastewater and reclaimed water conveyance between the Oak Orchard site and the Micron Campus. Figure 2.1-17 below shows the general arrangement of the conveyance in relation to the Oak Orchard site and the Micron Campus.

The conveyance would consist of three 30-inch industrial wastewater force mains and four roughly 36-inch reclaimed water force mains. These force mains would be constructed within a 99-foot-wide easement extending east from the Oak Orchard site to Verplank Road at the point where the road curves southwest. From Verplank Road east, the force mains would be constructed beneath or adjacent to Verplank Road to Caughdenoy Road, then beneath Caughdenoy Road and through the undeveloped parcels between Caughdenoy Road and the CSX railroad tracks, and beneath the CSX railroad tracks to where the force mains would terminate within the Micron Campus. All but two of these private easement agreements have been secured. If agreement cannot be reached with the remaining property owners, eminent domain would be used to acquire access or easements on portions of the properties where permanent easements are needed.

The force mains would be installed underground by conventional cut-and-cover trenching or additional methods depending on site conditions, using HDD or less-intensive ground disturbance methods to the greatest extent practicable to minimize tree removal and other surface disturbances.

Figure 2.1-17 Proposed Industrial Wastewater and Reclaimed Water Conveyance



Sources: Light Gray Canvas (Esri, 2025a): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; OCDWEP (n.d.)

2.1.9 Telecommunications

Telecommunication improvements are part of the Connected Actions. To supply telecommunication and broadband internet connectivity to the Micron Campus, Micron would make use of two existing fiber optic lines along Caughdenoy Road and NYS Route 31 accessible via two fiber optic connection entry points within a mile of the WPCP, one at the intersection of Caughdenoy and Verplank Roads, and one at the intersection of Caughdenoy Road and NYS Route 31 (see Figure 2.1-1). The existing fiber optic lines currently serve a cell tower on the southern portion of the WPCP, just north of NYS Route 31.[27]

The purpose of extending the fiber optic lines to the Micron Campus would be to facilitate an underground fiber optic cable network and telecommunication system for the campus designed to provide it with high-speed broadband connectivity, full network coverage, and ample bandwidth capacity for operations and administration. Extending both lines would be necessary to provide the campus with two separate fiber pathways for continuity, operational redundancy, and the capacity for future expansion.

Re-routing the lines would require unburying cable routes at or near the existing connection points or pulling the cables through existing conduits. The cable would be pulled and re-routed along existing road telecommunication ROWs and re-buried at two new connection entry points to connect the fiber optic lines to the Micron Campus, one at the northwestern border of the WPCP via a duct bank shared with electrical lines running under Caughdenoy Road, and one at the cell tower in the WPCP via cable running along NYS Route 31.

Re-routing and extending the fiber optic lines to connect to the Micron Campus would require minimal ground disturbance contained within the existing road ROWs and areas of the WPCP. Installing the fiber optic cable would involve directly burying it 30 inches underground and would not require additional protective conduits or ducts. The need for additional aerial cable routing and splicing would be determined based on final design.

Construction of the proposed telecommunication improvements would start and conclude in 2026 and would not be anticipated to disrupt structures or traffic.

[27] The existing cell tower belongs to SBA Properties, Inc., a Florida Corporation c/o SBA Telecommunications, Inc., and Syracuse SMSA Limited Partnership, d/b/a Verizon Wireless.

2.2 ALTERNATIVES

NEPA and SEQRA require agencies to consider a "reasonable range of alternatives to the proposed action, including an analysis of any negative environmental impacts of not implementing the proposed action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal." 42 U.S.C. 4332(C)(iii); 6 NYCRR 617.9(b)(5)(v) (requiring that an EIS describe and evaluate "the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the project sponsor.").

The range of alternatives considered for this EIS include the Preferred Action Alternative, the No Action Alternative, a Reduced Scale Manufacturing Alternative, a U.S. Route 11 Access Elimination Alternative, and six Micron Campus Site Layout Alternatives.

Section 2.2.1 below identifies the No Action Alternative, under which the Proposed Project and Connected Actions would not be implemented. The effects of the No Action Alternative are evaluated throughout the EIS as required under NEPA and SEQRA.

In Sections 2.2.2 through 2.2.3, CPO and OCIDA identify the alternatives that were considered but eliminated from detailed analysis in the EIS because they were found to be not reasonable or practicable.

CPO and OCIDA's evaluation criteria for considering the alternatives were:

- the ability to meet CPO's purpose and need under NEPA;
- the ability to meet Micron's purpose and need under SEQRA;
- technical and economic feasibility and practicability; and
- reduced adverse and/or greater beneficial environmental effects when compared to the Preferred Action Alternative.

CPO and OCIDA reviewed the alternatives against the evaluation criteria in the sequence presented above. Except for the No Action Alternative, if an alternative would not meet CPO's purpose and need under NEPA or Micron's purpose and need under SEQRA (see Section 1.1) or would not be technically and economically feasible and practicable, CPO and OCIDA determined not to carry that alternative forward for detailed analysis in the EIS, regardless of how it would compare against the fourth criterion.

An alternative that would not meet CPO's purpose and need under NEPA and Micron's purpose and need under SEQRA would not be an acceptable alternative. None of the alternatives discussed in Section 2.2 would meet the purposes and needs described in Section 1.1.

For further consideration, an alternative would have to be technically and economically feasible and practicable. In the context of the large-scale semiconductor projects CPO and OCIDA are considering, there is an inherent degree of overlap between the first two and the third criterion (i.e., an alternative that is not technically or economically feasible or practicable would not meet the purposes and needs in Section 1.1).

A technically and economically feasible and practicable alternative would generally require the use of common construction methods. An alternative that would require the use of a new, unique, or experimental construction method may not be technically practicable because the required technology is not available or is unproven.

In addition, a technically and economically feasible and practicable alternative would generally result in a project that is price-competitive. As noted above, the global cost competitiveness of a semiconductor manufacturing facility, where even narrow marginal cost efficiencies are highly significant, is a key consideration in the context of this EIS and the purposes and needs described in Section 1.1. Therefore, CPO and OCIDA consider aspects of alternatives that would produce inefficiencies that could result in an economically impractical project to be a critical factor when considering such alternatives.

Determining whether an alternative would have reduced adverse or greater beneficial environmental effects when compared to the Preferred Action Alternative requires a comparison of the effects on each resource area as well as an analysis of effects on resources that are not common to the alternatives being considered. The determination must then balance the overall effects and all other relevant considerations. In comparing the effects between alternatives, CPO and OCIDA also considered the degree of effects on each resource. Ultimately, an alternative that would result in equal or minor advantages in terms of reduced adverse effects or greater beneficial effects would not necessarily compel selecting one alternative over another.

Accordingly, CPO and OCIDA considered a range of alternatives considering overall purposes and needs, feasibility, and environmental consequences. Through this comparison and application of each agency's professional judgment, each alternative was considered to a point where it became clear whether it could or could not satisfy the evaluation criteria.

Where appropriate, CPO and OCIDA used supporting site-specific information (e.g., detailed designs) provided by Micron or the entities that would undertake the Connected Actions. The evaluation also considered effects on both the natural and human environments. The natural environment includes water resources and wetlands, plant and wildlife species and habitat, farmland soils, and geology. The human environment includes nearby landowners, residences, land uses, utilities, and industrial and commercial development near proposed construction areas. In recognition of the competing interests and the different nature of effects resulting from an alternative that sometimes exists (i.e., effects on the natural environment versus effects on the human environment), CPO and OCIDA considered other factors that were relevant to a particular alternative or discounted or eliminated factors that were not relevant or may have had less weight or significance. When comparing the effects between alternatives, the agencies compared the degree of effects on each resource associated with each alternative.

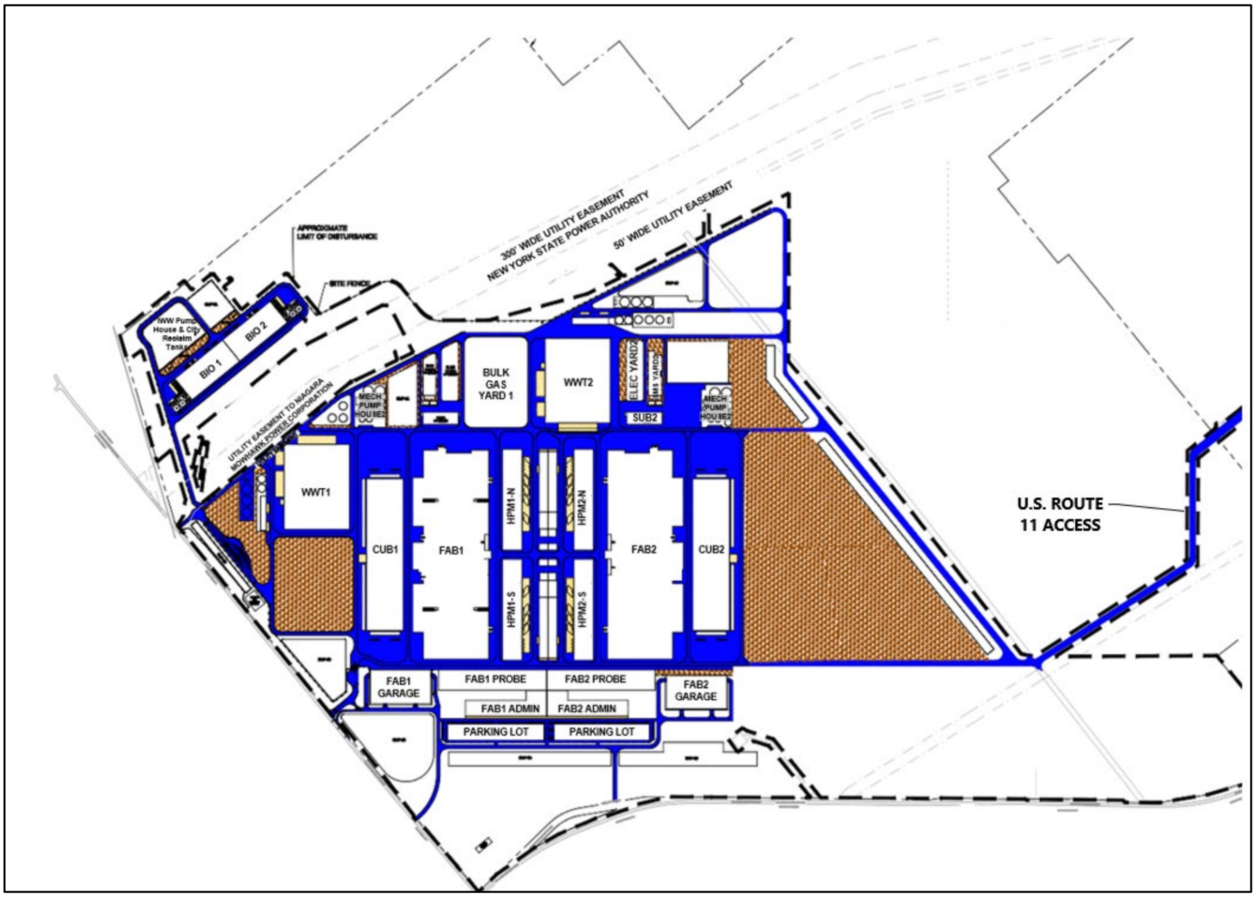
2.2.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. OCIDA acquired all parcels on the WPCP, the vast majority of which are presently vacant, for the specific purpose of creating an industrial park (as analyzed in the WPCP 2021 Supplemental GEIS). The No Action Alternative would delay OCIDA's long-standing objective to bring high-tech facilities and high paying jobs to Onondaga County at the WPCP until such time as OCIDA identifies another suitable development proposal for the property. The Rail Spur and Childcare Sites would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions.

2.2.2 Reduced Scale Manufacturing Alternatives

CPO and OCIDA considered reduced scale manufacturing alternatives in coordination with Micron. An example of a reduced scale manufacturing alternative would be a two-fab arrangement with 1.2 million sq. ft. of cleanroom space, as shown in Figure 2.2-1 below.

Figure 2.2-1 Reduced Scale Alternative Layout



Source: Micron Technology (n.d.).

As described in Section 1.1.1, achieving economic viability in the semiconductor industry requires the ability to construct large fab clusters on single campuses with average fab sizes sufficient to accommodate necessary cleanroom space for specific technology types. Based on Micron's economic model supporting its CHIPS application, which CPO staff reviewed as part of the due diligence process for the Department of Commerce's merits review, the Department determined that Micron would need to construct 2.4 million sq. ft. of cleanroom space capable of producing an average of 52,000 wafers per week over the life of the project to achieve the level of memory chip output sufficient to meet U.S. economic and national security objectives. The Department also determined that Micron would need to construct four fabs co-located at a single site with sufficient supporting infrastructure and utility capacity in order to accommodate the 2.4 million sq. ft. of cleanroom space necessary to achieve the required level of domestic DRAM production in a configuration that would be technically and economically practicable. The Department determined that without the ability to build four co-located fabs, Micron's proposal would incur prohibitive additional costs and operational inefficiencies, which would likely force Micron to withdraw its application and pursue a memory campus in a lower-cost geography outside of the U.S.

Reduced scale alternatives, including two and three fab configurations, would not be able to capture these necessary economies of scale to achieve the output the Department seeks to incentivize for U.S. economic and national security purposes without threatening the economic viability of the Proposed Project. Without a single, large campus dedicated to achieving the above output, Micron also would not be able to facilitate co-location and efficient operation of semiconductor manufacturing supply chain expertise and supplier delivery operations in the vicinity, which would impede the Proposed Project's operational efficiency by making it more difficult to obtain critical materials and keep production high and costs low through collaborative engineering. Further, reduced scale alternatives would require constructing and operating additional fabs at other locations, which would have additional environmental effects.

A reduced scale manufacturing alternative also would incur significantly higher costs per unit of DRAM produced than a full-scale four-fab campus. This is measured in terms of the CAU rate, which determines how well a fab uses its installed production capacity. For example, building only two fabs would decrease the CAU rate by 6.7 percent due to reduced operational efficiency, which would require an approximately $2.5 billion increase in equipment costs to achieve the above wafer per week output as efficiently as a four-fab facility, driving up the cost per unit basis and threatening the economic viability of the Proposed Project. The higher cost would arise from using equipment with excess capacity for non-constrained workstations, leading to inefficiency and wasted capacity, which would cause the facility to incur prohibitive cost overruns and place it at a competitive disadvantage with peer facilities worldwide. The most expensive tools in the fabs would be EUV lithography tools that cost more than $400 million each, making them the production bottleneck. To ensure these tools never run out of work-in-progress to process (i.e., avoid wasted capacity), co-location of multiple fabs is necessary to ensure a higher CAU rate.

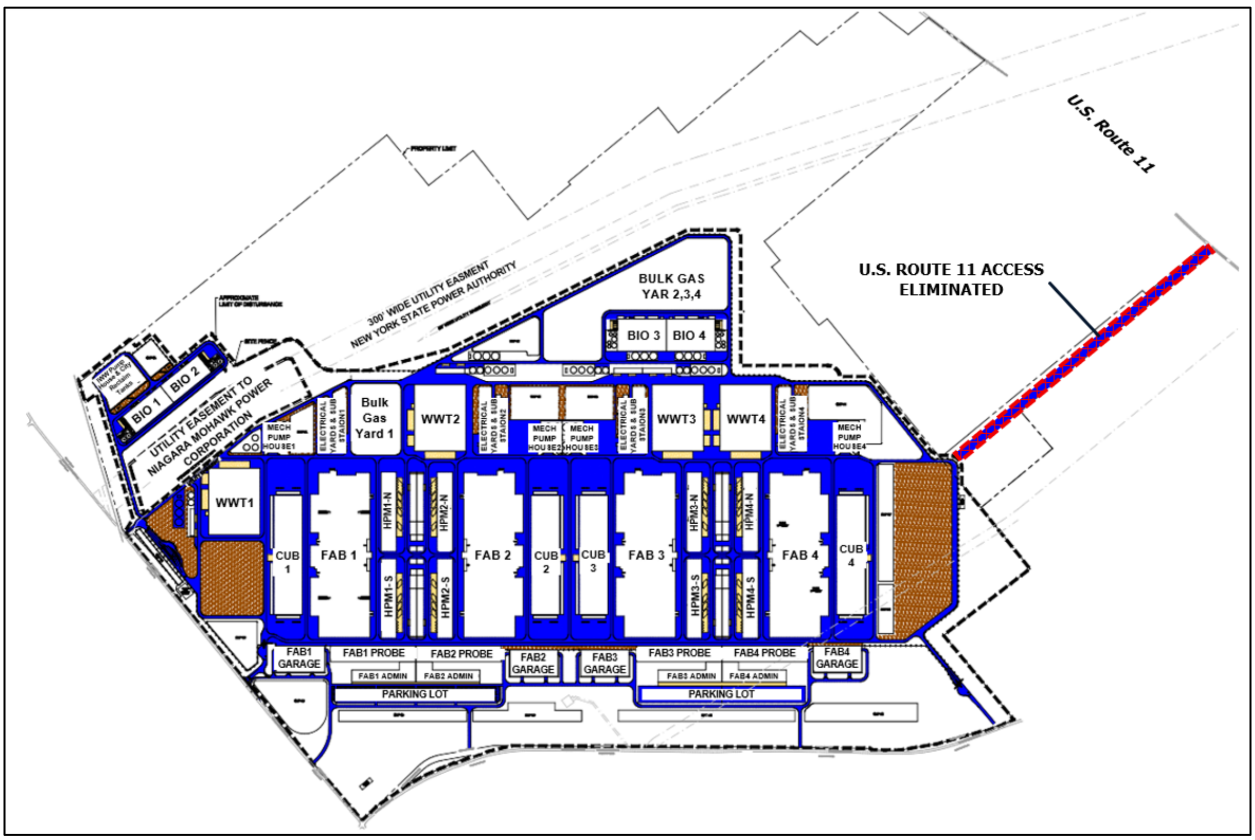
Based on the above factors, reduced scale manufacturing alternatives would not be economically viable or meet CPO's purpose and need, and were not carried forward for further evaluation. For additional information, see Appendix A-1.

2.2.3 U.S. Route 11 Access Elimination Alternative

In coordination with Micron, CPO and OCIDA considered a potential site layout alternative for the proposed Micron Campus that would eliminate access to the campus from U.S. Route 11. (Under the Preferred Action Alternative, Micron would construct a 3,900-ft. site access driveway running west from U.S. Route 11 in the Town of Cicero onto the Micron Campus. Under the site layout alternative considered here, Micron would not construct the driveway.) Although eliminating the driveway would avoid the disturbance of 2.3 acres of Federal jurisdictional wetlands, including 0.71 acres of State jurisdictional wetlands accounted for within the 2.3 acres of Federal jurisdictional wetlands, based on the other consequences of eliminating this driveway explained below, this site layout would not be a reasonable alternative.

The site access driveway from U.S. Route 11 would be a vital access point and ensure sufficiently streamlined construction traffic movement to avoid interference with local traffic patterns, particularly during construction of Fabs 2 through 4, when carefully managing the flow of construction vehicles, equipment, and personnel would be crucial to maintain efficiency and safety. Without this driveway, the Micron Campus would not have a sufficiently diversified set of site entry and exit points; the only remaining access points would be concentrated along NYS Route 31. The driveway would distribute site access more effectively across the area roadway network, reducing the likelihood of bottlenecks and congestion, particularly at the critical junctions of NYS Route 31 and I-81, and would mitigate post-construction traffic effects from campus operations, supporting a seamless movement of employees, suppliers, and logistics operations. Because the U.S. Route 11 site access driveway would be critical for managing construction and operational traffic and minimizing congestion, a site layout alternative eliminating the driveway would not be a reasonable alternative, i.e., it would not be feasible considering the objectives and capabilities of the project sponsor, Micron, which would include the need to ensure safe and efficient construction and operational traffic flow around the proposed Micron Campus during and following its build-out. Therefore, CPO and OCIDA did not carry this site layout alternative forward for further analysis in the EIS.

Figure 2.2-2 U.S. Route 11 Access Elimination Layout



Source: Micron Technology (n.d.).

2.2.4 Micron Campus Site Layout Alternatives

In coordination with Micron, CPO and OCIDA considered a further series of potential site layout alternatives for the proposed Micron Campus to determine whether a different layout of the fabs and supporting buildings from the Preferred Action Alternative site layout would result in fewer impacts to waterbodies on the WPCP. Specifically, six site layout alternatives were considered in addition to the Preferred Action Alternative. However, CPO and OCIDA determined that none of the site layout alternatives besides the Preferred Action Alternative would be technically or economically feasible or practicable because each would create inefficiencies that would prevent the Micron Campus from achieving the semiconductor wafer output necessary to achieve commercial viability.

In addition, CPO and OCIDA found that all of the site layout alternatives besides the Preferred Action Alternative would result in either the same amount of permanent losses of Federal jurisdictional wetlands or the permanent loss of approximately 16-20 additional acres of Federal jurisdictional wetlands.

Therefore, CPO and OCIDA determined that the Preferred Action Alternative site layout makes it the only alternative that meets CPO's and OCIDA's purposes and needs (see Section 1.1) and did not carry the six other site layout alternatives forward for further analysis in the EIS.

For figures showing the site layout alternatives and a more detailed explanation of why they were not carried forward for further analysis in the EIS, see Appendix B-3.

2.3 PROPOSED PROJECT CONSTRUCTION SCHEDULE

Since publication of the DEIS, CPO and Micron have amended their funding agreement. Among other things, the amendment modified the time by approximately two years in which Micron would have the option to commence operations of Fabs 1 and 2 for purposes of the funding agreement. Therefore, the construction schedule for of all four fabs may differ from that presented in this FEIS.

Under the potential revised construction schedule included in Appendix B-5, Micron would still mobilize for initial site preparation beginning in the fourth quarter of 2025 just as analyzed in this EIS. However, Micron would push back the initiation of construction of Fabs 1 and 2, and construct each over a longer period of time.

Specifically, construction of Fab 1, which previously was anticipated to begin in Q4 of 2025 and end at the end of Q2, 2028, would, under the revised construction schedule, begin in Q2 of 2026 and extend to Q3 of 2030, whereupon commencement of operations of Fab 1 would begin.

Under the revised construction schedule, construction of Fab 2 would begin in Q4 of 2030 and end in Q4 of 2033 whereupon commencement of operations of Fab 2 would begin, instead of beginning in Q3 2028 and ending in Q4 2030.

Because the revised construction schedule for Fabs 1 and 2 would delay the arrival of operational workers at the Micron Campus, initiation of construction at the Childcare Site would change from 2026 to 2028 for the childcare center, and from 2030 to 2032 for the healthcare and recreation centers. Securing warehouse space also would be changed to November 2028 because initiation of wafer production would occur later in time.

Finally, the initiation of construction of Fab 3 would be changed from Q3 2033 to Q3 2035 and Fab 4 would be delayed by one calendar quarter. Despite these potential construction schedule changes, final construction on the Micron Campus (including Fab 4) would still be completed in 2041 as discussed in this EIS and ramp up to full four-fab production would still occur by the end of 2045.

The construction schedule for the Connected Actions also would also change to meet the utility needs of the Proposed Project under its revised construction schedule. For detailed information about the potential revised construction schedule, and a side-by-side comparison of these potential construction schedule changes and the construction schedule analyzed in this EIS, see Appendix B-5.

The potential construction schedule changes described above and in Appendix B-5 would not materially change the reasonably foreseeable effects that are described for the Preferred Action Alternative in this EIS or modify the significance of those effects. As a result, no changes were made to the assessment of environmental effects in Chapters 3 and 4 of the EIS. Appendix B-5.2 provides a resource-by-resource assessment of how the potential construction schedule change might alter the intensity of environmental effects associated with the Proposed Project and Connected Actions (See Appendix B-5.2, Table B-6).

This assessment concluded that the potential construction schedule changes generally would either have no effect on, or slightly lessen, the environmental effects that otherwise would be associated with the Preferred Action Alternative. This is because the potential construction schedule changes generally would reduce the intensity of development during the initial stages of Proposed Project implementation, while preserving the overall Proposed Project construction period. Accordingly, the environmental effects associated with the Preferred Action Alternative, including the potential significant adverse environmental effects of the Proposed Project and Connected Actions would not be materially different under the revised construction schedule.

3.0 ENVIRONMENTAL ANALYSIS

Chapter 3 describes the affected environment as it currently exists and analyzes the environmental consequences of the No Action Alternative and Preferred Action Alternative. The analysis in Chapter 3 is organized by the following resource areas: Land Use, Zoning, and Public Policy; Geology, Soils, and Topography; Water Resources; Biological Resources; Historic and Cultural Resources; Air Quality; Greenhouse Gas Emissions, Climate Change and Climate Resiliency; Solid Waste, Hazardous Waste, and Hazardous Materials; Human Health and Safety; Utilities and Supporting Infrastructure; Transportation and Traffic; Noise and Vibration; Visual Effects and Community Character; Community Facilities, Open Space, and Recreation; Socioeconomic Conditions; and Environmental Justice.

The analysis of the affected environment in Chapter 3 evaluates the relevant study area for each of the above resources that could be affected by the No Action Alternative or the Preferred Action Alternative. The discussion in each section of Chapter 3 and the appendices defines and describes the study area for each resource.

The environmental analysis in Chapter 3 evaluates the direct and indirect effects of the No Action Alternative and the Preferred Action Alternative. Direct effects are effects that are caused by an action (e.g., the construction and operation of the Proposed Project) and occur at the same time and place as the action. Indirect effects are effects that are caused by the action and are later in time or farther removed in distance from the action but are still reasonably foreseeable. Indirect effects include growth inducing effects (e.g., effects the Proposed Project would generate through increases in population, commercial activity, and development in the surrounding region). For information on the growth inducing effects methodology, see Appendix C. The cumulative effects of the No Action Alternative and Preferred Action Alternative are analyzed in Chapter 4 (Cumulative Effects).

In general, CPO and OCIDA considered the effects on a resource to be significant if they would result in a substantial adverse change to the resource within the resource area. In the following sections, the EIS addresses direct and indirect effects collectively, by resource area, and summarizes whether the effects in each resource area would or would not be significant. The EIS also considers beneficial effects, which may result in positive changes to a resource. The EIS considers adverse and beneficial effects in specific contexts. The No Action Alternative or the Preferred Action Alternative may adversely affect a resource in one area or at one point in time while benefitting the resource in a different area or over a different time period.

The environmental analysis also considers best management practices, which are integral elements of the design of project components that serve to reduce environmental effects, as well as mitigation measures that CPO, OCIDA, or other parties may require Micron to commit to or undertake to avoid, minimize, or mitigate significant adverse effects.

3.1 LAND USE, ZONING, AND PUBLIC POLICY

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative on land use, zoning, and public policy. Land use types include residential, agricultural, commercial, industrial, vacant land, and parks, and are governed by zoning laws and regulations and State and local planning policies.

The Proposed Project would result in changes to land use through the redevelopment of an approximately 1,445-acre area containing primarily vacant land and a small number of residential parcels. This section considers the relationship of these changes to the land use study area and to applicable zoning regulations and planning documents.

3.1.1 Legal and Regulatory Setting

Table 3.1-1 identifies the laws and regulations relevant to the analysis in this section. Appendix D includes the land use, zoning, and public policy methodology and summaries of applicable zoning regulations and relevant public policies.

Table 3.1-1 Legal and Regulatory Setting

Law or Regulation	Description
Federal	
Farmland Protection Policy Act (FPPA), 7 U.S.C. § 4201 *et seq*.	The purpose of the FPPA is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The Natural Resources Conservation Service (NRCS) is responsible under the FPPA for identifying certain high quality agricultural soils as "prime farmland," unique farmland, or farmland of statewide or local importance, and administers a farmland conversion impact rating system. NRCS reviews projects receiving Federal financial assistance to determine whether they must consider alternative sites or adjustments to limit impacts to prime farmland soils or other protected soils.
State	
New York State Eminent Domain Procedure Law (EDPL), NY EDPL § 102 *et seq*.	The New York State EDPL serves as the exclusive procedure for acquiring property through eminent domain in New York State, in cases where the property is unable to be acquired by agreement for voluntary sale by the owner. Key objectives of the EDPL include ensuring just compensation for property rights acquired, facilitating public participation in project planning, considering public use needs, protecting private property owners' interests, and expediting payments.
New York State Agriculture and Markets Law, NY Agri & Mkts L § 305-B.	Section 305-B of the New York State Agriculture and Markets Law requires that an agricultural data statement be provided with any application for a special use permit, site plan approval, use variance, or subdivision approval that requires municipal review and approval when such application affects property within an agricultural district containing a farm operation, or on property with boundaries within 500 feet of a farm operation in an agricultural district.

New York State General Municipal Law (GML), NY GML § 239.	Section 239 of the New York State GML requires the referral of certain proposed city, town, and village planning and zoning actions to the county planning agency or regional planning council for recommendation prior to the local municipality taking a final vote on the proposed action.
Local	
Town of Clay Subdivision and Zoning Codes	The Town of Clay Subdivision Code (Ch. 200 of the Code of the Town of Clay) and the Town of Clay Zoning Code (Ch. 230 of the Code of the Town of Clay) impose zoning restrictions and requirements on development in the Town of Clay.
Town of Cicero Subdivision and Zoning Codes	The Town of Cicero Subdivision Code (Ch. 185 of the Code of the Town of Cicero) and the Town of Cicero Zoning Code (Ch. 210 of the Code of the Town of Cicero) impose zoning restrictions and requirements on development in the Town of Cicero.

3.1.2 Affected Environment

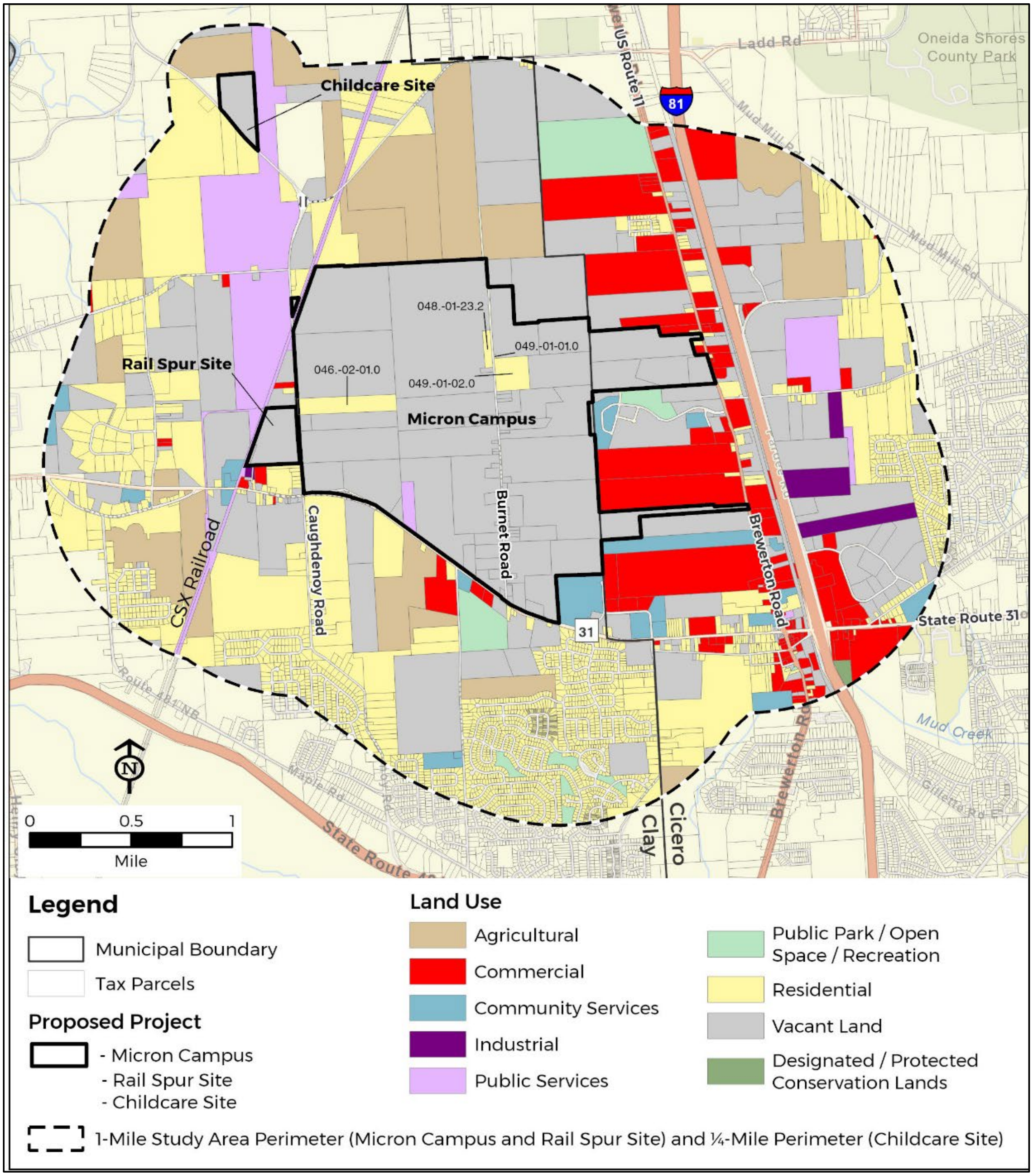
3.1.2.1 Current Land Use

The land use study area encompasses lands within a 1-mile radius of the proposed Micron Campus and Rail Spur Site, given the proposed industrial uses of those sites, and a ¼-mile radius of the Childcare Site, given the proposed uses of that site which are more common to residential areas. For information on the land use study area methodology, see Appendix D-1. The land use study area also includes existing utility properties, easement areas, and rights-of-way where the Connected Actions would occur (see Section 3.1.2.2).[28]

Figure 3.1-1 below shows existing land uses in the land use study area for the proposed Micron Campus, Rail Spur Site, and Childcare Site. Figure 3.1-2 and Table 3.1-2 identify four other announced or planned development projects in the land use study area. This section describes each of these existing and planned uses following the figures and table.

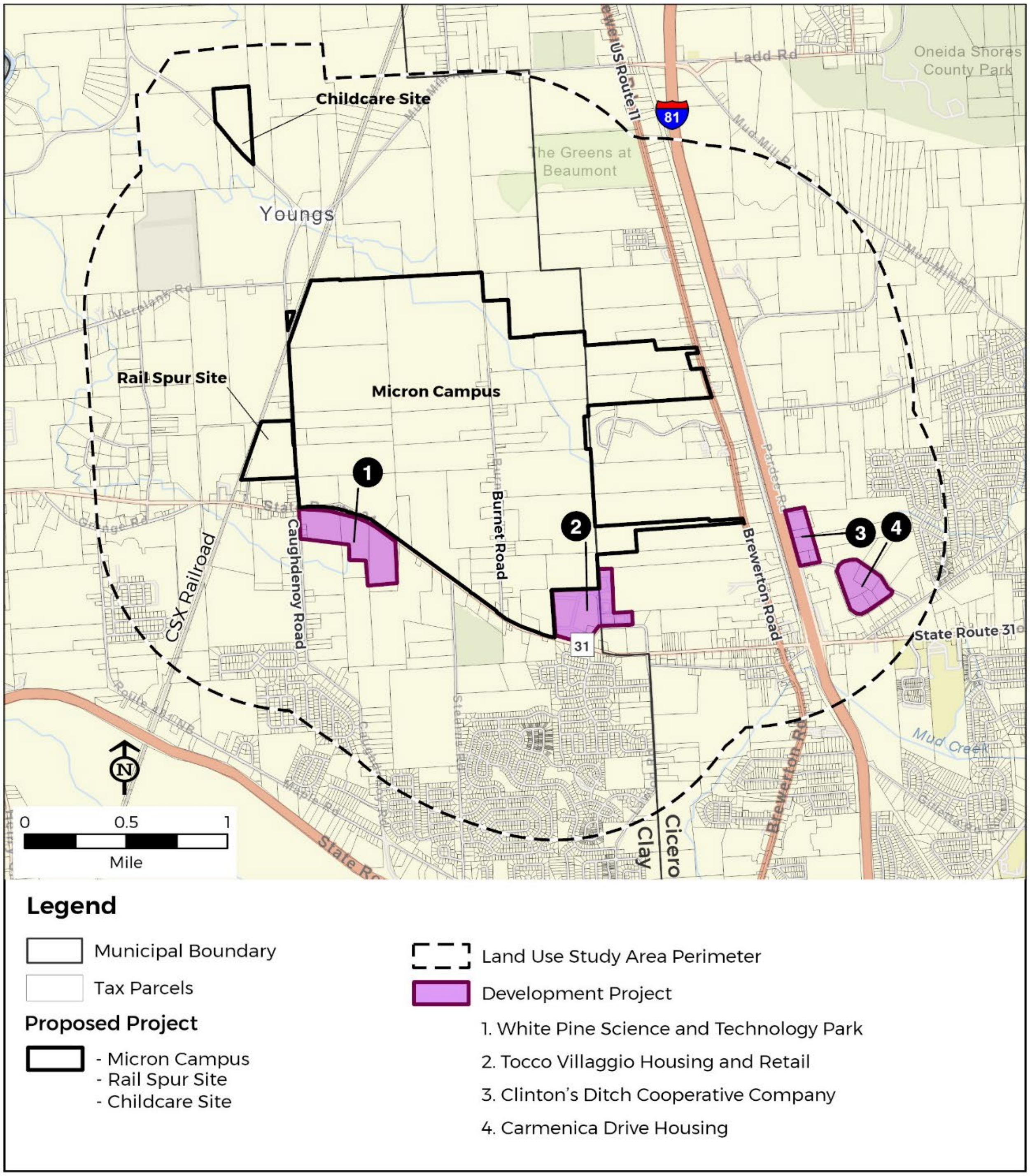
[28] The Proposed Project also would include leased warehouse space in an industrially zoned area within 20 miles of the Micron Campus, but the location has not yet been selected. This section does not evaluate effects of the warehouse space on land use because it would be located outside of the land use study area and would only require use of space within an existing facility.

Figure 3.1-1 Existing Land Uses in Land Use Study Area



Sources: World Street Map (Esri, 2025b): Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, U.S. Geological Survey (USGS), USEPA, National Park Service (NPS), USDA, USFWS. Data source: NYS Office of Information Technology Services, Geospatial Services, Statewide Parcel Map Program, in collaboration with the NYS Department of Taxation and Finance and Office of Real Property Tax Services (ORPTS) (NYS Office of Information Technology Services, 2024a).

Figure 3.1-2 Other Announced or Planned Projects in Land Use Study Area



Sources: World Street Map (Esri, 2025a): Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA.

Table 3.1-2 Other Announced or Planned Projects in Land Use Study Area

No.	Project Name/Location	Description
1	White Pine Science and Technology Park (Clay)	Commercial/Industrial: anticipated development of an approximately 105-acre site to a science and technology park, which could host semiconductor supply chain companies or other industrial and manufacturing companies. OCIDA also is under contract to acquire approximately 100 acres of additional lands, subject to contract due diligence.
2	Tocco Villaggio (Legionnaire Drive, Clay)	Mixed Residential/Commercial: planned approximately 260-unit multi-family housing development with on-site retail spaces.
3	Clinton's Ditch Cooperative Company expansion (8478 Pardee Road, Cicero)	Commercial/Light Industrial: planned expansion of beverage distribution facility to approximately 116,000 sq. ft. warehouse and distribution space, 20,000 sq. ft. truck maintenance space, and 200 parking spaces.
4	Carmenica Drive Housing (Carmenica Drive, Cicero)	Residential: planned approximately 730-unit multi-family housing development.

Sources: NYSDOT; OCDOT; Syracuse Metropolitan Transportation Council; Town of Clay; Town of Cicero; Onondaga County Department of Planning.

Vacant Land

As shown in Figure 3.1-1, the vast majority of the proposed 1,377-acre Micron Campus consists of large parcels of vacant land. The site previously contained residential, agricultural, and commercial uses and structures and a telecommunications tower and electric transmission lines located along NYS Route 31 and Caughdenoy Road.

The residential uses included approximately three dozen former residences located along Burnet Road, a two-lane local road that runs approximately 1.25 miles north of NYS Route 31 to a dead end within the WPCP. OCIDA has acquired all of the properties on the WPCP. The majority of the former residences were removed in 2023 and 2024, although the telecommunications tower and electric transmission lines remain (see Utility/Public Services, below).

The Rail Spur Site would be located on vacant, vegetated land. A small portion of this land previously included structures dating from the 1950s that were removed in the 1980s.

The Childcare Site would be located on vacant land that was previously a residential property including a single-family home and a barn. Micron acquired this property in 2023. The home was vacated in 2024, and the existing structures on the Childcare Site would be removed once Micron obtains required regulatory approvals (see Section 1.4).

Additional large vacant properties are located throughout the land use study area, including a large collection of vacant parcels to the east of I-81.

Residential Land Use

OCIDA owns all parcels on the WPCP. As shown in Figure 3.1-1, four of these parcels still include residential uses: three parcels along Burnet Road (tax parcel IDs 048.-01-23.2, 049.-01-01.0, and 049.-01-02.0) still include vacant single-family homes ; and one parcel along Caughdenoy Road (tax parcel ID 046.-02-01.0)includes a single-family home occupied by an individual through a license agreement.

Outside of the WPCP, the land use study area includes a number of residential land uses, particularly in the Town of Clay to the south and west of the WPCP and east of I-81 in the Town of Cicero. These other residential uses primarily include dense suburban residential subdivision developments clustered along Caughdenoy Road, Stearns Road, and Lawton Road in the Town of Clay and Lakeshore Road in the Town of Cicero.

As shown in Figure 3.1-2 and Table 3.1-2, the land use study area includes two properties planned for multi-unit residential developments: Tocco Villaggio in Clay (mixed with commercial on-site retail) and Carmenica Drive Housing in Cicero.

Agricultural Land Use

The proposed Micron Campus, Rail Spur Site, and Childcare Site do not include properties with active agricultural uses, but portions of these sites were formerly agricultural land, and NRCS has classified most of the soil on the sites as prime farmland (see Section 3.1.2.3).

As shown in Figure 3.1-1, the land use study area outside of the Proposed Project includes several other properties with active agricultural uses, particularly in the Town of Clay immediately to the north of the WPCP and to the west of the proposed Childcare Site.

Commercial Land Use

As shown in Figure 3.1-1, the land use study area includes several commercial properties along the U.S. Route 11/I-81 corridor in the Town of Cicero, with additional commercial properties in the Town of Clay south of the WPCP along NYS Route 31 and immediately southwest of the proposed Rail Spur Site near the intersection of the CSX Railroad and NYS Route 31.

Industrial Land Use

As shown in Figure 3.1-1, the land use study area includes limited existing industrial land uses, primarily manufacturing, light industrial warehouse, and shipping facilities along the U.S. Route 11/I-81 corridor in the Town of Cicero.

As shown in Figure 3.1-2 and Table 3.1-2, a beverage distribution facility near I-81, Clinton's Ditch Cooperative Company, is planning an expansion.

Also as shown in Figure 3.1-2 and Table 3.1-2, OCIDA currently owns an approximately 105-acre site directly south of the WPCP. This site is anticipated to be used for development into a commercial and industrial facility named the White Pine Science and Technology Park, which could host semiconductor science, technology, and supply chain companies or other industrial and manufacturing companies adjacent to the proposed Micron Campus. In addition, OCIDA is under contract to acquire approximately 100 acres of additional lands, subject to contract due diligence.

Utility/Public Services

On the WPCP, high-voltage power lines run east-west on an easement across the northern portion of the property, an OCWA water line is located on the southern part of the property, and a telecommunications tower is located on the southern part of the property near NYS Route 31.

To the west of the WPCP, National Grid operates an electrical substation facility (the Clay Substation) (see Section 3.1.2.2). In addition, CSX Railroad operates a rail line that runs through the western portion of the land use study area, abutting the WPCP and the proposed Rail Spur Site.

Community Services

There are several community services within the land use study area, including a medical office facility and a post office on NYS Route 31 to the east of the WPCP. Several churches are also located along NYS Route 31, including Grace Evangelical Covenant Church located immediately south of the WPCP.

Parks and Open Space

The land use study area includes two public parks in the Town of Clay along the NYS Route 31 corridor (Meltzer Park and the Clay Historical Park), and a private golf course to the north of the WPCP (the Greens at Beaumont). In addition, the privately maintained Snow Owls Snowmobile Trail runs through the proposed Micron Campus and Clay Substation expansion area (see Section 3.14, Community Facilities, Open Space, and Recreation). In the Town of Cicero, to the east of I-81 and south of NYS Route 31, there is also an undeveloped wetland parcel that is designated as State-protected conservation land.

3.1.2.2 Existing Utility Property

Table 3.1-3 lists the existing utility/public service properties, easements, and rights-of-way where utility providers would undertake infrastructure improvements necessary to support the Proposed Project (the proposed Connected Actions summarized in Chapter 2). Although the effects of the Connected Actions are discussed in Section 3.1.3.2, they are identified in Table 3.1-3 with the existing properties they would modify for ease of reference.

Table 3.1-3 Existing Utility Properties and Proposed Improvements (Connected Actions)

Utility	Existing Utility Property	Proposed Improvement
Electrical (National Grid)	Existing utility facility: Clay Substation, Town of Clay (tax parcel 047.-01-12.0) (adjacent to the WPCP across Caughdenoy Road).	Expansion of Clay Substation (by approx. 10 acres).
		New electric transmission lines from Clay Substation to Micron Campus (approx. 1 mile). The transmission lines would connect directly to the Micron Campus and would not be located on any other property.

Utility	Existing Utility Property	Proposed Improvement
Natural Gas (National Grid)	Existing utility facility: GRS 147, Onondaga County (tax parcel 029.-01-13.1).	Upgrades to GRS 147.
	NYS Route 31 ROW; existing easement (previously obtained in 2023-2024) through privately owned parcels and wetland areas, portions of which contain electrical lines, as well as gas, communication, and other utility lines.	New natural gas line from GRS 147 to Micron Campus (approx. 3 miles).
Water Supply (OCWA)	Existing utility facility: Raw Water Pumping Station, City of Oswego (tax parcel 127.58-01-01.2).	Upgrades to Raw Water Pumping Station at Lake Ontario.
	Existing easement and public ROW's.	Raw water transmission main from Raw Water Pumping Station to LOWTP (approx. 2.5 miles).
	Existing utility facility: LOWTP, Town of Oswego (tax parcel 146.00-01-01).	Upgrades to LOWTP.
	Existing easement; includes properties with structures encroaching on easement: Town of Oswego tax parcel 165.19-02-07 (Residential) and Town of Fulton tax parcel 201.11-01-05.03 (Residential).	Expansion of Clear Water Transmission Main from LOWTP to Terminal Campus.
	Existing utility facility: Terminal Campus, Town of Clay (tax parcel 055.-01-07.1).	Upgrades to OCWA Terminal Campus.
	Existing easement; includes properties with structures encroaching on easement (Town of Clay tax parcel 063-01-06.1 (Residential)).	Expansion of Eastern Branch Transmission Main.
	NYS Route 31 ROW.	Water main connection from Eastern Branch Transmission Main to Micron Campus.
Industrial Wastewater (OCDWEP)	Existing utility property: Oak Orchard site, Town of Clay tax parcel 031.-01-03.0)	New IWWTP and water reclamation facility.
	Verplank Road ROW. Existing easement (previously obtained in 2023–2025 on vacant portions of residential, farmland,	Industrial wastewater and reclaimed water conveyance from Micron Campus to new IWWTP at the Oak Orchard site.

Utility	Existing Utility Property	Proposed Improvement
	industrial, and residential / transportation properties). Privately owned parcel acquired by Micron: Town of Clay tax parcel 043.-01-31.1 (Residential). New easement through privately owned parcels (not yet obtained): Town of Clay tax parcels 031.-01-16.1 (Vacant, Non-farmland), 030.-01-01.0 (Vacant, Non-farmland)	
Telecommunications (Fiber)	NYS Route 31 and Caughdenoy Road ROW.	Extension of two existing fiber optic lines.

Notes: The Clay Substation is located adjacent to the WPCP across Caughdenoy Road; transmission lines would connect directly to the proposed Micron Campus and would not be located on any other property (see Section 2.1.5).

3.1.2.3 Protected Farmland

As noted in Section 3.1.1, NRCS regulates Federal or Federally-financed activities that may contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. NRCS classifies certain high quality agricultural soils as prime farmland, unique farmland, or farmland of statewide or local importance, which may require NRCS review before conversion.

As shown in Table 3.1-4 and Figure 3.1-3 through Figure 3.1-6, NRCS has classified most of the soil at the proposed Micron Campus site (1,264 out of 1,377 acres), all of the soil on the proposed Rail Spur Site (approximately 38 acres) and Childcare Site (approximately 31 acres), and portions of the soil at the Connected Action sites as prime farmland or farmland of statewide importance (for additional discussion of soils, see Section 3.2 (Geology, Soils, and Topography)). Although the effects of the Proposed Project and Connected Actions on protected farmland are discussed in Section 3.1.3.2, the protected farmland acreages that would be affected are listed in Table 3.1-4 for ease of reference.

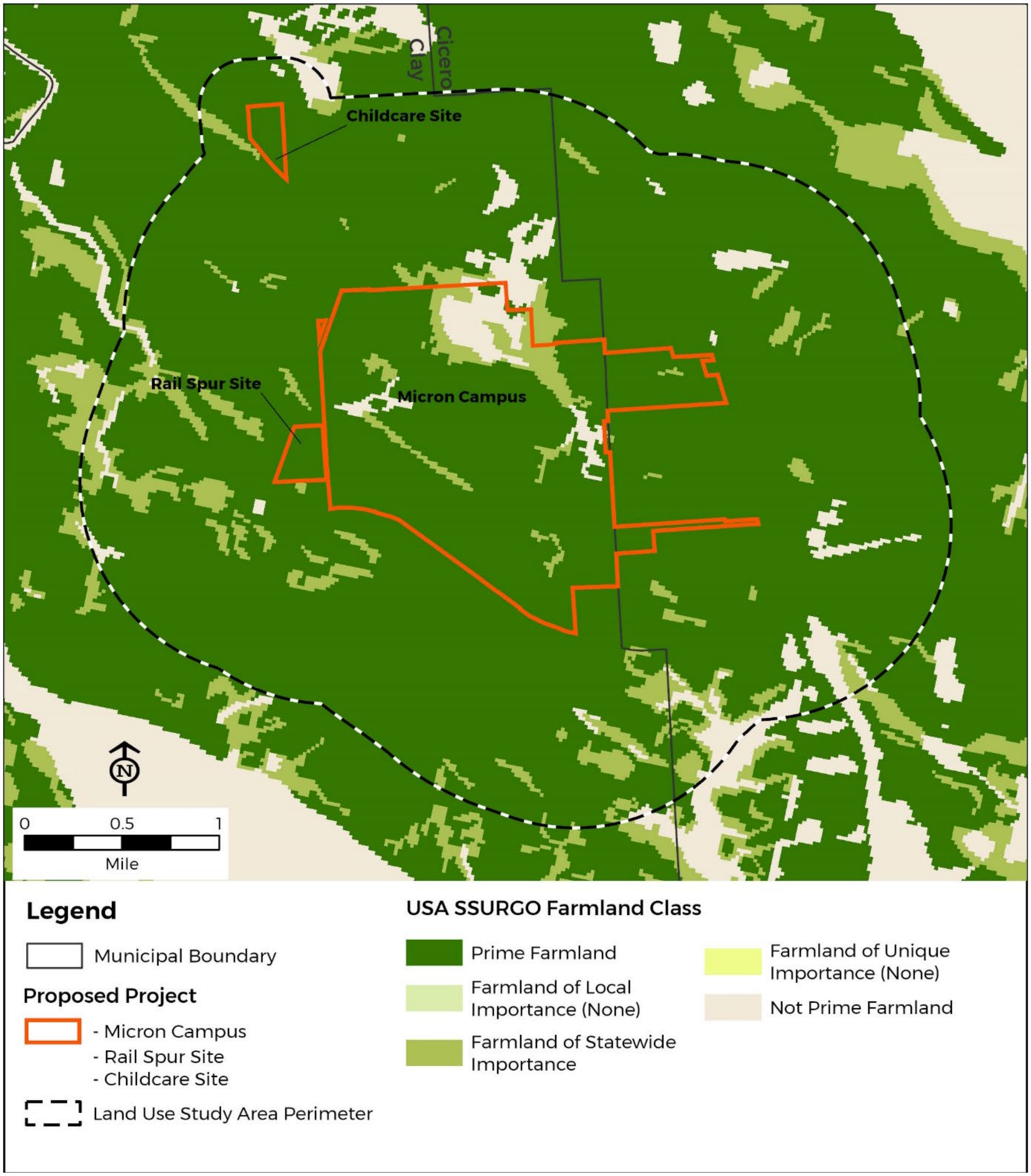
In addition, as noted in Section 3.1.1, New York State designates certain areas of farm operations or viable agricultural land as agricultural districts under the Agriculture and Markets Law. Projects in agricultural districts with a farm operation, or on properties within 500 feet of a farm operation in an agricultural district, may be subject to additional State review. As shown in Figure 3.1-7, although the proposed Micron Campus and Rail Spur Site are not located in agricultural districts, the Childcare Site is in an agricultural district, and there are additional agricultural districts immediately north of the WPCP and west of the Childcare Site. As shown in Figure 3.1-8 and Figure 3.1-9, the OCWA water transmission expansion is the only Connected Action located in an agricultural district. Specifically, a portion of the OCWA water supply transmission mains extends through an agricultural district adjacent to the LOWTP.

Table 3.1-4 Protected Farmland

Proposed Project or Connected Action	Total Project Area (Acres)	Protected Farmland (Acres)	Protected Farmland Percentage
Micron Campus	1,377	1,264	91.9%
Rail Spur Site	38	38	100%
Childcare Site	31	31	100%
National Grid Clay Substation Expansion	42	42	100%
National Grid GRS 147 Upgrades	1	1	100%
National Grid natural gas line from GRS 147 to Micron Campus	32	32	100%
OCWA Lake Ontario Raw Water Pumping Station Upgrades	<1	0	0%
OCWA water supply lines	345	281	81.4%
OCWA LOWTP upgrades	75	26	34.7%
OCWA Terminal Campus upgrades	43	20	46.7%
New OCDWEP IWWTP at Oak Orchard site	77	62	80.8%
OCDWEP industrial wastewater conveyance	22	18	83.8%
Extension of fiber optic lines	2	2	100%
Total	2,084	1,818	87.3%

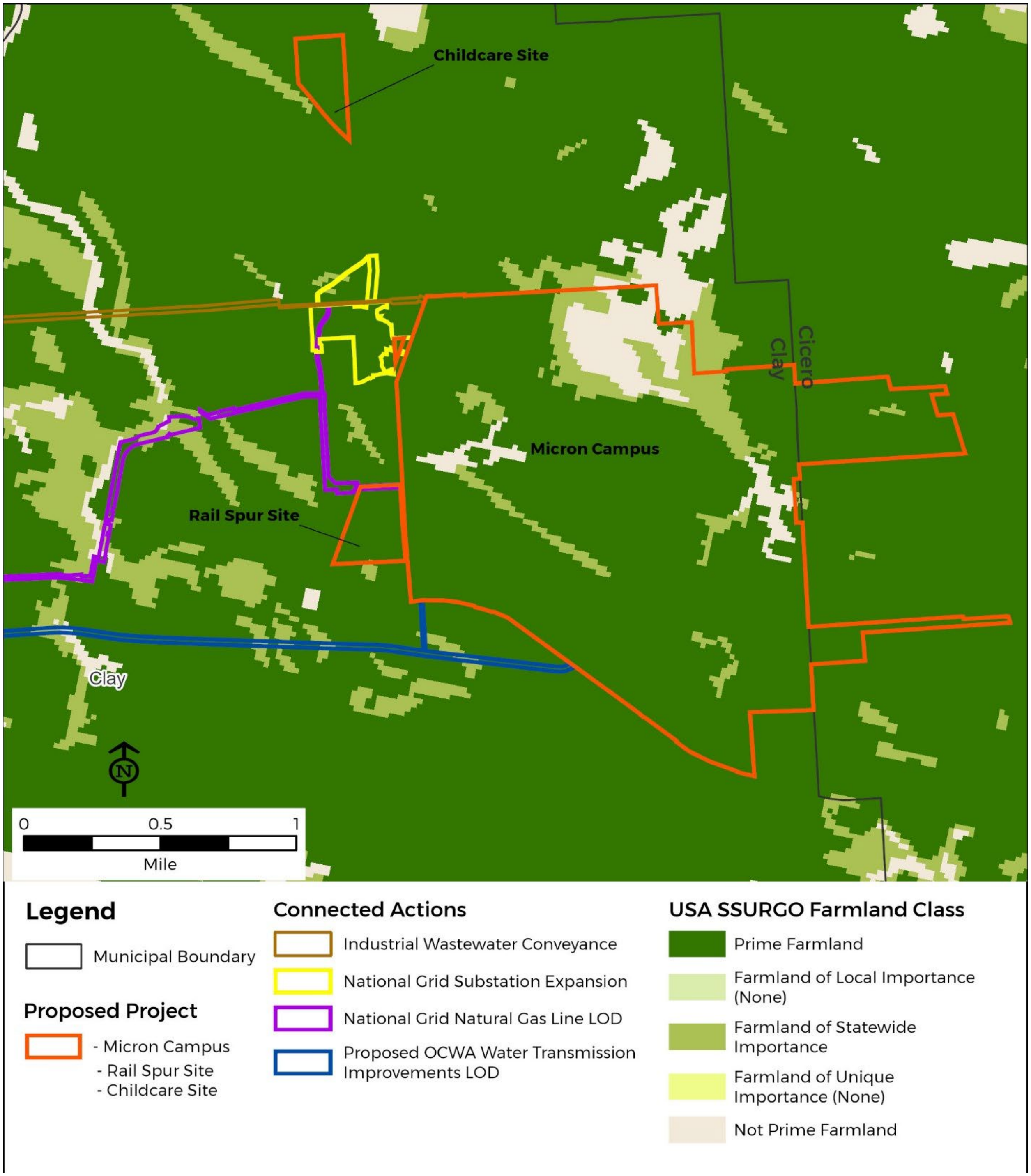
Source: NRCS Soil Survey Geographic (SSURGO) database for Onondaga and Oswego Counties, New York (NRCS, n.d.-a).

Figure 3.1-3 Farmland Classes within Land Use Study Area



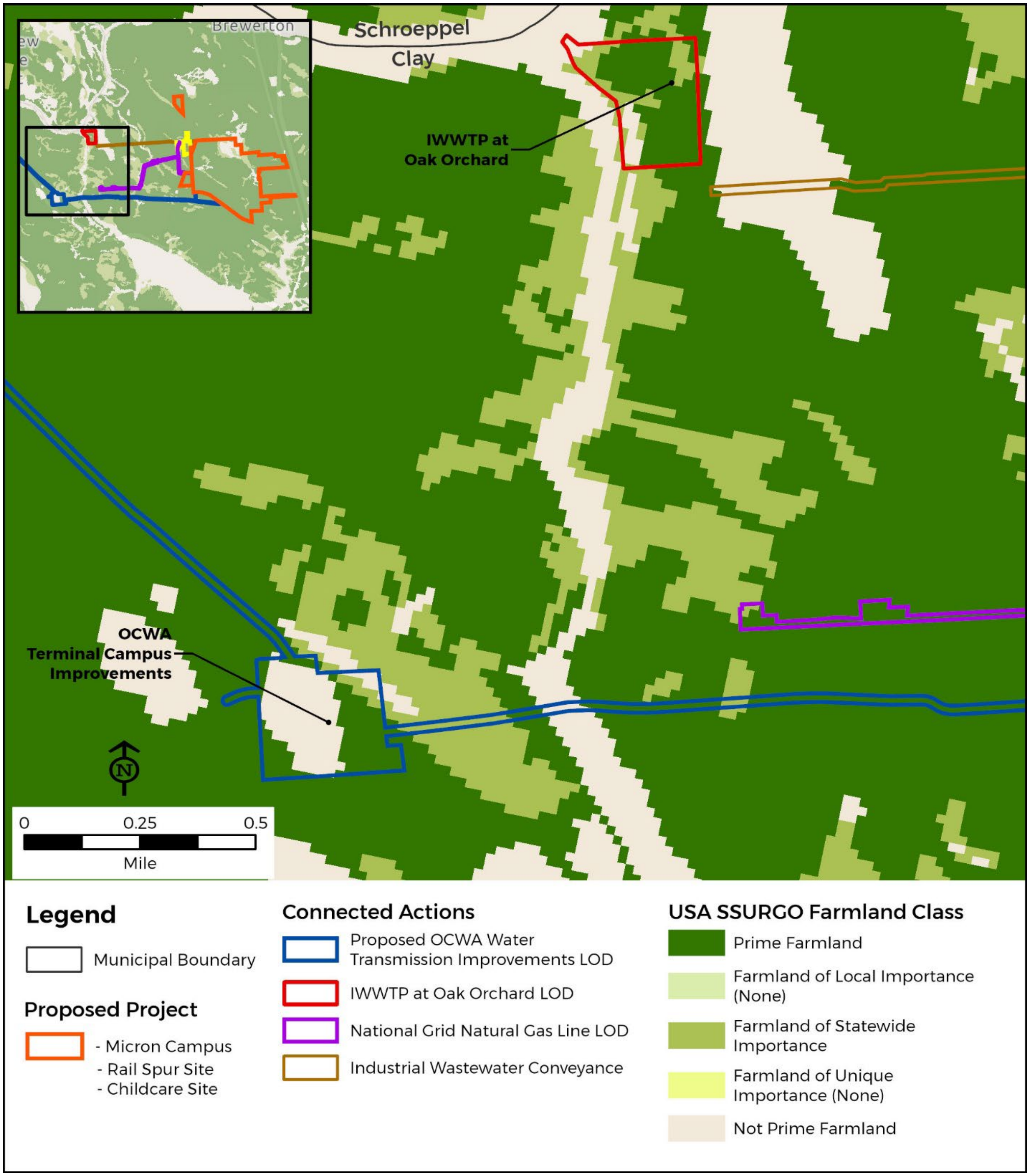
Sources: USA SSURGO – Farmland Class (NRCS, n.d.-b).

Figure 3.1-4 Farmland Classes at Proposed Project and Connected Action Locations



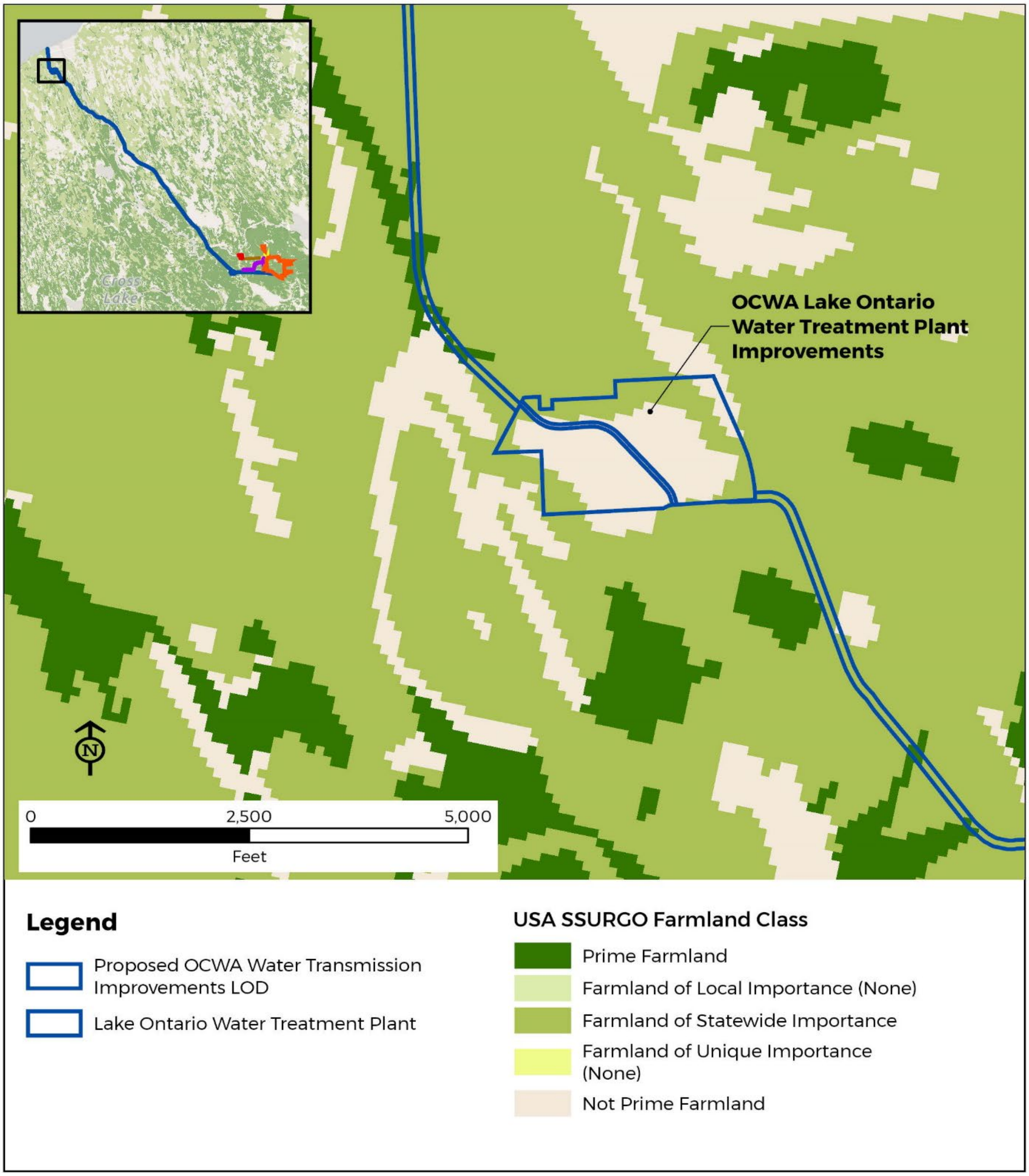
Sources: USA SSURGO – Farmland Class (NRCS, n.d.-b).

Figure 3.1-5 Farmland Classes at Oak Orchard Site and OCWA Terminal Campus



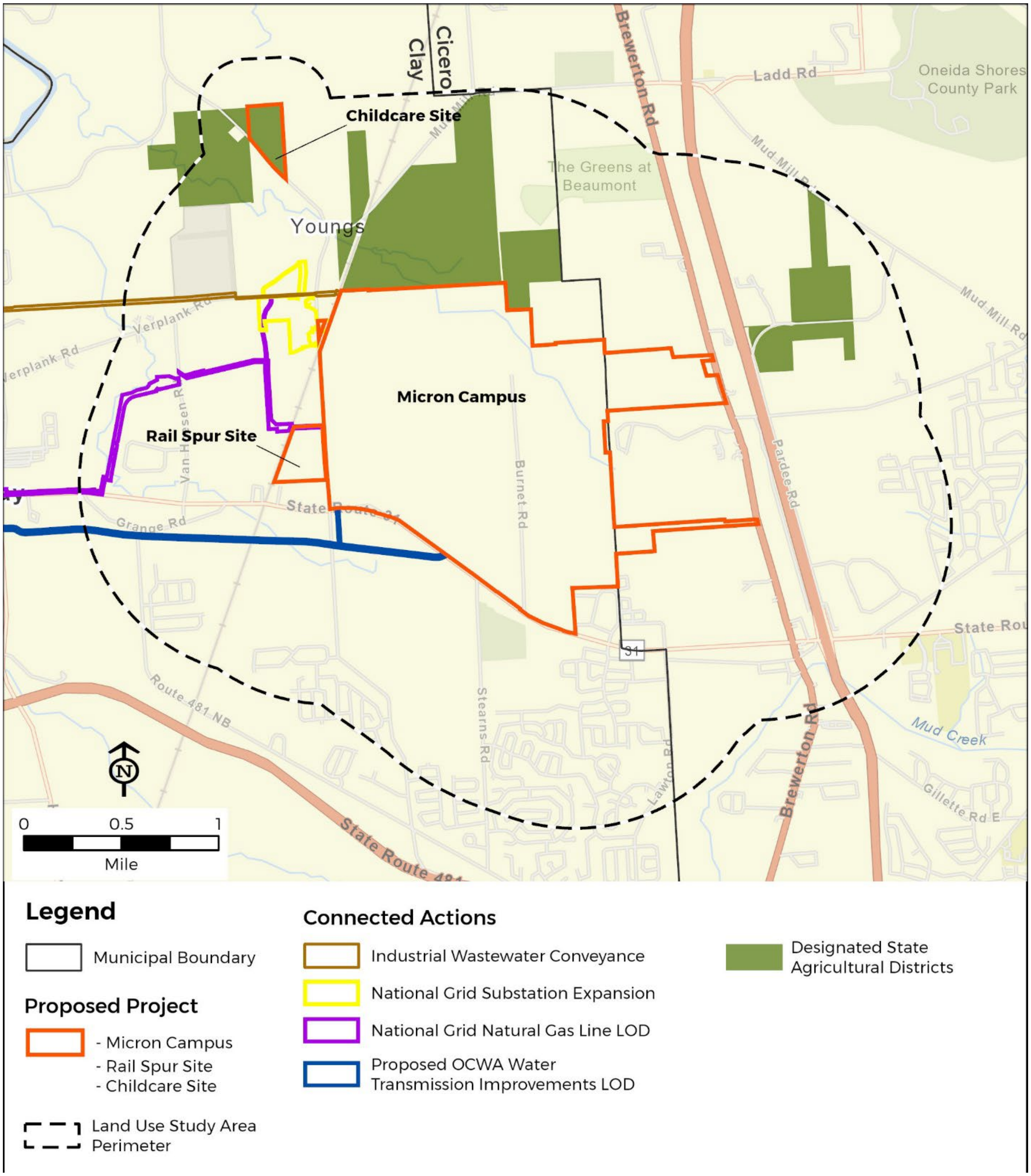
Sources: USA SSURGO – Farmland Class (NRCS, n.d.-b).

Figure 3.1-6 Farmland Classes at OCWA Lake Ontario Water Treatment Plant



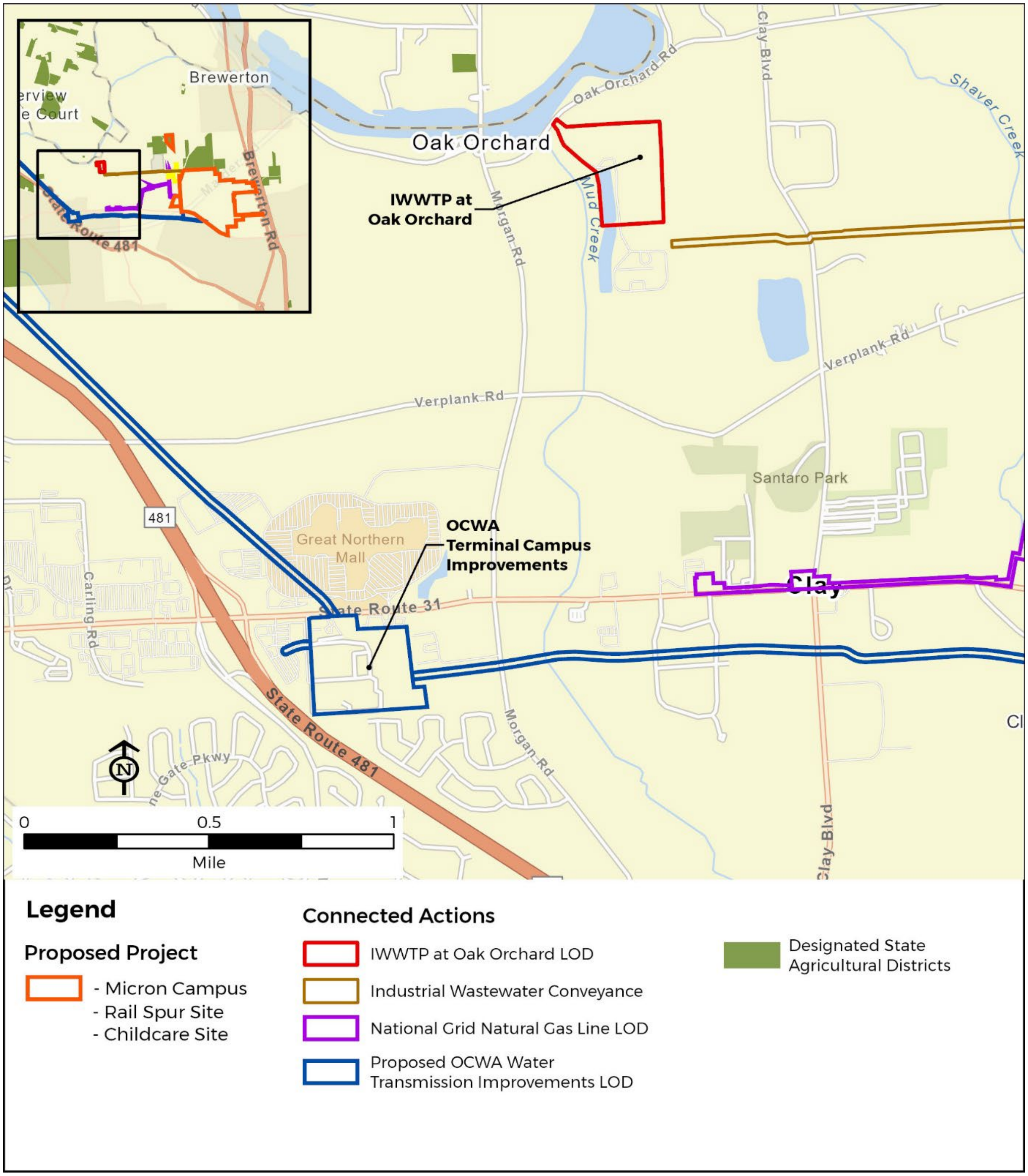
Sources: USA SSURGO – Farmland Class (NRCS, n.d.-b).

Figure 3.1-7 Agricultural Districts within Land Use Study Area



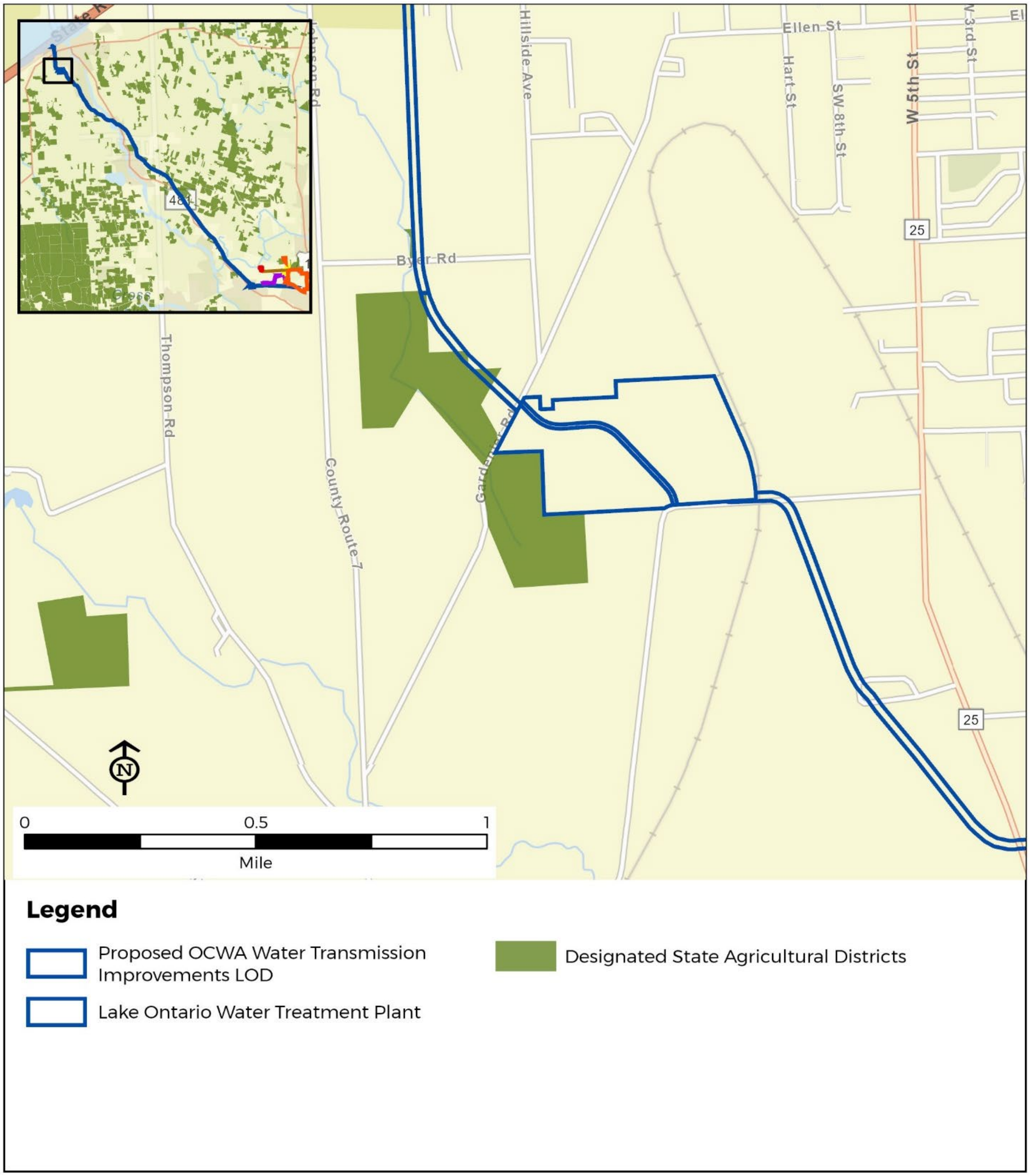
Source: Cornell Institute for Resource Information Sciences (Cornell IRIS) & NYS Department of Agriculture and Markets (2024).

Figure 3.1-8 Agricultural Districts at Oak Orchard Site and OCWA Terminal Campus



Source: Cornell IRIS& NYS Department of Agriculture and Markets (2024).

Figure 3.1-9 Agricultural Districts at OCWA Lake Ontario Water Treatment Plant



Source: Cornell IRIS & NYS Department of Agriculture and Markets (2024).

3.1.2.4 Current Zoning

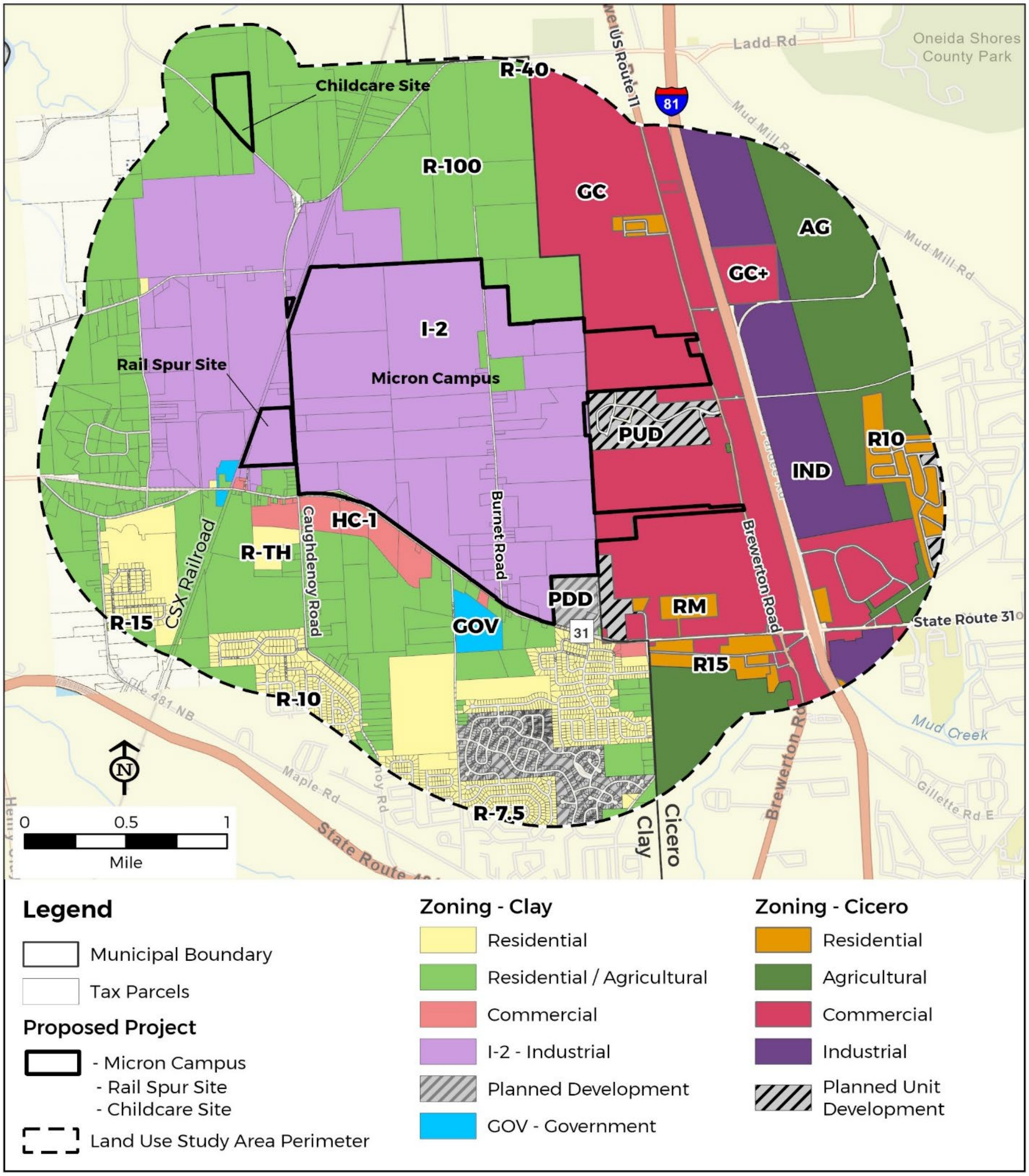
Figure 3.1-10 and Table 3.1-5 below show the current zoning districts in the land use study area. Table 3.1-6 shows the current zoning districts for the existing utility properties where the proposed Connected Actions would occur. Appendix D-2 includes a summary of the zoning regulations that would be applicable to the Proposed Project.

As shown in Table 3.1-5, the vast majority of the WPCP is zoned Industrial (I-2) under the Town of Clay Zoning Code, except for the three parcels along Burnet Road with vacant single-family homes which are zoned Residential/Agricultural (RA-100).[29]

Two portions of the WPCP are in the Town of Cicero General Commercial (GC) district and Highway Overlay district abutting I-81. The proposed Rail Spur Site is in the Town of Clay I-2 district that includes the WPCP, and the proposed Childcare Site is in an RA-100 district.

[29] Although the majority of the WPCP has been rezoned to the I-2 district, including a rezoning approved by the Town of Clay in 2023, the three parcels that remain in the RA-100 district were not included in the prior rezonings because they were not owned by OCIDA at that time. The parcel along Caughdenoy Road with a single-family home occupied by a resident who retains a life estate (see Section 3.1.2.1) is owned by OCIDA and was rezoned to I-2 prior to 2023.

Figure 3.1-10 Current Zoning in Land Use Study Area



Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA; Data sources: Town of Clay Planning Board (n.d.); Town of Cicero (2023). Note: the zoning districts in the Town of Clay in Figure 3.1-10 do not reflect the official zoning map available on the Town of Clay website, https://townofclay.org/forms-permits-info/zoning-codes-map, but reflect the current zoning based on information provided by the Town of Clay Planning Board.

Table 3.1-5 Land Use Study Area Zoning District Descriptions

District	Type	Description
Town of Clay		
I-2	Industrial	Heavy commercial and/or industrial activities, including manufacturing and processing uses that may have exterior activity, tend to be larger in scale, and may have more objectionable characteristics requiring more monitoring and mitigation measures.
RA-100	Residential / Agricultural	Agricultural activities, low-density family dwellings, and supportive non-residential development.
R-40	One-Family Residential	Lower density, single-family uses and supportive non-residential development in areas that are not served by public sewers.
R-15	One-Family Residential	Moderate density, single-family uses and supportive non-residential development in areas served by both public water and sewer.
R-10	One-Family Residential	Higher density, single-family uses and supportive non-residential development in areas served by both public water and sewer.
R-7.5	One-Family Residential	Preservation of existing high-density, single-family uses and supportive non-residential development in areas served by both public water and sewer.
R-TH	Townhouse Residential	Residential and supportive non-residential development in townhouse arrangements in areas served by both public water and sewer.
GOV	Government	No applicable zoning regulations, limited to government-controlled land.
HC-1	Highway Commercial	Commercial uses in moderately concentrated business areas, generally not immediately adjacent to residential neighborhoods.
NC-1	Neighborhood Commercial	Commercial uses located near residential neighborhoods, compatible with nearby residential areas.
PDD	Planned Development District	Special planning district allowing for a variety of land uses and a flexible arrangement of lots, structures, and land uses in a well-planned and coordinated design, with continuous Town involvement in project planning and development.
Highway Overlay	Special District	Special district applying to lots adjacent to or abutting designated highways; imposes dimensional controls in addition to underlying zoning district requirements.
Town of Cicero		
GC	General Commercial	Medium-sized commercial uses, generally located on county or State highways.
GC+	General Commercial Plus	Commercial and light industrial uses.
PUD	Planned Unit Development	Special planning district for developments that undergo special review and approval procedures.

RM	Multiple Residential	Single-family, two-family, and townhouse residential uses.
R15	Residential	Single-family residential uses with a minimum lot area of 15,000 sq. ft.
R20	Residential	Single-family residential uses with a minimum lot area of 20,000 sq. ft.
AG	Agricultural	Agricultural and single-family residential uses.
IND	Industrial	Manufacturing and processing uses generally located on county, State, or Federal highways.

Sources: Town of Clay Zoning Code (Town of Clay Department of Planning and Development, 2020); Town of Cicero Zoning Code (Town of Cicero Department of Zoning and Planning, n.d.).

Table 3.1-6 Existing Utility Property Zoning

Existing Utility Property	Location	District
National Grid Clay Substation	Town of Clay, tax parcel 047.-01-12.0	Industrial (I-2)
National Grid GRS 147	Onondaga County, tax parcel 029.-01-13.1	Residential/Agricultural (RA-100)
OCWA LOWTP	Town of Oswego, tax parcel 146.00-01-01	Residential-3
OCWA Raw Water Pumping Station at Lake Ontario	City of Oswego, tax parcel 127.58-01-01.2	Suburban Residential (SR)
OCWA Terminal Campus	Town of Clay, tax parcel 055.-01-07.1	Government (GOV)
OCDWEP Oak Orchard Site	Town of Clay, tax parcel 031.-01-03.0	Government (GOV)

Note: Table 3.1-6 does not include the easements and rights-of-way that would be needed for the Connected Actions because zoning regulations generally do not apply to construction of new utility lines in such areas.

3.1.2.5 Public Policy

The State and local land use and economic development policies relevant to activities in the land use study area include the Onondaga County Comprehensive Plan, the Syracuse Metropolitan Transportation Council (SMTC) 2050 Long Range Transportation Plan 2020 Update, the Town of Clay Northern Land Use Study, the draft Town of Cicero Comprehensive Plan, and the New York State Green CHIPS Program. Appendix D-3 includes detailed summaries of these policies.

3.1.3 Environmental Consequences

3.1.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain additional easements for the Connected Actions. Associated development on protected farmland would not occur. Other planned development projects would continue to follow general development patterns in the area.

The Town of Clay Town Board anticipates retaining the I-2 zoning district on the majority of the WPCP to promote its industrial use and establish a major employment center. OCIDA would pursue a zoning amendment to rezone the three WPCP parcels currently zoned RA-100 to I-2, consistent with intended future development of the WPCP with an industrial use.

The public policy documents described in Appendix D-3 would continue to guide development and zoning in the Towns of Clay and Cicero, Onondaga County, and throughout New York State. The State, the County, and the Town of Clay would continue to pursue the goals of creating economic development opportunities and locating employment centers at optimal locations, such as the WPCP. However, without the Proposed Project, many of the policy objectives outlined by the County and the Towns of Clay and Cicero, particularly those related to economic development, would remain unmet. It is anticipated that the Town of Cicero draft Comprehensive Plan would still be adopted.

Therefore, the No Action Alternative would not result in any adverse effects on land use or zoning, but beneficial effects related to economic development policies would not occur.

3.1.3.2 Preferred Action Alternative

Construction Effects

The vast majority of the land where construction of the Micron Campus, Rail Spur Site, and Childcare Site would occur is currently vacant land, except for the four parcels on the WPCP with residential uses and the parcels with utilities (see Section 3.1.2.1). Construction of the Proposed Project would require rezoning of the remaining residential parcels along Burnet Road to I-2 and removal of the existing structures on the WPCP (the four remaining single-family homes on Burnet Road and Caughdenoy Road) and the Childcare Site (the former single-family home and barn). The existing high-power transmission lines and telecommunications tower would remain on the WPCP, while the existing OCWA water line would be relocated on the WPCP site.

Construction of the proposed Connected Actions would occur primarily at existing utility properties (the National Grid Clay Substation, the OCDWEP Oak Orchard site, and the OCWA LOWTP) and in existing easement areas and rights-of-way (see Section 3.1.2.2). Construction of the new OCDWEP industrial wastewater conveyance system would occur in a new easement area running through portions of vacant land and farmland on the parcels between the Oak Orchard site and the Verplank Road ROW.

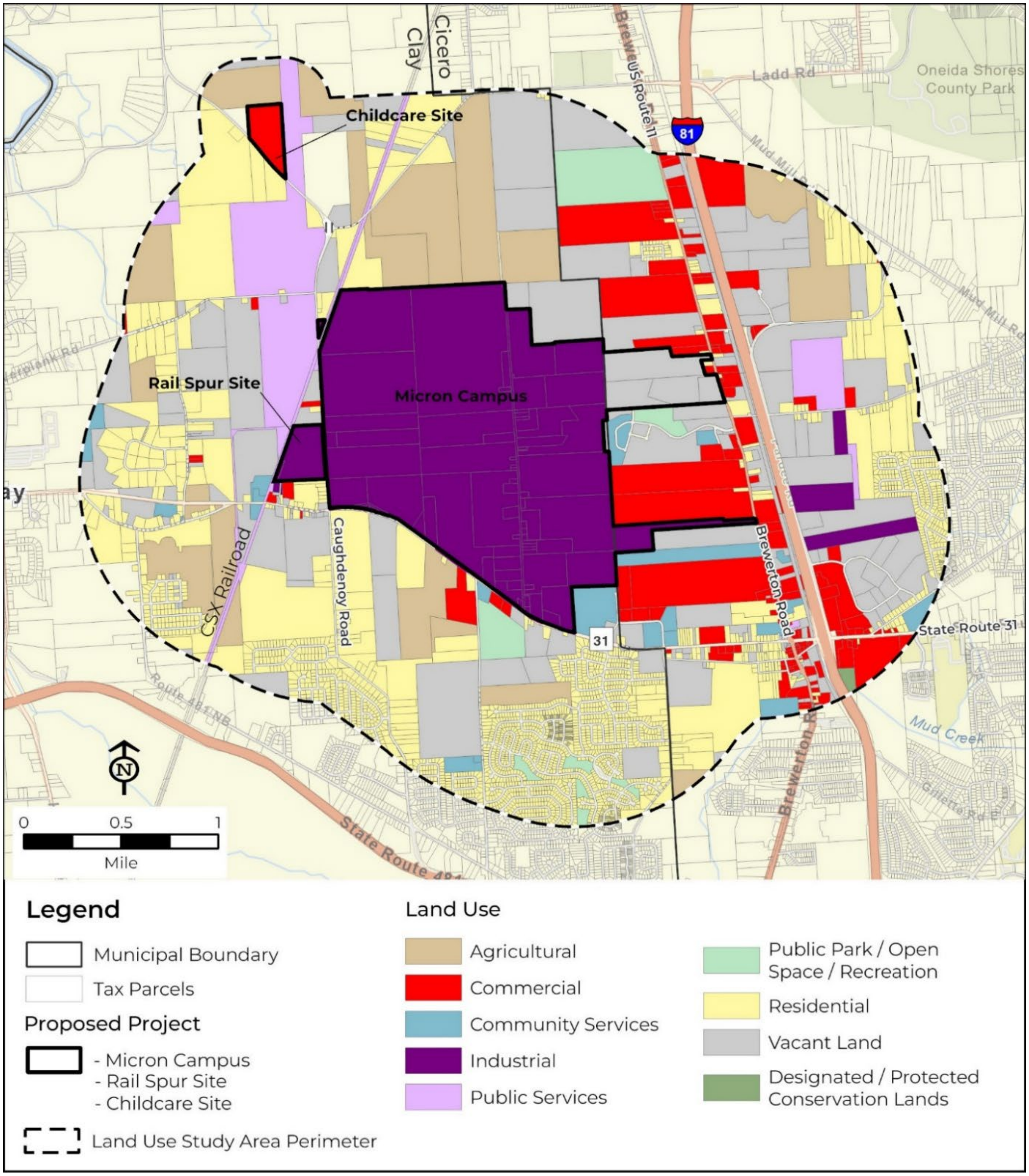
Although the Proposed Project would convert existing vacant land and residential land uses to industrial use, on the whole, construction is anticipated to occur over a 16-year timeframe and would be consistent with applicable zoning and public policies. Therefore, although the Preferred Action Alternative would result in significant adverse construction effects in other resource areas—see Sections 3.3 (Water Resources), 3.4 (Biological Resources), 3.11 (Transportation and Traffic), and 3.12 (Noise and Vibration)—it would not result in significant adverse effects on land use from construction activities. Additional land use, farmland, zoning, and public policy considerations are discussed below under Operational Effects and Growth Inducing Effects.

Operational Effects

Land Use Changes

Under the Preferred Action Alternative, at full build-out, the Micron Campus, Rail Spur Site, and Childcare Site would replace existing vacant land and limited residential uses (see Figure 3.1-1) with industrial and commercial uses. Figure 3.1-11 below shows the anticipated land use changes due to the Proposed Project.

Figure 3.1-11 Land Use Changes Due to the Proposed Project



Sources: World Street Map (Esri, 2025b); Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA. Notes: While not specifically being developed with an industrial use, the "South Finger" parcel in the Town of Cicero would accommodate the proposed access road from U.S. Route 11 to the Micron Campus. This parcel is shown in the land use map as having an industrial use, as the access road would serve as an accessory connection to the proposed industrial facility on the Micron Campus. The underlying zoning of the South Finger parcel will remain General Commercial (GC), and the proposed access road is a permitted use in the GC zone.

Construction of the Micron Campus would involve the removal of Burnet Road (which reaches a dead end in the campus).

The build-out of the Micron Campus, which would be subject to site plan approvals from the Town of Clay Planning Board (discussed below under Zoning Changes), would introduce industrial land uses and associated structures and improvements generally consistent with the I-2 zoning district and OCIDA's intended use for the WPCP as an industrial park and employment center. As part of the build-out, Micron would request a zoning amendment from the Town of Clay Town Board to establish uniform industrial (I-2) zoning across the campus (also discussed under Zoning Changes). The development of the campus would remove the four remaining single-family homes along Burnet Road and Caughdenoy Road, which would change the residential land use of those parcels. Further development of the campus would remove Burnet Road and create new access roads and driveways leading to the manufacturing facility from NYS Route 31, U.S. Route 11, and Caughdenoy Road. These structures and improvements, including the manufacturing facility, would occupy approximately 984 acres out of the total 1,377-acre Micron Campus.

Micron's site plan application to the Town of Clay Planning Board would include measures to mitigate potential effects on the character of adjacent residential areas, generally located to the south of the WPCP along NYS Route 31. The portions of the Micron Campus not occupied by the manufacturing facility or related structures would remain essentially undeveloped, with vegetated areas to provide visual buffering and maintain a natural appearance. The vegetated areas would include large setbacks and landscaped areas, particularly between the manufacturing facility and the NYS Route 31 corridor, to avoid or minimize potential effects on the existing character of the corridor and adjacent residential areas. Additional mitigation measures are discussed in Sections 3.11 (Transportation and Traffic), 3.12 (Noise and Vibration), and 3.13 (Visual Effects and Community Character). The completed campus would be located on a rural edge of a commercial corridor, in proximity to commercial land uses along U.S. Route 11 and I-81.

The Proposed Project would replace the vacant land on the Rail Spur Site with industrial land use (the rail spur facility) and the vacant land on the Childcare Site (which formerly included residential and agricultural land uses) with commercial land uses (the childcare center, healthcare center, and recreation center) and access roads. The Childcare Site facilities would require special use permits from the Town of Clay Planning Board (discussed under Zoning Changes).

The Connected Actions would not result in land use changes except with respect to OCDWEP's build-out of the wastewater conveyance system from the new IWWTP at the Oak Orchard site to the Micron Campus within an industrial wastewater conveyance easement. This easement currently contains ten properties. The conveyance system would require a change in use and demolition of existing structures on one of the properties, a privately owned residential parcel previously acquired by Micron (see Table 3.1-3). Micron also has secured easements with the owners of seven of the other properties. Easements on these seven properties and on the two remaining properties would not require demolition, relocation, or movement of any existing structures or change the current use of the property outside the easement area. However, if agreements could not be reached with the owners of the remaining two properties, OCIDA would move to acquire the properties by eminent domain under the New York State EDPL, and the owners would receive just compensation.

The other Connected Actions would all occur on existing utility property or in existing and previously obtained rights-of-way and easement corridors. Some improvements, such as the National Grid Clay Substation expansion and GRS 147 upgrades, and the new IWWTP, would involve construction of new structures on vacant portions of existing utility properties, but would continue the current use of those properties. Construction of the natural gas line from National Grid GRS 147 to the Micron Campus would occur entirely within a ROW and existing easement running through several privately owned parcels and wetland areas, a portion of which currently contains other utility infrastructure. Construction of the gas line would not require demolition, relocation, or movement of any existing structures or change the current use of the properties outside of the easement area, including uses on any of the private parcels.

Construction of the OCWA water supply line improvements would occur in an existing easement but would require removal of structures encroaching on the easement on several properties, which generally include accessory structures on residential properties (e.g., sheds, an in-ground pool). OCWA would work with the owners of these properties to verify encroachment extents and avoid the encroaching structures through pipeline design or easement modifications where feasible, but would otherwise require the owners to remove the structures.

In sum, the Proposed Project would replace existing vacant land and limited residential uses with industrial and commercial uses, subject to applicable local rezoning processes and site plan approvals. Although, as noted above, the Proposed Project would not result in significant adverse effects on land use from construction activities, the completion and operation of the Proposed Project would represent a significant direct change to existing land use. However, these changes would still be consistent with the I-2 zoning of the WPCP. The Connected Actions would not result in land use changes except for certain changes to properties required for the wastewater conveyance system build-out. The Connected Actions would potentially require OCIDA to obtain easements on certain properties by eminent domain under the EDPL, but these easements would not change the current use of the properties outside of the easement area. Indirect effects on land use outside of these sites are discussed further below under Growth Inducing Effects.

Farmland Conversion

As shown in Section 3.1.2.3, Table 3.1-4, NRCS has classified most of the soil in areas that would be occupied by the Proposed Project and portions of the soil that would be occupied by the Connected Actions as prime farmland or farmland of statewide importance. NRCS administers a farmland conversion impact rating system that produces a total score based on the relative value of farmland to be converted and affected area site and soil characteristics. If the score is greater than or equal to 160, alternative sites or adjustments to project extents must be considered to limit impacts on protected farmland soils. Micron submitted draft farmland conversion impact rating forms for the Proposed Project and Connected Action sites to NRCS in November 2024. NRCS subsequently conducted a land evaluation and site assessment and determined by letter dated December 5, 2024, that several Proposed Project and Connected Action components would be exempt from FPPA provisions because they would occur in existing urbanized areas, utility corridors, rights-of-way, or already converted areas. Following the NRCS assessment, CPO completed the rating forms, which resulted in scores below 160 for all sites. Therefore, the Preferred Action Alternative would not require consideration of alternative sites or project adjustments, and no further action under the FPPA would be necessary. Appendix D-4 includes copies of the farmland conversion impact rating forms and the NRCS letter.

As noted in Section 3.1.1, the New York State Agriculture and Markets Law requires the preparation of an agricultural data statement in connection with applications for municipal special use permits, site plan or subdivision approvals, or use variances for property within an agricultural district containing a farm operation, or on property with boundaries within 500 feet of a farm operation in an agricultural district. As noted in Section 3.1.2.3, the Childcare Site would be located in an agricultural district, and a portion of the OCWA water supply transmission mains would extend through an agricultural district. Other agricultural districts are located immediately to the north of the proposed Micron Campus, to the west of the proposed Childcare Site, and to the west of the OCWA LOWTP. To comply with Article 25-AA of the New York State Agricultural and Markets Law, Micron and the agencies responsible for the Connected Actions would be required to follow its applicable requirements and notification procedures.[30]

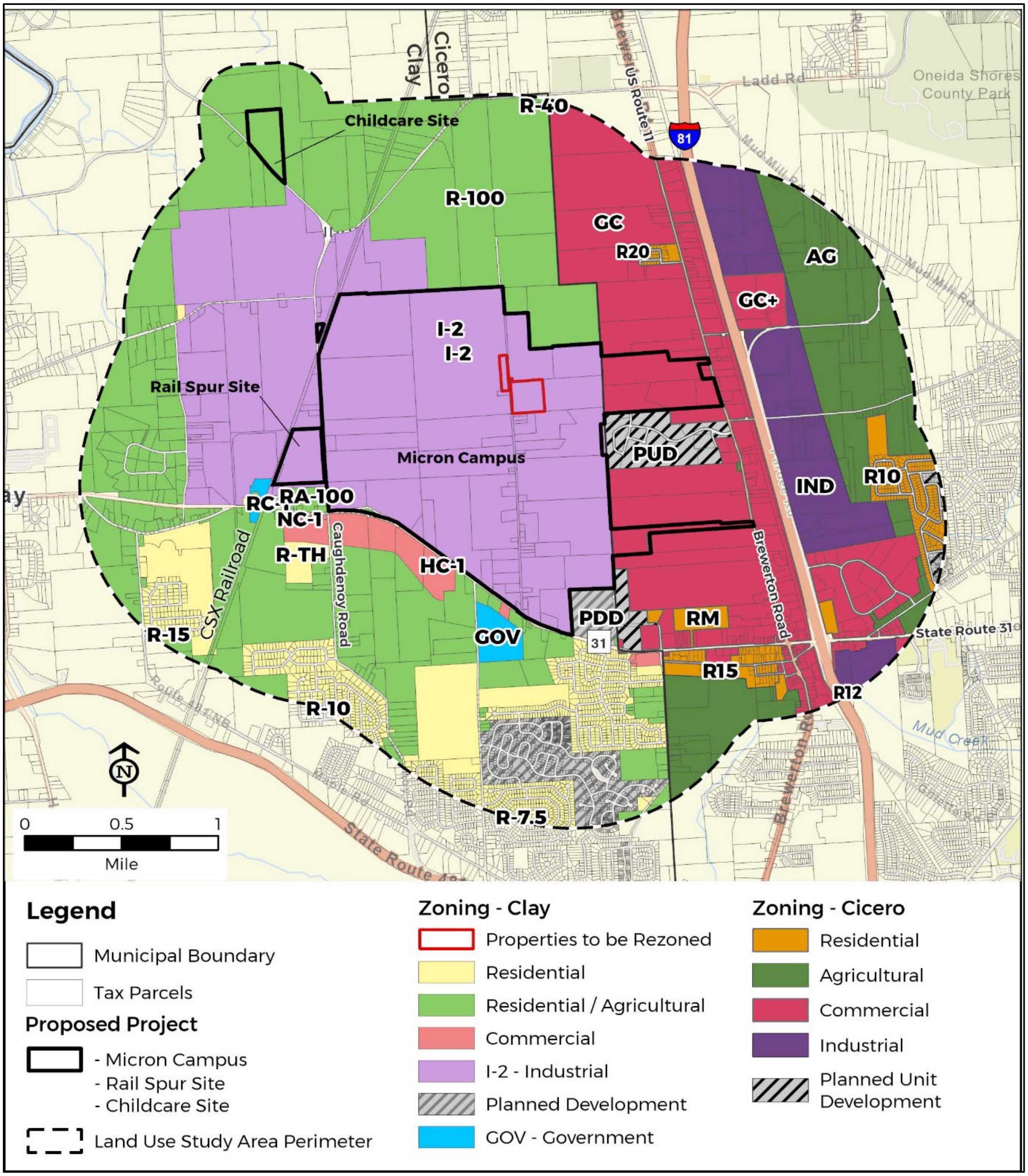
The Proposed Project would directly and indirectly convert a total of 1,043.2 acres of protected farmland to industrial and commercial uses: 975 out of 1,276 acres of prime farmland and farmland of statewide importance on the Micron Campus, 38 acres of prime farmland on the Rail Spur Site, and 31 acres of prime farmland on the Childcare Site. However, the Micron Campus and Rail Spur Site would be developed on primarily vacant land within the Clay I-2 zoning district, which was created to facilitate industrial uses, and it is unlikely these properties would be re-used for farming. The Childcare Site formerly contained agricultural uses but has since been vacated and is not currently used for farming. The Connected Actions involving improvements to existing utility facilities would only occur on properties which are in designated urban areas or do not currently contain farming activities. The Connected Actions involving new linear infrastructure, including construction of the industrial wastewater conveyance system, would be developed on vacant land within properties that are considered prime farmland, but these activities would primarily occur in underground utility easements within small, limited portions of these properties, and would be unlikely to affect any long-term farming operations. Therefore, because the Proposed Project and Connected Actions would have limited to no effect on any existing or likely future agricultural uses on the properties where they would be built, farmland conversion under the Preferred Action Alternative would not result in any significant adverse direct effects on agricultural land uses. Indirect farmland conversion effects in other locations are discussed further below under Growth Inducing Effects.

Zoning Changes

As shown in Figure 3.1-12 below, the only zoning district change under the Preferred Action Alternative relative to the current zoning in the land use study area (see Figure 3.1-10) would be the rezoning of the three parcels along Burnet Road with single-family homes; the three parcels are zoned Residential/Agricultural (RA-100) and were not included in the prior rezoning approved by the Town of Clay in 2023 because OCIDA did not own the properties at that time. Micron would request rezoning of these parcels by the Town of Clay Town Board from RA-100 to I-2, consistent with the industrial zoning for the remainder of the proposed Micron Campus.

[30] As required by Section 305-B of the New York State Agriculture and Markets Law, Micron also would be required to prepare an agricultural data statement to be included with its site plan and special use permit applications to the Towns of Clay and Cicero. The agricultural data statement would disclose if any portion of the affected property is currently being farmed, and would identify the owner of any land containing farming operations within 500 feet of the affected property. The municipalities would review the agricultural data statement to assist in identifying any potential impacts from the Proposed Project on farm operations in agricultural districts.

Figure 3.1-12 Zoning District Change on Micron Campus



Source: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA; Data source: Town of Clay Planning Board (n.d.).

The manufacturing facility on the Micron Campus and the rail spur facility on the Rail Spur Site would be industrial uses in the Clay I-2 district subject to site plan approvals by the Town of Clay Planning Board in accordance with the Town of Clay Zoning Code, including applicable I-2 design standards, site plan conditions, and mitigation requirements.[31]

In conjunction with the rezoning request for the residential parcels in the WPCP, Micron would work with the Town of Clay Town Board and Planning Board to identify areas of concern and develop specific measures to address or alleviate such concerns. Subject to the Town Board rezoning approval, re-subdivision, and the Planning Board site plan approvals, once completed, the manufacturing and rail spur facilities would be located entirely in the Clay I-2 district and would comply with required setback and perimeter landscaping requirements and implement any required mitigation, such as visual screening measures. If the facilities on the Micron Campus or the Rail Spur Site cannot meet certain I-2 district restrictions or requirements, variances would be sought in connection with the site plan approvals, subject to approval by the Town of Clay Zoning Board of Appeals.

The two portions of the Micron Campus that would be located in the Town of Cicero General Commercial and Highway Overlay districts (see Figure 3.1-12) would include minor improvements limited to access roads, driveways, and utility lines, and would not include any structures. These minor improvements would be permitted as of right in the GC district and would be subject to a subdivision approval by the Town of Cicero Planning Board, but would not require any other Town of Cicero discretionary land use approvals. If necessary in connection with the subdivision approval, Micron would work with the Town of Cicero to develop measures to address or alleviate concerns relating to these improvements.

The childcare center, healthcare center, and recreation center on the Childcare Site would be uses in the RA-100 district subject to issuance of discretionary special use permits from the Town of Clay Planning Board.[32] Micron would work with the Planning Board to ensure these facilities meet required design standards, including standards relating to scale, vehicular and pedestrian safety, services and utilities, and aesthetics, so that the facility would be appropriate in relation to the surrounding development and zoning context.

Public utility projects in New York State are generally exempt from local zoning regulations under a legal doctrine known as the Monroe balancing test, which considers the public interest in such projects. Therefore, the Connected Actions that would be undertaken by OCDWEP and OCWA (see Table 3.1-1 above) may be exempt from some or all local zoning requirements. In addition, the Connected Actions that would be undertaken by National Grid may be exempt from local zoning requirements through provisions in the New York State Public Service Law (PSL). To the extent the improvements would be subject to any zoning requirements, OCDWEP,

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[31] Pursuant to Town of Clay Zoning Code Section 230-17(D)(2), permitted uses in the I-2 district include manufacturing, warehouse, and trucking terminal facilities.

[32] Micron would apply for a special use permit for the childcare facility pursuant to Town of Clay Zoning Code Section 230-13A(2)(c)(2), which permits "Day-care facilities" as a defined use, and a special use permit for the healthcare and recreational facilities as ancillary uses pursuant to Section 230-13A(2)(c)[7], which permits "Special Uses" defined as "An accessory use to a principal use which, because of its unique characteristics, requires special consideration in each case by the Planning Board before a building permit can be issued."

OCWA, and National Grid would apply for any necessary local approvals and would work with the municipalities to ensure the proposed improvements comply with the zoning requirements.

In sum, the Micron Campus would complete the industrial rezoning of the entire area of the WPCP and, consistent with this rezoning and long-term public policy objectives (see next subsection), would become an industrial center facilitating regional economic development. The Rail Spur Site and the Childcare Site would not require any changes to current zoning. Taken together, the Proposed Project and the Connected Actions would comply with zoning regulations and the terms and conditions of any necessary local approvals. Therefore, the Preferred Action Alternative would not result in any significant adverse direct effects on zoning on the Micron Campus, Rail Spur Site, Childcare Site, or Connected Action sites. Indirect effects on zoning outside of these sites are discussed further below under Growth Inducing Effects.

Public Policy

Appendix D-3 analyzes the relationship between the Proposed Project and the Onondaga County Comprehensive Plan, the SMTC 2050 Long Range Transportation Plan 2020 Update, the Town of Clay Northern Land Use Study, the draft Town of Cicero Comprehensive Plan, and the New York Green CHIPS Program. The analysis concludes that the Proposed Project would be consistent with each of these policies and would fulfill several of their goals relating to economic development and industrial use of the WPCP. The Preferred Action Alternative would not result in any significant adverse effects with respect to these policies and would likely result in beneficial effects by fulfilling economic development policy goals.

Growth Inducing Effects

This section analyzes the indirect effects on land use, zoning, and public policy from induced growth, consistent with the methodology and study area outlined in Appendix C. For purposes of this analysis, induced growth refers to reasonably foreseeable increases in population, jobs and economic activity, and residential, commercial, and industrial development resulting from the Preferred Action Alternative within the five-county Central New York (CNY) Region defined as Onondaga, Oswego, Madison, Cortland, and Cayuga Counties (five-county region).

The Preferred Action Alternative would result in growth inducing effects on land use primarily due to increased demand for housing and business services as well as supply chain growth. This section focuses on the potential effects on land use from this increased residential and commercial demand; for broader analysis of induced housing and commercial demand, see Section 3.15 (Socioeconomic Conditions).

In general, the Proposed Project would induce growth beginning in 2025 with movement of Micron construction workers to the WPCP and surrounding areas and would develop as the Proposed Project is constructed and the fabs become operational, with most of the growth occurring by 2035, but continuing through 2041. The growth would be most pronounced in Onondaga County—which is expected to experience an increase of approximately 13,700 to 18,200 households by 2035 and 16,500 to 23,500 households by 2041 (an approximately 9 to 12 percent increase compared to 2023 figures)—but would be spread across multiple municipalities throughout the five-county region. The City of Syracuse is expected to experience an increase of approximately 7,500 households by 2041, and the Towns of Cicero, Clay, Dewitt, Lysander, Manlius, Onondaga, and Salina are expected to experience potential increases of more than 1,000 households each. Induced household growth in the broader study area would range from approximately 1,500 households in Cortland County to 4,500 households in Oswego County by 2041. See Appendix C for more detailed figures.

Because housing demand in the areas of highest population growth is not expected to be met by existing rental units and for-sale homes, induced household growth would result in noticeable land use changes in some areas over time to accommodate new residential construction, such as through construction of new housing subdivisions on vacant, underutilized, or former agricultural land. Except for the other planned projects in the land use study area (see Table 3.1-2), and developments identified in Chapter 4 (Cumulative Effects), the specific locations and scale of new residential development cannot be predicted at this time.

Similarly, induced growth would result in noticeable land use changes to accommodate new commercial construction for businesses supporting Micron's supply chain and new household spending in areas of residential growth. The Proposed Project would be anticipated to draw additional commercial and manufacturing facilities serving the semiconductor supply chain to the immediate area surrounding the Micron Campus, likely along the arterial roadways (NYS Route 31 and I-81) in the Towns of Clay and Cicero. In addition, development of new retail, such as supermarkets and restaurants, and community facilities, such as medical offices, schools, and childcare facilities, would likely occur in the areas of highest population growth throughout the five-county region. As with residential development, the locations and scale of this induced commercial and community development cannot be predicted at this time.

With respect to zoning, although many factors influence where new development may occur, such as availability of public infrastructure, new residential development in the five-county study area would most likely occur in or near zoning districts that already permit high housing concentrations with formerly developed properties available for redevelopment (such as the City of Syracuse). Increased housing density in these areas would be largely consistent with current zoning and may enhance and expand their existing residential and community character.

Beyond higher density residential areas, induced housing development may require rezoning (for example, a rezoning is required for the proposed redevelopment of the Great Northern Mall as a residential lifestyle center, discussed in Section 4.3), or new subdivisions of currently vacant land consistent with local comprehensive plans. Municipalities would be able to use zoning amendments and plan changes to direct new development by permitting higher densities at appropriate locations (e.g., locations well-served by public infrastructure).

Induced commercial and community facility development also would likely be in zoning districts that already permit such uses. The area west of the Micron Campus and the Rail Spur Site in the Town of Clay contains a collection of developed and vacant properties in the I-2 district, which would likely be suitable for induced manufacturing, processing, and supply chain businesses. The I-81 corridor in the Town of Cicero contains developed and vacant properties zoned General Commercial (GC), General Commercial Plan (GC+) and Industrial (IND), which would be suitable for similar induced commercial and manufacturing developments. Induced non-residential development in areas where proposed uses do not meet zoning regulations would be subject to local rezoning amendments or other discretionary approvals, which may require measures to avoid, minimize, or otherwise mitigate development impacts.

Through the adoption of future discretionary approvals, local municipalities would identify the potential impacts of induced residential or non-residential development and address potential measures to avoid, minimize, or otherwise mitigate those impacts as necessary. For example, any discretionary approval for a property within an agricultural district would need to include measures to avoid, minimize, or mitigate potential impacts on functioning farm operations in accordance with Section 305-B of the New York State Agriculture and Markets Law (discussed above).

Local planning policies would continue to guide induced residential and commercial development. As discussed in Appendix D-3, the Onondaga County Comprehensive Plan (the Comprehensive Plan) includes a County-wide land use plan that takes the Proposed Project into account as a major economic development initiative that would be likely to shape the County's vision of its future growth. The Comprehensive Plan identifies "centers" that would support concentrated investment in future development and growth: Traditional Centers (existing walkable, mixed-use, and amenity-rich neighborhoods); Emerging and Town Growth Centers (existing commercial corridors and downtown areas with potential for growth); the City Center (downtown Syracuse); and Employment Centers (locations with potential for increased economic activity, such as manufacturing). The Comprehensive Plan includes policies to foster transit-oriented development near the centers, such as enhancing the County's Bus Rapid Transit (BRT) system. Under the Comprehensive Plan, municipalities in Onondaga County would be expected to conform future discretionary land use and zoning actions to facilitate new housing and business development in appropriate locations with the fewest adverse effects (e.g., adverse effects on infrastructure capacity or farmland).

The Town of Clay Northern Land Use Study would continue to guide future land use and development in the northern portion of the Town and calls for new land use policies and waterfront zoning districts to promote development in waterfront areas to relieve pressure on the rural portions of the Town. The Town of Cicero's draft Comprehensive Plan (Vision Cicero), released in 2024, takes the Proposed Project into account through a comprehensive update to the Town zoning code to promote development along the U.S. Route 11 corridor. The update would provide for new higher density development areas (Regional Mixed Use, Mixed Residential, and Town Center areas), particularly higher residential density to facilitate a variety of housing types and increase housing supply to meet expected induced demand from the Proposed Project and projected growth in the area.

Although other counties and municipalities in the five-county study area have enacted comprehensive plans, there are few recent plans. The City of Syracuse Comprehensive Plan was enacted in 2012, the Oswego County Comprehensive Plan was enacted in 2008, and the Cortland County Consolidated Plan was enacted in 2002. Over time, other counties and municipalities could enact updated policies similar to the Onondaga County, Clay, and Cicero plans described above to include measures to mitigate adverse growth inducing effects from the Proposed Project, while harnessing smart growth principles, such as the goals outlined in the Onondaga County Comprehensive Plan, to realize positive benefits from induced growth in the region. In particular, the future planning policies could direct development to appropriate locations with the fewest adverse effects to farmland.

In sum, the Proposed Project would likely induce substantial new residential and commercial growth in the five-county region resulting in gradual changes to land use over an extended period as Micron builds the Proposed Project and as job opportunities attract new populations to the region. The locations and scale of this induced commercial and residential development cannot be predicted at this time, but at least some of this induced growth would potentially result in upzoning existing residential and commercial districts for higher density or occur outside of districts already zoned for residential and commercial development. Therefore, the growth inducing effects of the Preferred Action Alternative would result in significant changes to land use. However, these changes would continue to be subject to local discretionary approvals and planning policies, including applicable measures to avoid or minimize adverse development effects and preserve community and regional character.

Summary of Effects

As described above, because construction of the Proposed Project would convert existing vacant land and residential land uses to industrial use over a 16-year timeframe, consistent with applicable zoning and public policies, those construction activities would not result in significant adverse effects on land use. The Proposed Project on the whole, and the Micron Campus in particular, would nevertheless represent a significant direct change to existing land use. However, this change would still be consistent with the I-2 zoning designation for the WPCP. In addition, the growth inducing effects of the Preferred Action Alternative as a whole would result in significant changes to land use, although the changes would continue to be subject to local discretionary approvals and planning policies, including applicable measures to avoid or minimize adverse development effects.

The Proposed Project and the Connected Actions would comply with zoning regulations and the terms and conditions of any necessary local approvals, would be consistent with relevant public policies, and would fulfill several public policy goals relating to economic development and industrial use of the WPCP. Therefore, the Preferred Action Alternative would not result in any significant adverse effects with respect to zoning or public policies, and would likely result in beneficial effects by fulfilling economic development policy goals.

3.1.4 BMPs and Mitigation Measures

The Preferred Action Alternative would not result in any significant adverse effects on zoning or public policy. Although the Preferred Action Alternative would result in significant changes to existing land use, those changes would continue to be subject to local discretionary approvals and planning policies, including applicable measures to avoid or minimize adverse development effects and preserve community and regional character, and would likely result in beneficial effects by fulfilling economic development policy goals. Therefore, no mitigation measures are required.

3.2 GEOLOGY, SOILS, AND TOPOGRAPHY

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative relating to geology, soils, and topography. This includes an analysis of both the effects of the alternatives on the geology, soils, and topography of the locations where the Proposed Project and Connected Actions would be built, as well as the potential effects of geologic, soil, and topographical conditions on construction of Proposed Project structures.

The Proposed Project would result in changes to geology, soils, and topography through the redevelopment of an approximately 1,377-acre area that would require intensive construction activity over a 16-year period involving the removal of substantial amounts of soil and bedrock and the import of a substantial amount of fill material and site grading work.

3.2.1 Legal and Regulatory Setting

Section 3.2 focuses on the effects of the alternatives associated with ground disturbance and geological resources; for analysis of the effects of the alternatives on water bodies and wetlands, see Section 3.3 (Water Resources).

Table 3.2-1 identifies the laws and regulations relevant to the analysis in this section, which include requirements relating to pollutant discharges and the use of fill material in construction that may affect local geology, and requirements in local zoning codes, building codes, and engineering standards that govern project design criteria, such as foundation bearing capacity and dewatering controls. Appendix E includes: the geology, soils, and topography methodology; a list of soil type descriptions; and geotechnical reports prepared for the Proposed Project, which this section discusses where relevant to the analysis of proposed construction methods that may be necessary to address potential soil stability and subsidence effects.

Table 3.2-1 Legal and Regulatory Setting

Law or Regulation	Description
Federal	
Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.*	The CWA regulates discharges of pollutants into waters of the U.S. The USEPA administers the National Pollutant Discharge Elimination System (NPDES). USEPA may authorize a state to administer one or more NPDES program components and assume permitting authority within the state.
State	
New York State Pollutant Discharge Elimination System (SPDES), 6 N.Y.C.R.R. Pt. 750	The SPDES program regulates point source (e.g., outlet or pipe) discharges of pollutants into New York State surface waters or groundwaters and requires permits for construction of point sources. USEPA has approved New York's SPDES program for the control of surface wastewater and stormwater discharges in accordance with the CWA. The NYSDEC administers the SPDES program and reviews applications for SPDES permits to protect waterways from soil erosion and pollutant impacts during construction and operation of projects subject to the program.
New York State Materials	Under the State Materials Management Program, NYSDEC is responsible for permitting, inspection, and assessment of facilities for compliance with state

Law or Regulation	Description
Management Program, 6 N.Y.C.R.R. Pts. 360-366, 369	materials management regulations, which include provisions relating to the use of fill material and construction and demolition debris in project construction activities.
Local	
Town of Clay and Town of Cicero Zoning Codes	The Town of Clay Zoning Code (Ch. 230 of the Code of the Town of Clay) and the Town of Cicero Zoning Code (Ch. 210 of the Code of the Town of Cicero) include provisions governing site development activities, including grading and excavation, protection of steep slopes, installation of infrastructure and utilities, flood prevention, stormwater management, and erosion and sediment control.
Town of Schroeppel, Town of Volney, Town of Minetto, and City of Oswego Zoning Codes	The Town of Schroeppel Zoning Code (Ch. 95 of the Code of the Town of Schroeppel), the Town of Volney Zoning Ordinance Law Book, the Zoning Ordinance of the Town of Minetto, and the City of Oswego Zoning Code (Ch. 280 of the code of the City of Oswego) include provisions governing site development activities, including grading and excavation, protection of steep slopes, installation of infrastructure and utilities, flood prevention, stormwater management, and erosion and sediment control.

3.2.2 Affected Environment

This section describes the affected environment within the study area for geology, soils, and topography, which encompasses the existing lands, soils, and underlying geology within the limits of disturbance (LOD) of the areas where the Proposed Project and proposed Connected Actions would be built (see Appendix E-1 for the study area methodology).

3.2.2.1 Geology

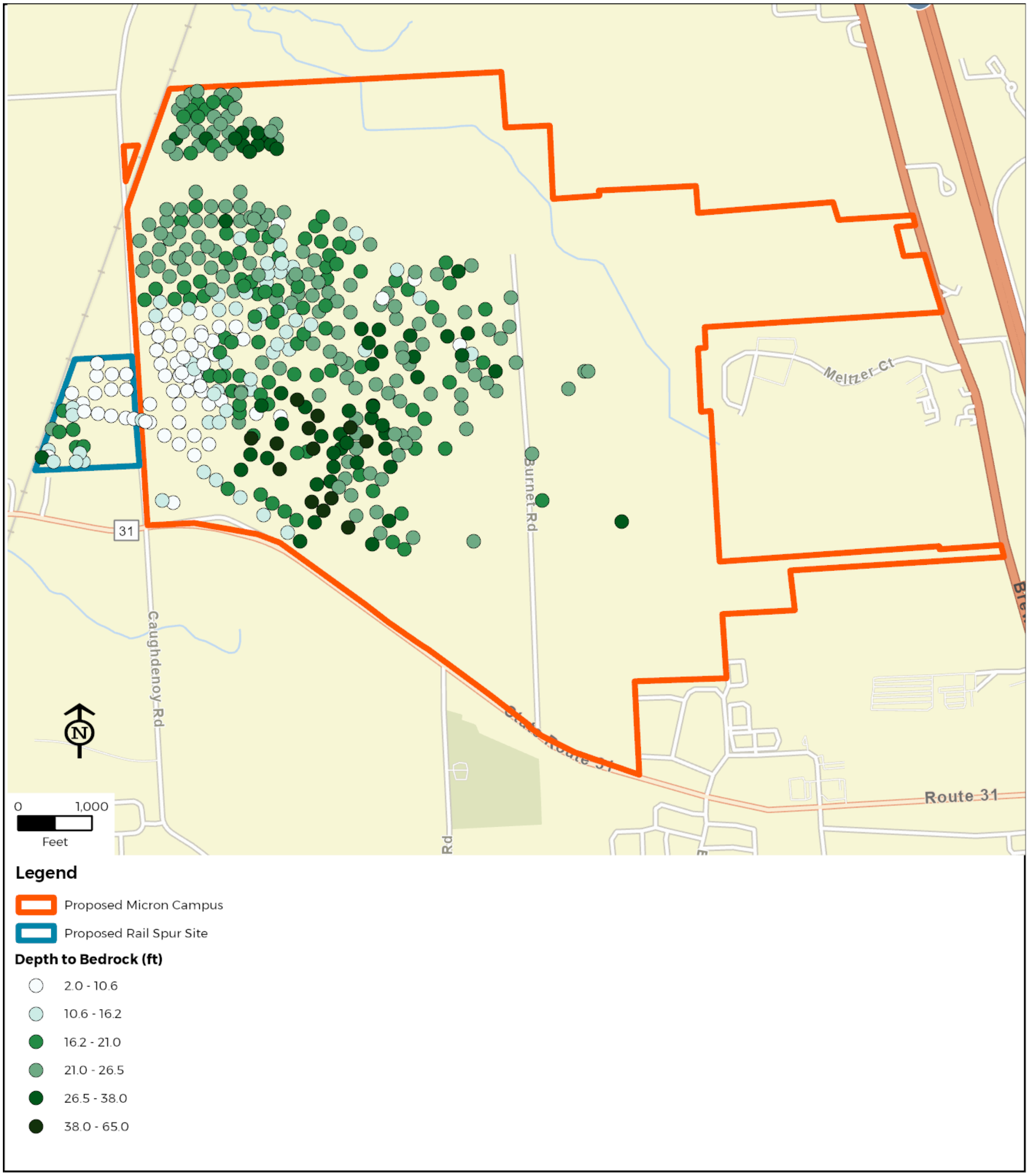
The study area is located within the Erie-Ontario Lowlands, a geographic region shaped by millennia of glacial activity. This region primarily consists of a relatively flat plain, but also includes large drumlin fields (glacially formed soil mounds or hills) (Isachsen et al., 2000, p. 189). The modern landscape of the region was shaped by Glacial Lake Iroquois, a vast glacial lake that existed approximately 16,000 years ago. The lake drained around 11,000 years ago at the end of the last glacial period, leaving behind remnants that now form Lake Ontario (Isachsen et al., 2000). As described below, the geology of the affected environment includes bedrock geology, surficial geology, and a low risk of geologic hazards (seismic, landslide, or sinkhole activity).

Most of the bedrock underneath the WPCP and the proposed Rail Spur Site belongs to the Lockport Group, specifically Guelph Dolostone, as indicated in New York State Geological Survey data in the Geologic Map of New York Finger Lakes Sheet, accessed through the New York State Museum (Muller & Caldwell, 1986). These bedrock formations were formed during the Early/Lower Silurian period of the Paleozoic era between 442.1 and 441.5 million years ago (ibid; Isachsen et al., 2000). The bedrock underneath the proposed Childcare Site belongs to the Clinton Group, which is composed of various types of sandstone and shale known as the "Oneida Conglomerate" (Rickard & Fisher, 1970). The Clinton Group rocks date from the Early/Lower to Late/Upper Silurian, between 438 and 421 million years ago (ibid; Isachsen et al., 2000).

With respect to the existing utility properties where the proposed Connected Actions would occur, most of the bedrock underneath the southern section of the OCWA Terminal Campus is Vernon Shale, a black shale rock formed during the Early/Lower Silurian period between 442.1 and 441.5 million years ago (Muller & Caldwell, 1986). The bedrock underneath the OCWA LOWTP belongs to the Undifferentiated Medina Group and Queenstone Formation, a shale and sandstone rock type which formed during the Upper Ordovician period. The proposed OCWA water transmission lines, which would include a 22-mile-long connection between the LOWTP and the Terminal Campus, traverse varied bedrock conditions typical of this region of New York State. The bedrock underneath the OCDWEP Oak Orchard site (where the new IWWTP would be built), proposed OCDWEP wastewater conveyance route, proposed National Grid natural gas line route, and proposed National Grid Clay Substation expansion area belongs to the same Lockport Group/Guelph Dolostone as the bedrock underneath the WPCP, as described above.

As documented in the geotechnical reports in Appendix E-4, CME Associates, Inc. (CME) conducted Phase 1, 2, and 3 geotechnical investigations of the WPCP and proposed Rail Spur and Childcare Sites in May-June 2023, September-October 2023, and April-May 2024. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) conducted additional Phase 1 and 2 geotechnical investigations of the WPCP in April - May 2025 (see Appendix E-4). As part of these investigations, estimates of depth to probable bedrock (where rock and auger refusal was encountered) ranged from approximately 2 to 65 feet below grade on the WPCP and approximately 4 to 25 feet below grade on the proposed Rail Spur Site. These estimates revealed generally higher bedrock elevations in the southwestern portion of the WPCP and the northeastern portion of the proposed Rail Spur Site. The test borings at the Childcare Site identified a layer of silt and clay followed by sand and gravel, underlain by bedrock, generally at depths ranging from 21 to 25 feet below grade. Figure 3.2-1 includes the test boring depths to the bedrock from the CME and Langan geotechnical investigations.

Figure 3.2-1 Depth to Bedrock at Boring Locations



Source: CME Report number 28062B-04-0724 (CME, 2024).

The surficial deposits within the study area are materials that lie between the bedrock and upper soil layers and are characteristic of sediments deposited beneath glacial ice or proglacial lakes formed during glacial retreat, as indicated in New York State Geological Survey data in the Geologic Map of New York Finger Lakes Sheet, accessed through the New York State Museum. These deposits consist of glacial till (a mixture of clay, silt-clay, and boulder clay formed by glacial activity) and lacustrine (lake-derived) silt and clay. The glacial till is primarily concentrated along the southern portion of the WPCP, toward NYS Route 31, with the balance of the study area, including the proposed Rail Spur and Childcare Sites, primarily consisting of lacustrine silt and clay. The existing utility properties consist of a mix of both till and lacustrine silt and clay.

The till texture varies from boulders to silt ranging in thickness from 3 to 164 feet, and its permeability varies with compaction. The lacustrine silt and clay are generally laminated (made up of fine layers) ranging in thickness up to 164 feet, have low permeability, and may exhibit potential land instability (Muller & Caldwell, 1986). In addition to the depth to probable bedrock estimates described above, the geotechnical investigation test borings at the Proposed Project locations identified surfacing (topsoil and organic matter) at grade, underlain by strata (layers of rock material) of silt, clay, and sand, in line with the regional surficial geology mapping from the New York State Geological Survey.

There is generally a low risk of geologic hazards within the study area. Based on Section 1613 of the 2020 New York State Building Code (which references the American Society of Civil Engineers (ASCE) standard 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, Chapter 20), the area surrounding the WPCP is representative of Site Class D (stiff soil). The geotechnical investigations of the WPCP conducted in 2023 did not encounter soils vulnerable to liquefaction, sudden collapse, or failure under seismic loading conditions, based on a computational analysis using CME's Subsurface Exploration data, which included Standard Penetration Testing (SPT), Cone Penetration Testing (CPT), and Multichannel Analysis of Surface Waves (MASW). No sinkholes were identified on the WPCP.

Bedrock was core-sampled at 13 test boring locations and verified to be sedimentary interbedded shale and dolostone, which is nonreactive to only slightly reactive to dilute hydrochloric acid (HCI). Karst features (e.g., sinkholes, depressions, solution cavities, caves, escarpments, ridges, etc.) were not observed within the WPCP either at the surface or within boreholes performed by the geotechnical engineers. Similarly, geophysical testing completed within the site, including seismic refraction surveying and MASW testing, did not suggest the presence of karst features. Where tested, recovered bedrock samples were generally reported to show low reactivity to dilute HCl further reducing the potential for development of karst features.

Steep slope and soil conditions at greater risk of landslides also were not identified at the WPCP. According to the 2019 Onondaga County Multi-Jurisdictional Hazard Mitigation Plan Update, the Towns of Clay and Cicero are located in areas with moderate susceptibility to landsliding but a low incidence of occurrence; only one small area in the center of the southern portion of Onondaga County has a moderate incidence of landslide occurrence (Tetra Tech, Inc. & Onondaga County, 2019). Therefore, the potential for geologic hazards is considered low with the area experiencing reasonably low seismicity. The soils documented on the WPCP are not considered to be prone to liquefaction, landslides, or lateral spreading impacts.

The geologic conditions at the proposed Rail Spur and Childcare Sites and existing utility properties are substantially similar to those at the WPCP. Therefore, the existing seismic, sinkhole, and landslide risks at those locations is also low.

3.2.2.2 Soils[33]

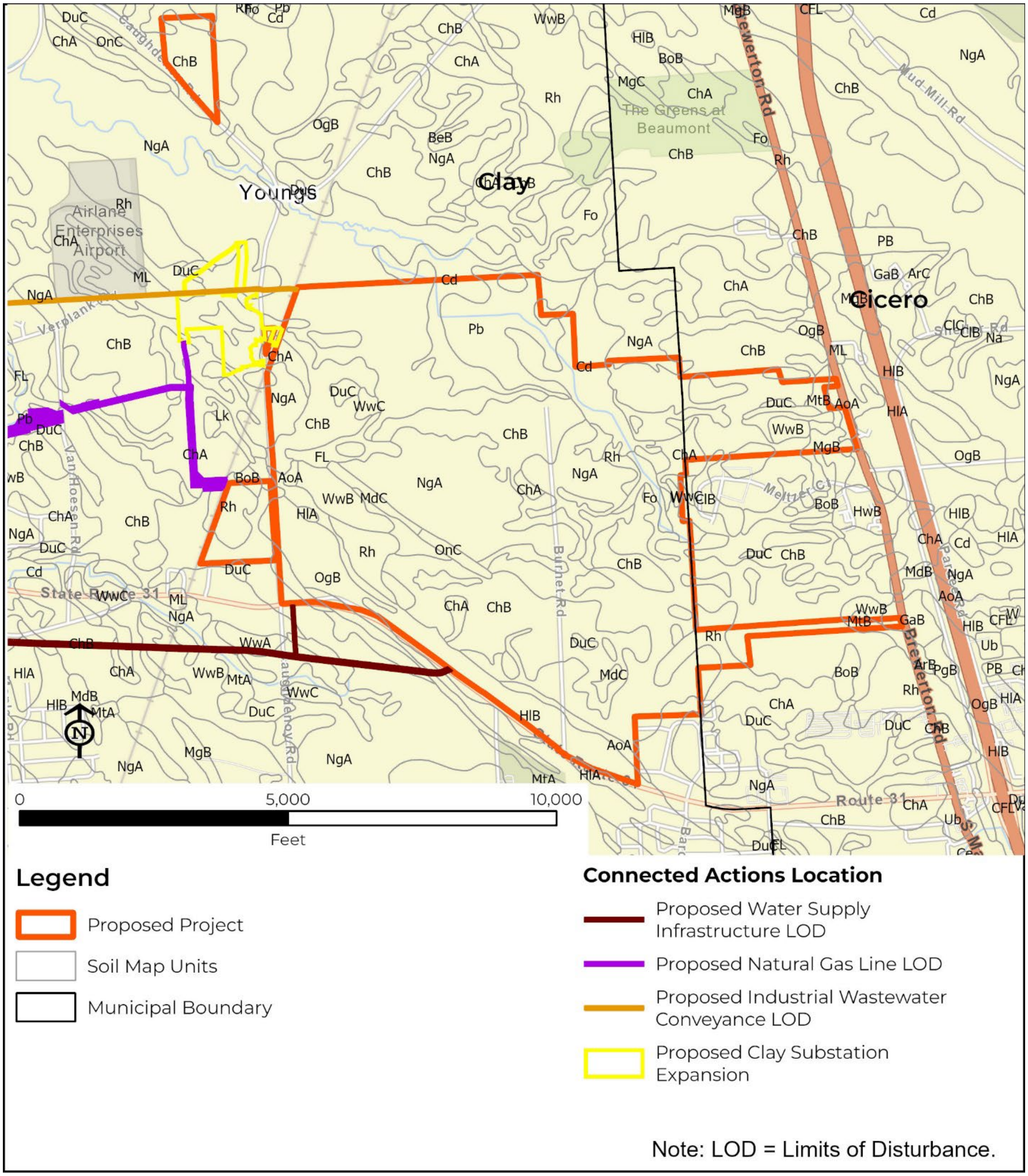
Soils are comprised of solid mineral and organic matter, liquids, and gases and are made up of various layers characterized by different energy and matter transfers or the ability to support rooted plants in a natural environment (NRCS, 2024). Soils are susceptible to erosion and instability based on their texture (or type), permeability (or drainage), and slope factors. Erodibility is typically greater in soil types with a high content of silt or fine sand, and lower in clay-rich soils or sandy soils with medium to coarse sand particles (O'Geen et al., 2006). Less permeable or poorly-drained soils are more erodible than well drained soils. Soils with longer and steeper slopes, especially without adequate vegetative cover, are more erodible than soils with shorter and less steep slopes. Soils are typically classified into "types", "series", or "map units". The erodibility and stability of a soil type can vary based on the combination of the above factors.

Figure 3.2-2, Figure 3.2-3, and Table 3.2-2 below show and list the various soil types at the Proposed Project and proposed Connected Action locations. Most of the soil types in the study area are typical of the glacial landscape of the region and include soils generally found on till plains and drumlinoid ridges, on lake, flood, or outwash plains, and in wetlands. Many of the soil types include loam (soil composed mostly of sand, silt, and a smaller amount of clay), loamy sand, silt loam, or gravelly loam. Silt loams are a mixture of clay, sand, and silt and, due to these textures, are generally less erodible (O'Geen et al., 2006.).

The wetland areas largely contain varieties of clay, loam, and well-decomposed organic matter or "muck." Apart from soils in the wetland areas (which have low drainage), most of the soils within the study area range from somewhat poorly drained to well drained. Appendix E-2 includes more detailed descriptions of the soil types found in the study area.

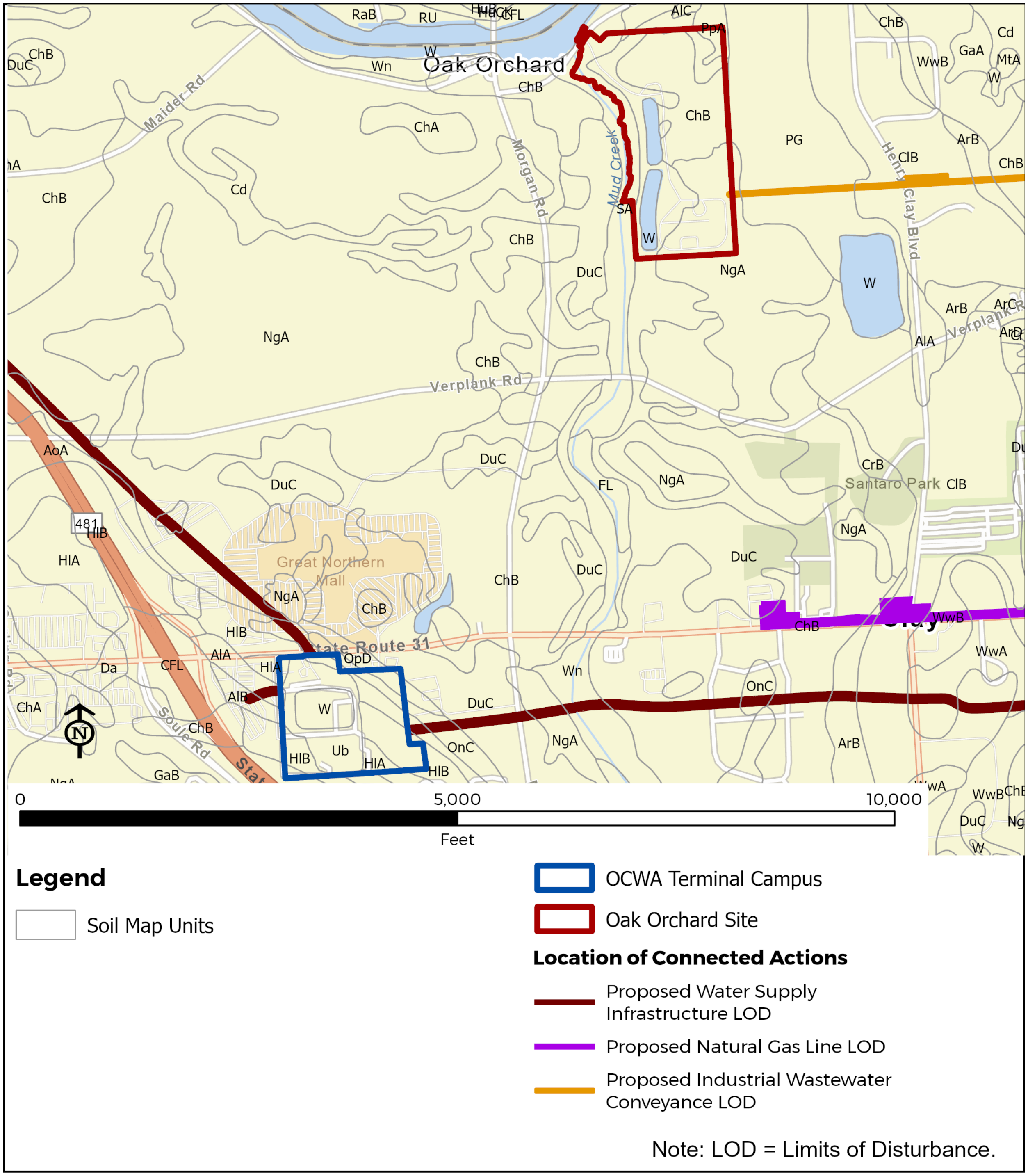
[33] Protected farmland soils are discussed in Section 3.1 (Land Use, Zoning, and Public Policy).

Figure 3.2-2 Soils at Proposed Project Sites and Clay Substation Expansion Area



Source: Soil Survey Geographic Database (SSURGO) (NRCS, n.d.-a).

Figure 3.2-3 Soils at Oak Orchard Site and OCWA Terminal Campus



Source: Soil Survey Geographic Database (SSURGO) (NRCS, n.d.-a).

Table 3.2-2 Soil Types at Proposed Project and Connected Action Sites

Symbol	Soil Type	Percent of Site	Hydrologic Soil Group	Depth to Bedrock	Slope Percentage	Drainage
WPCP (Proposed Micron Campus)						
NgA	Niagara silt loam	36%	C/D	>60 in.	0-4%	Somewhat poorly drained
Cd	Canandaigua mucky silt loam	6%	C/D	18-60 in.	0-3%	Poorly drained
H1A, H1B	Hilton loam	5%	B/D	>60 in.	H1A: 0-3% H1B: 3-8%	Moderately well drained
Pb	Palms muck	5%	B/D	>50 in.	0-3%	Very poorly drained
ChA, ChB	Collamer silt loam	32%	C/D	>60 in.	ChA: 0-2% ChB: 2-6%	Moderately well drained
Rh	Rhinebeck silt loam	4%	C/D	>60 in.	0-3%	Somewhat poorly drained
OgB	Ontario loam	3%	B	>40 in.	3-8%	Well drained
WwB, WwC	Williamson silt loam	2%	D	>60 in.	WwB: 2-6% WwC: 8-15%	Moderately well drained
AoA	Appleton loam	1%	B/D	>60 in.	0-3%	Somewhat poorly drained
FL	Fluvaquents	1%	A/D	n/a	0-5%	Poorly drained
MdC	Madrid fine sandy loam	1%	B	>60 in.	8-15%	Well drained
MtA, MtB	Minoa fine sandy loam	1%	B/D	>60 in.	MtA: 0-2% MtB: 2-6%	Somewhat poorly drained
DuC	Dunkirk silt loam	1%	C	>60 in.	6-12%	Well drained
Fo	Fonda mucky silty clay loam	1%	C/D	>60 in.	0-3%	Very poorly drained
OnC	Ontario gravelly loam	<1%	B	>40 in.	8-15%	Well drained
MgB	Madrid gravelly loam	<1%	B	>60 in.	2-8%	Well drained
GaB	Galen very fine sandy loam	<1%	A/D	>90 in.	2-6%	Moderately well drained
W	Water	<1%	n/a	n/a	n/a	n/a
C1B	Colonie loamy fine sand	<1%	A	14-48 in.	0-6%	Somewhat excessively drained

BoB	Bombay gravelly loam	<1%	C/D	>60 in.	2-8%	Moderately well drained
Proposed Rail Spur Site						
Rh	Rhinebeck silt loam	43%	C/D	>60 in.	0-3%	Somewhat poorly drained
NgA	Niagara silt loam	42%	C/D	>60 in.	0-4%	Somewhat poorly drained
OgB	Ontario loam	8%	B	>40 in.	3-8%	Well drained
BoB	Bombay gravelly loam	4%	C/D	>60 in.	2-8%	Moderately well drained
WwB	Williamson silt loam	2%	D	>60 in.	2-6%	Moderately well drained
ChA, ChB	Collamer silt loam	1%	C/D	>60 in.	ChA: 0-2% ChB: 2-6%	Moderately well drained
DuC	Dunkirk silt loam	<1%	C	>60 in.	6-12%	Well drained
Proposed Childcare Site						
ChA, ChB	Collamer silt loam	99%	C/D	>60 in.	ChA: 0-2% ChB: 2-6%	Moderately well drained
NgA	Niagara silt loam	1%	C/D	>60 in.	0-4%	Somewhat poorly drained
Proposed National Grid Clay Substation Expansion Area						
ChA, ChB	Collamer silt loam	76%	C/D	>60 in.	ChA: 0-2% ChB: 2-6%	Moderately well drained
Rh	Rhinebeck silt loam	15%	C/D	>60 in.	0-3%	Somewhat poorly drained
NgA	Niagara silt loam	9%	C/D	>60 in.	2-8%	Moderately well drained
OCDWEP Oak Orchard Site						
ChB	Collamer silt loam	33%	C/D	>60 in.	0-3%	Somewhat poorly drained
DuC	Dunkirk silt loam	25%	C	>60 in.	6-12%	Well drained
NgA	Niagara silt loam	22%	C/D	>60 in.	2-8%	Moderately well drained
SA	Saprists and fluvaquents, ponded	11%	D	n/a	0-7%	Poorly drained
W	Water	8%	n/a	n/a	n/a	n/a
PpA	Phelps cobbly loam	2%	B/D	>60in.	0-3%	Well drained

OCWA Terminal Campus						
Ub	Urban land	44%	n/a	n/a	n/a	Well drained
H1A, H1B	Hilton loam	31%	B/D	>60 in.	H1A: 0-3% H1B: 3-8%	Moderately well drained
W	Water	16%	n/a	n/a	n/a	n/a
OgB	Ontario loam	10%	B	>40 in.	3-8%	Well drained
OnC	Ontario gravelly loam	4%	B	>40 in.	8-15%	Well drained
OpD	Ontario-Palmyra-Arkport complex	3%	B	>40in.	0-60%	Well drained
NgA	Niagara silt loam	1%	C/D	>60 in.	2-8%	Moderately well drained
A1A, A1B	Allard silt loam	1%	A	>60 in.	A1A: 0-3% A1B: 3-8%	Well drained
DuC	Dunkirk silt loam	<1%	C	>60 in.	6-12%	Well drained
OCWA Lake Ontario Water Treatment Plant						
CFL	Cut and fill	61%	C	n/a	n/a	n/a
ScB, ScC	Scriba gravelly fine sandy loam	22%	D	>60 in.	ScB: 0-8% ScC: 8-15%	Somewhat poorly drained
IrB, IrC	Ira gravelly fine sandy loam	13%	D	>36 in.	IrB: 3-8% IrC: 8-15%	Moderately well drained
SgD	Sodus gravelly fine sandy loam	4%	D	>40 in.	15-25%	Well drained
Su	Sun loam	<1%	C/D	>60 in.	0-3%	Poorly drained

Sources: NRCS (2023), USDA (2012).

As shown in Table 3.2-2, the predominant soil types at the Proposed Project sites are silt loams, including Niagara, Rhinebeck, and Collamer silt loams. Although silt loams, as noted above, are mixed with clay and are generally less erodible than finer grained or sandier soils, other aspects of soil texture such as softness and plasticity, drainage, and the influx of groundwater can influence these soils' stability. CME identified large portions of silt- and clay-based compressible soils at the WPCP. 37 percent of the site, including a broad central portion, is occupied by somewhat poorly drained Niagara silt loam. The silt strata underneath the WPCP are generally soft and slightly plastic to stiff and non-plastic in consistency. The soft to medium stiff portions of the silt strata would be expected to compress relatively quickly (in weeks or months rather than years) under the weight of new fill and building loads. Silty soils present at grade are also sensitive to moisture and disturbance (CME, 2023). These soils can become unstable and lose integrity in the presence of water and construction traffic. The clay-based soils at the site are generally soft in consistency and would be susceptible to significant settlement during compression under the weight of new fill and building loads (Simon, 2023). Unlike silt, however, the clay soil is more plastic and would be expected to compress more slowly (months or years) under such loads.

CME also identified the soils at the WPCP as ranging from well drained to poorly drained. The geotechnical investigations CME conducted in April and June 2023 identified groundwater within 0.1 to 4.2 feet below grade during the spring months, based on a combination of boring techniques, groundwater monitoring wells, infiltration, and laboratory testing. CME also noted mottled soils in several borings within 2 to 4 feet of grade, indicative of repeated wetting and drying of soils within those depths due to seasonal groundwater fluctuations.

As shown in Table 3.2-2, the majority of the soils at the proposed Rail Spur Site are somewhat poorly drained Rhinebeck and Niagara silt loam, and almost all the soil at the proposed Childcare Site is moderately well drained Collamer silt loam.

The proposed Connected Action sites include a mix of soil types, as well as existing structures on urban land (e.g., the Terminal Campus) or cut and fill (e.g., the LOWTP). The areas where proposed linear infrastructure improvements would occur as part of the Connected Actions (e.g., the proposed water conveyance line, industrial wastewater conveyance system, and natural gas line) primarily follow existing utility routes. These proposed new utility lines would span approximately 420 acres of land predominantly occupied by sandy loams.

3.2.2.3 Topography

Topography refers to surface characteristics and natural and artificial physical features of an area. Elevations and sloping of these features are relevant to project planning and construction. Thew Associates PLLC conducted a topographical site survey of the proposed Micron Campus location in January 2023, which identified elevations ranging from 376 feet above sea level in the northern portions of the site to 428 feet in the southern portions of the site near NYS Route 31. In addition, elevation data derived from New York State digital elevation models indicate that the ground surface at the proposed Rail Spur Site and Childcare Site has an average elevation of approximately 400 feet above sea level (FEMA, 2011).

Topographical maps of the Proposed Project and Connected Action locations with shaded areas indicating different ranges of sloping (0-10, 10-15, 15-20, and 20-100 percent) across the sites are included in Appendix E-3. Table 3.2-3 below lists the slope percentages at each of the Proposed Project and Connected Action locations and the amount of each site taken up by each sloping percentage range.

Table 3.2-3 Slopes by Percentage at Proposed Project and Connected Action Locations

Slope	Proposed Project Areas	National Grid Clay Substation	OCWA LOWTP	OCWA Terminal Campus	OCDWEP Oak Orchard Site
0–10%	1,404 acres	33 acres	52 acres	33 acres	65 acres
	97% of site	86% of site	70% of site	77% of site	84% of site
10–15%	29 acres	2 acres	9 acres	4 acres	4 acres
	2% of site	6% of site	12% of site	9% of site	6% of site
15–20%	8 acres	1 acre	5 acres	2 acres	2 acres
	1% of site	3% of site	6% of site	6% of site	2% of site

Slope	Proposed Project Areas	National Grid Clay Substation	OCWA LOWTP	OCWA Terminal Campus	OCDWEP Oak Orchard Site
20–100%	5 acres	2 acres	8 acres	4 acres	6 acres
	0% of site	4% of site	11% of site	8% of site	8% of site

Source: FEMA (2011). Note: acreages are approximate, and percentages may not sum to 100 percent due to rounding.

As shown in Table 3.2-3, the vast majority (97 percent) of the Proposed Project study area topography is relatively flat (slopes under 10 percent). Only 1 percent, or approximately 13.6 acres, of the Proposed Project area is considered steeply sloped. The largest swath of steep slopes is a short ridgeline (approximately 1,500 feet long) that runs north of and roughly parallel to NYS Route 31 between Burnet and Caughdenoy Roads (see Appendix E-3).

Also as shown in Table 3.2-3, the majority (approximately 70 to 88 percent) of the proposed Connected Action study area topography also is relatively flat (slopes under 10 percent). The National Grid Clay Substation site is mostly flat at 390 feet above sea level, with only 7.29 percent of the site exhibiting steep slopes. The majority of the OCDWEP Oak Orchard site is flat at roughly 410 feet above sea level, with 10.15 percent of the site exhibiting steep slopes, mainly near the western border of the property. The OCWA Terminal Campus is mostly flat at roughly 360 feet above sea level, with 13.85 percent of the site exhibiting steep slopes; the steepest slopes are in the center of the property bordering the facility’s paved parking lot. The OCWA LOWTP is roughly 350 feet above sea level, with more variable terrain, including 17.8 percent of the land exhibiting steep slopes; the sloping increases from the LOWTP east toward the CSX railroad tracks, and around the water treatment equipment to the west. Lastly, the existing utility route areas where proposed new utility lines would be built traverse topography typical of the region, ranging from roughly 400 feet above sea level near the proposed Micron Campus site down to 250 feet above sea level in other locations.

3.2.2.4 Unique Physical Features

According to the NYS Unique Geologic Landforms database, there are currently no unique geological features on or within the vicinity of the study area. The nearest unique geologic features are the shore of Lake Ontario at State University of New York (SUNY) Oswego, portions of the Erie Canal, and Green Street in Syracuse (NYSDEC, n.d.-a).

3.2.3 Environmental Consequences

3.2.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. Therefore, the No Action Alternative would not result in any adverse effects on geology, soils, or topography within the study area separate and apart from any other planned development.

3.2.3.2 Preferred Action Alternative

Construction Effects

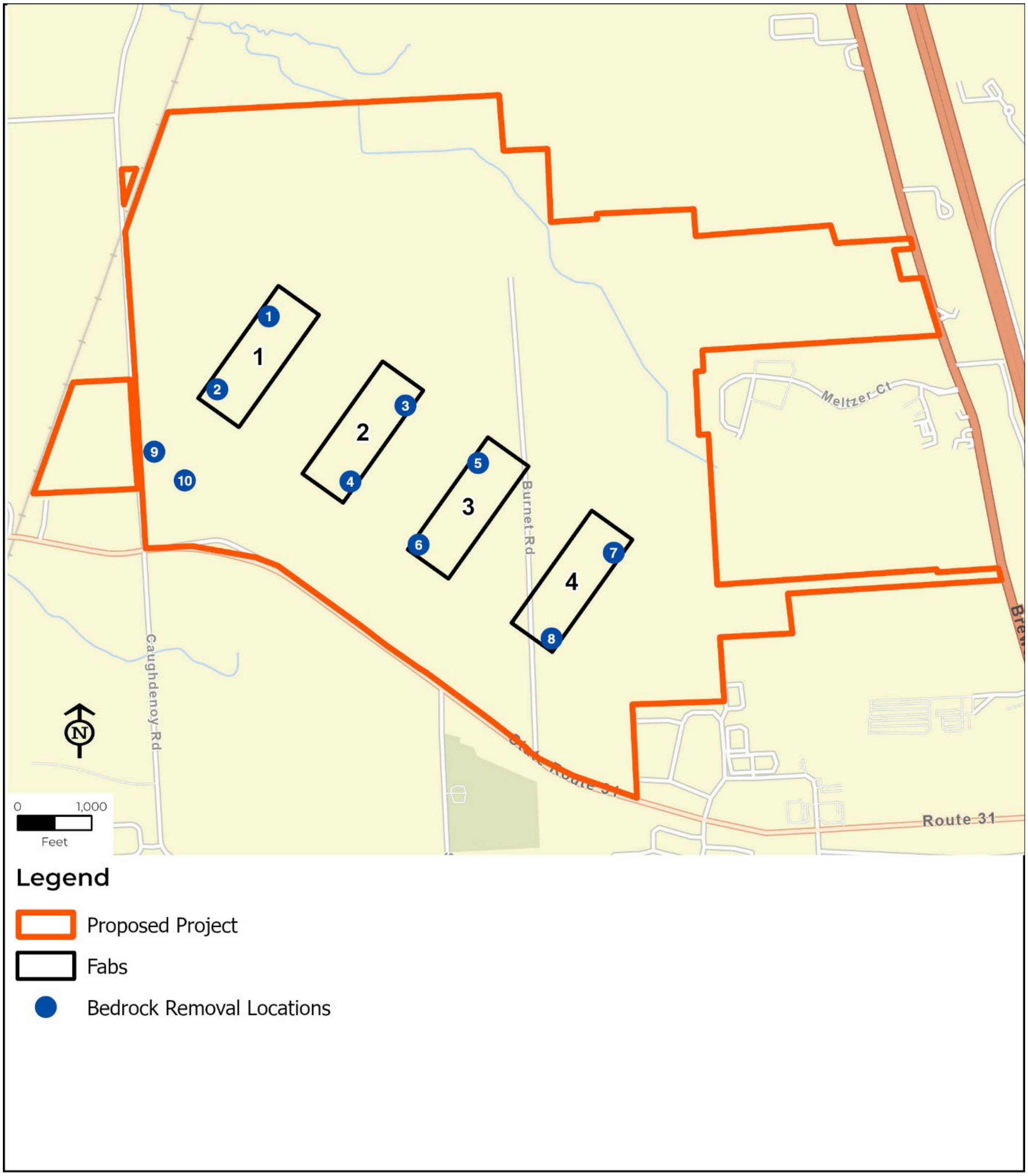
Micron Campus

Construction of the proposed Micron Campus would take place over a 16-year period, with work on each of the four fabs proceeding in several phases, some of which would overlap. This work would include site preparation, mass excavation, foundation and underground utility laying, building erection, and final site work. This proposed construction would require a total area of ground disturbance of approximately 997 acres within the WPCP, 445 acres of which are currently forested land. The construction is estimated to require: (1) the removal of 1.5 million CY of soil from the WPCP; (2) the removal of 978,000 CY of near-grade bedrock; (3) the construction of drilled pier foundations to support each of the four fabs; and (4) the import of 9 million CY of fill material to the site. The tree and vegetation clearing associated with construction activity is described in Section 3.8 (Solid Waste, Hazardous Waste, and Hazardous Materials).

First, the removal of 1.5 million CY of soil from the WPCP would be necessary to remove existing soil types with conditions that would otherwise pose compression and instability risks for construction of the manufacturing facility foundations and structures. As noted in Section 3.2.2.2, geotechnical investigations identified broad swaths of silty loams, varying degrees of erodible, compressible, and poorly drained soils, and groundwater fluctuations at the WPCP. These conditions would necessitate soil excavation across the WPCP to expose bedrock for foundation work and create space for stable fill material, as discussed below. Micron would reuse excavated soils with the Proposed Project area to the greatest extent practicable, where reuse would be consistent with soil stability requirements. Micron would reuse all excavated material smaller than six inches for structural fill within four feet of the bottoms of proposed foundations and slabs and as much of the remaining excavated material as practicable for non-structural purposes, such as landscaping. However, excavation would likely encounter varying amounts of boulders, cobbles, or other material that may not be reusable. All soil excavation activities would be managed in accordance with Micron's Soil and Materials Management Plan (SMMP), which is discussed further in Section 3.8 (Solid Waste, Hazardous Waste, and Hazardous Materials), with an outline of a SMMP included as Appendix K-7. Section 3.8 also discusses handling of excess excavated material and spoil generated from site construction. See Section 3.3 (Water Resources) for discussion of potential effects on water resources during excavation activities.

Second, the removal of 978,000 CY of near-grade bedrock from the WPCP would be necessary to accommodate the construction of the four fabs, each of which requires specialized foundations and sufficient below-grade or "sub-fab" building space to house various aspects of the necessary physical and utility infrastructure to support the fabs and their cleanrooms. As noted in Section 3.2.2.1 and as shown in Figure 3.2-1, the geotechnical investigations identified near-grade depth to bedrock at various locations across the WPCP where the fabs would be built, with particularly shallower bedrock depths in the southwestern portion of the WPCP. Figure 3.2-4 and Table 3.2-4 below show the ten bedrock removal locations that would be required for construction, along with estimated removal area LODs and removal volumes.

Figure 3.2-4 Bedrock Removal Locations



Source: Langan Memorandum February 14th, 2025 (Langan, 2025).

Table 3.2-4 Bedrock Removal Locations and Volumes

Map ID #	Approximate Location	Approximate Area of Rock Removal LOD	Estimated Rock Removal Volume
1	Northwestern portion of Fab 1 (North Pit)	60,000 sq. ft.	7,000 CY
2	Southwestern portion of Fab 1 (South Pit)	60,000 sq. ft.	33,500 CY
3	Northeastern portion of Fab 2 (North Pit)	60,000 sq. ft.	7,000 CY
4	Southeastern portion of Fab 2 (South Pit)	60,000 sq. ft.	28,000 CY
5	Northwestern portion of Fab 3 (North Pit)	60,000 sq. ft.	6,500 CY
6	Southwestern portion of Fab 3 (South Pit)	60,000 sq. ft.	31,500 CY
7	Northeastern portion of Fab 4 (North Pit)	60,000 sq. ft.	6,500 CY
8	Southeastern portion of Fab 4 (South Pit)	60,000 sq. ft.	31,500 CY
9	Stormwater management area-15	317,000 sq. ft.	46,000 CY
10	Stormwater management area-05	181,000 sq. ft.	3,500 CY
	Total	978,000 sq. ft.	201,000 CY

Source: Langan Memorandum dated February 14th, 2025 (Langan, 2025). Note: the bedrock removal LODs are larger at locations 9 and 10 because these areas would involve construction of stormwater management ponds as opposed to drilled pier foundations.

The bedrock removal work would require a combination of standard and heavy-duty equipment and techniques depending on the size and extent of bedrock encountered at each of the removal locations. Standard construction equipment (e.g., excavator or backhoe) would be sufficient to excavate most small to medium segments of bedrock. However, larger segments would likely require mechanical devices, such as hydraulic hammers mounted on excavators, to break the bedrock into smaller pieces suitable for excavation and removal. In certain limited locations, blasting operations may be necessary as a last resort to fragment the largest segments of bedrock. Blasting would produce ground vibrations that may travel as seismic waves through the geology surrounding the blasting locations (Office of Surface Mining Reclamation and Enforcement, 2025).

In addition, blasting may produce air blasts and fly rock. All bedrock removal activity, including any blasting operations (if needed), would be conducted in accordance with applicable state and local blasting safety regulations, as well as with Micron's Blasting Plan (included in Appendix E-5). The Blasting Plan provides for blasting by a licensed New York State blaster and addresses: standards of conduct; blast design and preparation of blasting safety plans for each blast; signs, signals, and traffic control; emergency procedures; and reporting and recordkeeping.

Third, based on the geotechnical investigation findings and Micron's Proposed Project design criteria, construction of the Micron Campus would involve the use of drilled pier foundations as an alternative to driven piles. Drilled piers typically generate less construction noise compared to pile driving and also reduce the need for deeper excavation activity. Construction of the Micron Campus foundations would require drilling and placement of approximately 25,200 20-foot piers drilled 3.6 to 4.6 feet into bedrock, or 6,300 drilled piers for each fab. The piers would range in diameter from 42 to 66 inches. The drilled pier foundations would be designed to meet the building code standards for the seismic conditions of the region. In addition to the drilled piers, construction of each fab foundation would involve laying 8-inch and smaller crushed and compacted aggregate base material followed by placement of the mat/slab foundation or building pad. Further construction and site stabilization would involve erection of the fab skeletal concrete and steel structures and the building shell. Dewatering would be performed as necessary during construction to allow for proper building footings, foundations, and waterproofing.

Fourth, the import of 9 million CY of stable and clean fill material to the site would be necessary to replace excavated soils and surficial material and achieve required soil stability and final site grading, which would range from 385 feet above sea level in the northern portions of the site to 425 feet near NYS Route 31, consistent with present topographical conditions. After maximum practicable reuse of on-site excavated material, imported fill material would be sourced from readily available NYSDOT- and NYSDEC-approved virgin quarry sources, such as from the 133 granular material and stockpile sites located within 50 miles of Syracuse (NYSDOT, 2024a), and the 927 such sites located throughout the State. Due to the number of available quarry sources, it is anticipated that there would be adequate volume to meet the needs of the Proposed Project without adversely affecting regional supply.

The fill material would be transported to the Rail Spur Site primarily by rail, with additional shipments by truck. Rail cars would transport up to 1,500 short tons per hour of aggregate fill material during construction windows. As noted above, reusable excavated material or imported fill material smaller than 6 inches, as well as sandy soils generated during grading activity, would be used for structural fill within four feet of the bottoms of foundations and slabs. Larger reusable or imported material may be used at greater depths, subject to strict placement controls to avoid loss of material into voids between boulders. Due to the sensitive silty soils present at the WPCP noted in Section 3.2.2.2, in addition to soil removal, various supportive measures may be needed during construction, such as undercuts and replacement with granular fill to stabilize failed or unstable grades, and geotextile or geogrids to provide structural reinforcement, plus thicker subbase course and asphalt underlying areas to be paved.

In addition to using only NYSDOT- and NYSDEC-approved clean fill, Micron would need to obtain an individual stormwater permit for construction activity for the Proposed Project under the NYSDEC SPDES permit program. Given the scope of the Proposed Project, Micron would request a waiver from the program's 5-acre disturbance limitation. Micron also would be required to develop a SWPPP incorporating sediment and erosion control measures, which Micron would implement prior to and consistently maintain and monitor during construction (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP). Construction activity would also be subject to SPDES General Permit requirements for additional site inspections and reporting to ensure that soil disturbing activities would limit erosion. See Section 3.3 (Water Resources) for further discussion of stormwater and other discharge limitations.

In sum, construction of the Micron Campus, including the soil excavation, bedrock removal, pier drilling and foundation laying, and fill material activity, would result in substantial permanent changes to the existing geology and soil conditions of the WPCP and would permanently alter the existing topography. To avoid significant adverse effects, Micron would implement relevant BMPs and conduct construction activities in accordance with mitigation plans and all applicable laws and regulations, including the SPDES permit terms and conditions and SWPPP requirements.

Rail Spur and Childcare Sites

Construction of the Rail Spur Site would require approximately 24 acres of ground disturbance on the 38-acre site. In addition to tree clearing, the construction would require up to 85,000 CY of soil removal and import of up to 150,000 CY of fill material to achieve final site grading, followed by installation of new rails to support Rail Spur Site operations.

Construction of the Childcare Site would require 13 acres of ground disturbance on the 31-acre site. The construction would also require up to 50,000 CY of soil removal and import of up to 25,000 CY of fill material to achieve final site grading.

Standard construction equipment (e.g., excavator or backhoe) would be sufficient to excavate most small to medium segments of bedrock at the Rail Spur and Childcare Sites. However, larger segments would likely require mechanical devices, such as hydraulic hammers mounted on excavators, to break the bedrock into smaller pieces suitable for excavation and removal. In certain limited locations, blasting operations may be necessary as a last resort to fragment the largest segments of bedrock. As with the Micron Campus, all construction activity at the Rail Spur and Childcare Sites would be subject to Micron's Blasting Plan, all applicable laws and regulations, and permit terms and conditions, including SPDES and SWPPP requirements and implementation of sediment and erosion controls to minimize any soil erosion or downslope migration of aggregate material.

Connected Actions

Construction of the Connected Action improvements would involve ground disturbance across the various utility properties and routes. Construction also would require soil removal, and potentially the import of some fill material at certain locations. Rock removal may be required; however, blasting is not anticipated. In these areas, rock removal would be achieved primarily through chipping where necessary. Construction activities, such as bedrock removal, would result in permanent changes to existing geology at the Connected Action areas. However, BMPs for rock removal would be utilized during construction activities to avoid significant adverse effects on geologic conditions.

As noted in Section 3.2.2.2, construction of the new utility lines (new natural gas line, water transmission lines, and industrial wastewater conveyance) would span approximately 420 acres of land predominantly occupied by sandy loams. These soils are generally favorable soils for construction and would not be expected to pose risks for construction activity. Construction methods for the utility lines would include cut-and-cover (i.e., excavating trenches, laying pipe, and re-covering the trenches), jack and bore drilling, and HDD.

Construction of the new natural gas line would require extending a 16-inch diameter natural gas line from National Grid GRS 147 at 4459 NYS Route 31 to the Micron Campus. The new water line would involve construction of a new service connection from OCWA's existing Eastern Branch Transmission Main south of NYS Route 31 to the Micron Campus via a 99-foot-wide easement along Caughdenoy Road. The OCWA LOWTP is primarily occupied by cut and fill indicative of past soil disturbance due to development and would be suitable for additional development. The new industrial wastewater conveyance system would be constructed between the new IWWTP at the Oak Orchard site and a new industrial wastewater pumping station that would be constructed on the Micron Campus.

Connected Action construction activity would be subject to applicable laws and regulations, and terms and conditions of any required permits or approvals, which may include conditions relating to potential discharges to water resources, stormwater management measures, sediment and erosion controls, or noise and vibration mitigation measures. For additional information on Connected Action effects in these areas, see Sections 3.3 (Water Resources) and 3.12 (Noise and Vibration).

Operational Effects

At full build-out, the Proposed Project and Connected Actions would not be anticipated to generate any further disturbance to geology, soils, or topography in the study area. Final grading would be in place at all sites, and all sites would be stabilized with hard surfaces, landscaping, and post-development stormwater management facilities, which would stabilize soil conditions, control stormwater runoff, and prevent erosion and sedimentation during storm events. All new structures would be in place as permanent new features. Full build-out of the Micron Campus would result in 645 acres of new impervious surface, including asphalt and concrete cover, and 58 acres of semi-pervious surface. The remaining areas of the campus would be permeable land consisting of stormwater areas, softscape, water easements, gravel, bioretention, and undisturbed land. Approximately 273 acres of the permeable land would remain forested land. The new utility lines and conveyances would be located underground and would not be anticipated to result in any long-term changes to surface topography. Therefore, the Preferred Action Alternative would not result in significant adverse operational effects on geology, soils, or topography.

Growth Inducing Effects

This section analyzes the indirect effects on geology, soils, and topography from induced growth, consistent with the methodology and study area outlined in Appendix C. The Preferred Action Alternative would result in growth inducing effects on geology, soils, and topography to the extent that increased demand for new housing and businesses would result in new development and attendant effects on geological conditions. As noted previously, the Proposed Project would likely induce substantial new residential and commercial development over an extended period of time, but the specific locations and scale of such new development cannot be predicted at this time (see growth inducing effects under Section 3.1.3.2), and collecting and analyzing information such as site-specific soil suitability conditions at every potential new construction location across the five-county study area is beyond the scope of this EIS.

Future development scenarios resulting in potentially significant broad-scale effects on geology, soils, and topography in the study area cannot be ruled out but would likely occur over many years at the pace of broader development and socioeconomic trends in the five-county region and would be subject to independent environmental review. Further, Onondaga County, where most induced development would likely occur, generally exhibits geological conditions broadly suitable for new development. In addition, new development projects would continue to be subject to state and local discretionary approvals, including requirements relating to stormwater protection plans and erosion and sediment control measures to minimize potential effects on underlying geology.

Summary of Effects

Construction of the Proposed Project would include removal of substantial volumes of soil and bedrock, and extensive fill and grading of more than 1,000 acres across the Micron Campus, Rail Spur Site, and Childcare Site, plus activity across additional sites and utility routes to construct the Connected Actions, resulting in permanent changes to these resources. These construction activities would be conducted in accordance with Micron's mitigation plans as well as the SPDES program and SWPPP requirements, including sediment and erosion control measures. With these BMPs and mitigation plans in place, significant adverse effects on the existing geology, soils, and topography in the study area would be avoided.

3.2.4 BMPs and Mitigation Measures

As noted above, Micron would implement several BMPs for soil and bedrock removal, pier drilling, and use of fill material throughout construction activities, as shown in Table 3.2-5 below. In addition, Micron would adhere to its Blasting Plan (if needed) and SMMP during construction.

Table 3.2-5 Best Management Practices

Activity	BMP Description
Construction	Implement the SMMP, which discusses handling of excess excavated material and spoil generated from site construction.
Construction	If blasting is deemed necessary in certain locations, implement the Blasting Plan, which provides for blasting by a licensed New York State blaster and addresses: standards of conduct; blast design and preparation of blasting safety plans for each blast; signs, signals, and traffic control; emergency procedures; and reporting and recordkeeping.
Construction (Micron Campus)	Construction of the Micron Campus would involve the use of drilled pier foundations as an alternative to driven piles. Drilled piers typically generate less construction noise compared to pile driving and also reduce the need for deeper excavation activity.
Construction	Monitor groundwater levels in 17 monitoring wells to minimize the effects on groundwater drawdown. Adaptive management would be used throughout construction and would involve targeted surface and groundwater monitoring before, during, and after construction to characterize the relationship between surface water and groundwater, assess flow characteristics of the water resources study area, and identify if modifications would be required in the design, construction, and

	management of the Proposed Project to minimize and avoid impacts to stormwater.
Construction	Implement and maintain BMPs identified in the SWPPP (see Section 3.3, Water Resources) to minimize potential soil erosion and reduce the amount of stormwater flowing into disturbed areas. Restore temporarily disturbed areas consistent with the SWPPP to minimize effects on soils and prevent erosion.
Construction; Operation	Implement and maintain BMPs identified in the SPDES permit (see Section 3.3, Water Resources) related to wastewater and wet weather-related discharges from point- and non-point sources.

With the implementation of these BMPs, the Preferred Action Alternative would not result in significant adverse effects on geology, soils, or topography. Therefore, no mitigation measures are proposed.

3.3 WATER RESOURCES

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative on water resources. Water resource types include wetlands, surface water, stormwater, groundwater, floodplains, and coastal resources, and are discussed in Section 3.3 in that order.

This EIS includes 48 figures for the Water Resources section. For ease of reference, these figures have been assembled in Appendix F-5 and are labeled as Figure F-1 through F-48.

3.3.1 Water Resources Study Area

The Proposed Project and Connected Actions would result in changes to water resources. This section considers the relationship of these changes to the water resources study area.

The water resources study area encompasses the combined outermost geographic extent of the direct and indirect physical, biological, and chemical effects that could potentially result from the construction and operation of the Proposed Project and Connected Actions.

The Proposed Project study area encompasses the Youngs Creek and Shaver Creek watersheds and is shown in Figure 3.3-1 and Figure F-1 in Appendix F-5

The Connected Actions study area encompasses nine sub-watersheds and is shown in Figure 3.3-2 and Figure F-2 in Appendix F-5. However, effects from the Connected Actions would be limited to their individual LODs, except for the IWWTP, which would discharge treated wastewater into the Oneida River.

For additional information on the water resources study area, see Appendix F-1.

Figure 3.3-1 Proposed Project Water Resources Study Area Map

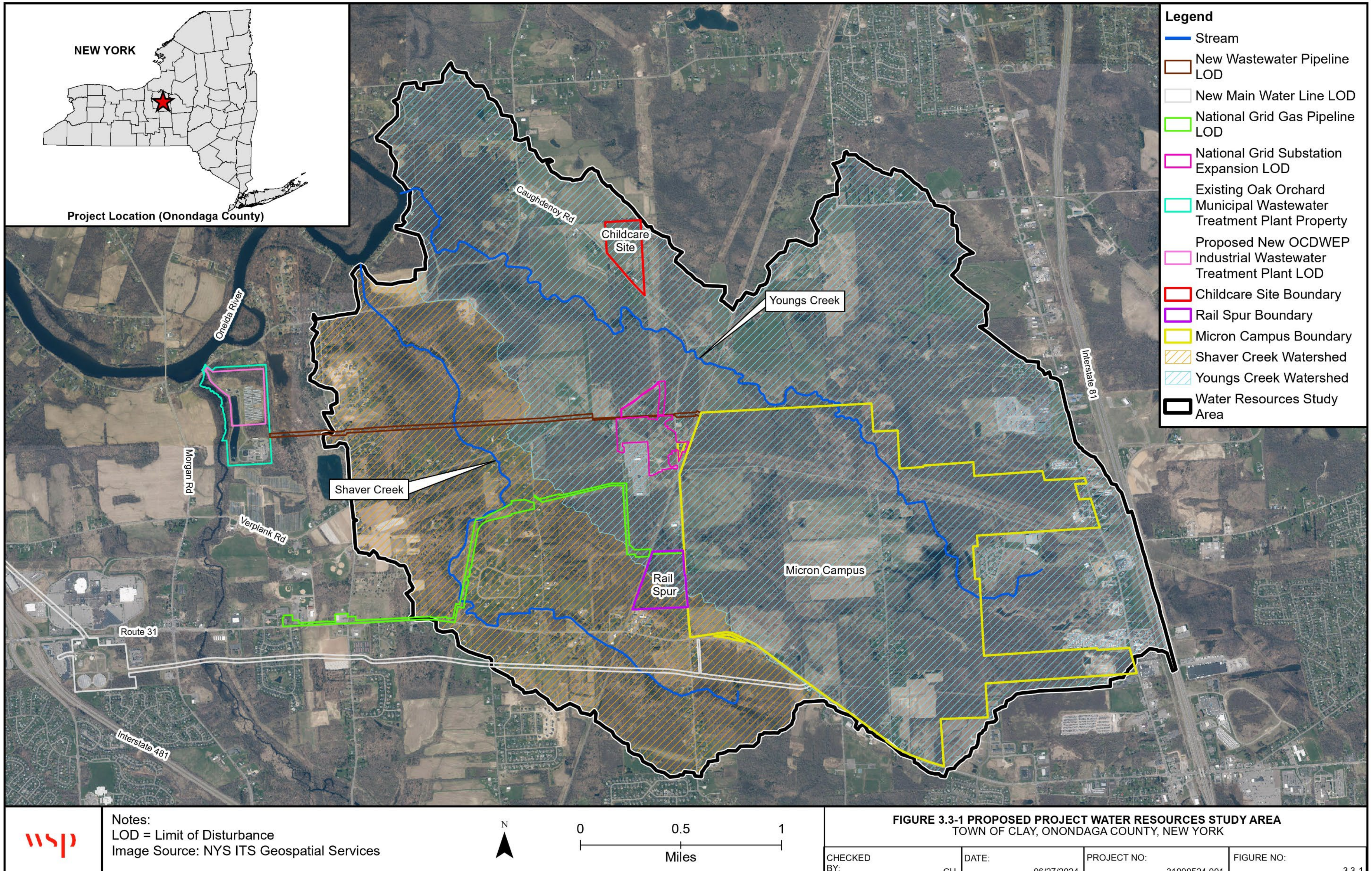
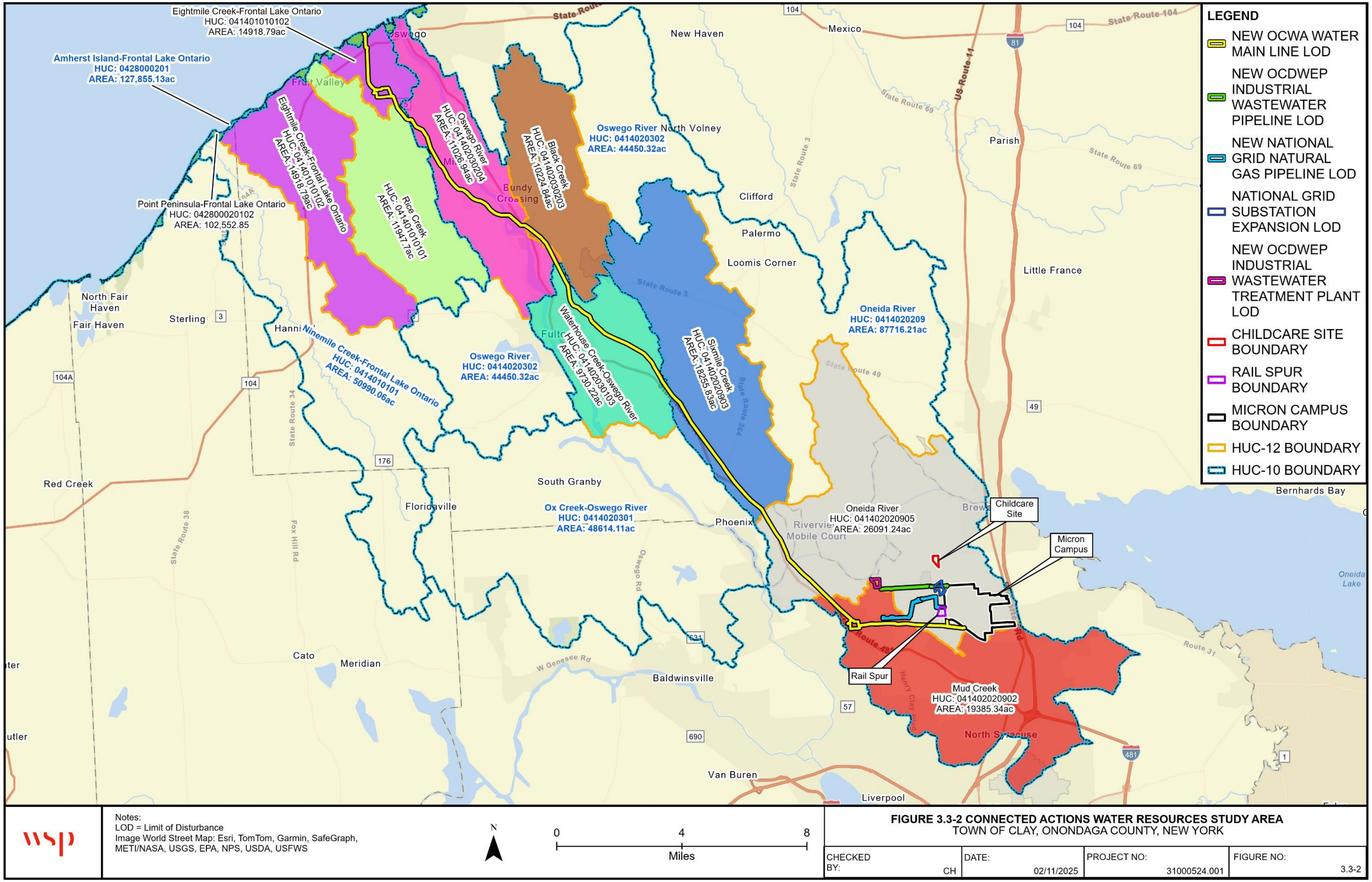


Figure 3.3-2 Connected Actions Water Resources Study Area



3.3.2 Legal and Regulatory Setting

The Proposed Project and Connected Actions require consultation with Federal and State agencies with jurisdiction over Federally- and State-protected water resources. Table 3.3-1 below identifies the laws and regulations relevant to the analysis in this section. Table 3.3-2 identifies the permits and approvals relevant to water resources required for various components of the Proposed Project and Connected Actions. For additional information on the laws and regulations and permits and approvals relevant to water resources, including those at the local level, see Appendix F-2.

Table 3.3-1 Laws and Regulations

Law or Regulation	Resource
Federal	
CWA Section 301 (33 U.S.C. § 1331)	Wetlands and Surface Water
CWA Section 401 (33 U.S.C. § 1341); 2023 Water Quality Certification Improvement Rule	Wetlands and Surface Water
CWA Section 402 (33 U.S.C. § 1342)	Wetlands and Surface Water
CWA Section 404 (33 U.S.C. § 1344)	Wetlands and Surface Water
Rivers and Harbors Act Section 10 (33 U.S.C. § 403)	Surface Water
Executive Order 11988, Floodplain Management	Floodplains
CZMA (16 U.S.C. § 1451 *et seq.*)	Coastal Resources
State	
Freshwater Wetlands Act (New York ECL Article 24); 6 NYCRR Parts 663-665	Wetlands
Protection of Waters Program (ECL Article 15 Title 5); 6 NYCRR Part 608	Wetlands and Surface Water
Water Pollution Control (ECL Article 17); 6 NYCRR Part 750	Wetlands and Surface Water
Participating in Flood Insurance Programs	Floodplains
Article VII of the New York State Public Service Law (Siting of Major Utility Transmission Facilities)	All
Sole Source Aquifer Protection (ECL Article 55)	Groundwater
Prohibition of Certain Incompatible Uses Over Either Primary Groundwater Recharge Areas or Federally Designated Sole Source Aquifers (ECL Article 15, Title 5, § 15-0514)	Groundwater
The Coastal Erosion Management Program (ECL Article 34; 6 NYCRR Part 505)	Coastal Resources
The Waterfront Revitalization of Coastal Areas and Inland Waterways Act (New York State Executive Law, Article 42)	Coastal Resources

Table 3.3-2 Permits and Approvals

Permit or Approval	Agency	Components
CWA Section 404 Individual Permits	USACE	Micron Campus; Rail Spur Site; Substation Expansion; Natural Gas; Water Supply; Wastewater
Rivers and Harbors Act Section 10 Permit	USACE	Water Supply
CWA Section 401 Water Quality Certification	NYSDEC; NYSPSC	Micron Campus; Rail Spur Site; Substation Expansion; Natural Gas; Water Supply; Wastewater
Protection of Waters Permit (ECL Article 15, Title 5)	NYSDEC	Water Supply; Wastewater
Water Withdrawal Permit (ECL Article 15, Title 15)	NYSDEC	Water Supply
Freshwater Wetlands Permit (ECL Article 24, Title 7)	NYSDEC	Micron Campus; Childcare Site; Natural Gas; Water Supply; Wastewater
New York State Public Service Law Article VII Certificate of Environmental Compatibility and Public Need	NYSPSC	Substation Expansion; Electric Transmission
SPDES General Permit for Stormwater Discharges from Construction Activity (CGP)	NYSDEC	Micron Campus; Rail Spur Site; Childcare Site; Substation Expansion; Natural Gas; Water Supply; Wastewater
SPDES MSGP for Stormwater Discharges from Industrial Activities	NYSDEC	Micron Campus; Rail Spur Site; Wastewater
SPDES Individual Wastewater Permit	NYSDEC	Wastewater
Town of Clay Floodplain Development Permit	Town of Clay	Water Supply; Wastewater
Town of Schroeppel Floodplain Development Permit	Town of Schroeppel	Water Supply
Town of Schroeppel Freshwater Wetlands Permit	Town of Schroeppel	Water Supply
City of Oswego Floodplain Development Permit	City of Oswego	Water Supply

New York State Coastal Management Program Federal Consistency Review and Determination	NYSDOS; City of Oswego; Town of Clay	Water Supply
Onondaga County Sanitary Code – Septic Tank Approval	Onondaga County Department of Health	Childcare Site

3.3.3 Affected Environment

This section describes the affected environment (existing conditions) for the six water resource types relevant to the analysis in Section 3.3 (wetlands, surface water, stormwater, groundwater, floodplains, and coastal resources).

Additional information on the Affected Environment relevant to the analysis of Proposed Project and Connected Action effects is included in Appendix F-3.

3.3.3.1 Wetlands

USACE and USEPA define the term “wetlands” under the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Under the New York State Freshwater Wetlands Act, NYSDEC defines wetlands as lands and waters of the State that support aquatic or semi-aquatic vegetation, including marshes, swamps, sloughs, bogs, and flats, those that contain remnants of any terrestrial vegetation that has died because of wet conditions over a sufficiently long period, and those substantially enclosed by aquatic or semi-aquatic vegetation or by dead terrestrial vegetation. In more common language, wetlands are areas where the frequent and prolonged presence of water at or near the soil surface drives the natural system, meaning the kinds of soils that form, the plants that grow, and the fish and wildlife communities that use the habitat (USEPA, 2025a).

This section focuses on the current extent, condition, and physical characteristics of existing wetlands within the water resources study area. The section summarizes information from Ramboll.

Ramboll delineated the surface area coverage in acres of all wetlands within the boundaries of the proposed Micron Campus site, Rail Spur Site, and Childcare Site. Ramboll obtained confirmations of wetland jurisdictional statuses as either Federal jurisdictional (based on Preliminary or Approved Jurisdictional Determinations (PJDs or AJDs) issued by USACE under the CWA),[34] State jurisdictional (based on determinations issued by NYSDEC under ECL Article 24), or non-jurisdictional (for wetlands identified as definitively excluded from Federal and State jurisdiction). For additional information on wetlands in the study area, see Appendix F-3.1. For maps of Federal, State, and non-jurisdictional wetlands at the Proposed Project and Connected

[34] AJDs are final binding determinations, whereas PJDs only verify wetland extents and boundaries but are not final determinations by USACE of their jurisdictional status. Consistent with USACE Regulatory Guidance Letter 16-01, wetlands evaluated using a PJD are being treated as waters regulated under the CWA.

Action locations, see Figures F-3 through F-23. The official Federal and State jurisdictional determinations are included in Appendix F-6.

Ramboll conducted field delineations identifying 24 wetland complexes within the proposed Micron Campus site consisting of a total of 408.61 acres of wetlands potentially subject to USACE jurisdiction. USACE verified the boundaries of these wetlands through PJDs issued in February and October 2024 (included in Appendix F-6). For a map of the delineated Federal jurisdictional wetlands within the proposed Micron Campus site boundaries, see Figure F-3.

Ramboll classified delineated Federal jurisdictional wetlands based on the commonly used classification system developed by Cowardin et al. as described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). In this system, wetlands are classified by landscape position, vegetation cover, and hydrologic regime (frequency, duration, and magnitude of soil saturation). The system includes five major wetland categories: marine, estuarine, lacustrine, palustrine, and riverine (USEPA, 2025a). Ramboll classified delineated State jurisdictional wetlands based on the classification of palustrine and lacustrine (i.e., ponded waters situated in topographic depressions) wetlands developed by Edinger et al. as described in *Ecological Communities of New York State* (Edinger et al. 2014). Table 3.3-3 below briefly describes the Federal palustrine (i.e., non-tidal inland) wetland types and the State palustrine and lacustrine wetland types that Ramboll identified in its wetland delineations.

Table 3.3-3 Federal and State Wetland Types

Wetland Type	Description
Federal Palustrine Wetland Types	
Palustrine Open Water (POW)	Small (less than 8 hectares), shallow, non-flowing bodies of water in which persistent vegetation covers less than 30 percent of the substrate.
Palustrine Emergent (PEM)	Non-tidal wetlands in which 30 percent or more ground coverage is from herbaceous plants.
Palustrine Scrub/Shrub (PSS)	Non-tidal wetlands in which 30 percent or more ground coverage is from woody vegetation less than 20 feet in height.
Palustrine Forested (PFO)	Non-tidal wetlands in which 30 percent or more ground coverage is from woody vegetation equal to or greater than 20 feet in height.
State Palustrine and Lacustrine Wetland Types	
Shallow Emergent Marsh (SEM)	Marsh meadow communities that occur on mineral soils or deep muck soils (rather than true peat) that contain a mixture of species or a single dominant species.
Deep Emergent Marsh (DEM)	Marsh communities that occur on mineral soils or fine-grained organic soils (muck or well-decomposed peat) that contain a mixture of species or a single dominant species.
Shrub Swamp (SS)	Inland wetlands dominated by tall shrubs that occur along shorelines, in wet depressions, or as a transition between wetland and upland communities.

Red Maple-Hardwood Swamp (RMHS)	Hardwood swamps that occur in poorly drained depressions or basins, usually on inorganic soil, and typically dominated by red maple (*Acer rubrum*).
Hemlock-Hardwood Swamp (HHS)	Swamps that occur on mineral soils and deep muck in depressions which are typically dominated by eastern hemlock (*Tsuga canadensis*).
Floodplain Forest (FF)	Hardwood forests that typically occur on mineral soils on low terraces of river floodplains and river deltas.
Farm Pond / Artificial Pond (FP/AP)	Small ponds that typically lack permanent flowing inlets and outlets and are constructed on agricultural or residential property.

Sources: Cowardin et al. (1979); Edinger et al. (2014).

Ramboll further classified delineated Federal and State jurisdictional wetland complexes based on their principal and suitable ecological functions and services. Table 3.3-4 includes brief descriptions of these functions and services.

Table 3.3-4 Wetland Functions and Services

Function / Service	Description
Groundwater Recharge / Discharge	This function considers the potential for a wetland to serve as a groundwater recharge or discharge area. Recharge relates to the potential for the wetland to contribute water to a groundwater aquifer. Discharge relates to the potential for the wetland to serve as an area where groundwater can be discharged to the surface.
Floodflow Alteration	This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.
Fish and Shellfish Habitat	This function considers the effectiveness of seasonal or permanent waterbodies associated with the wetland to support fish and shellfish.
Sediment / Toxicant / Pathogen Retention	This function reduces or prevents degradation of water quality through physical processes. It relates to the effectiveness of the wetland as a trap for organic and inorganic particulates, toxicants, or pathogens.
Nutrient Removal / Retention / Transformation	This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries through burial, incorporation into biomass, or biochemical reactions.
Production Export	This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms.
Sediment/Shoreline Stabilization	This function relates to the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.
Wildlife Habitat	This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge, including resident and migrating species.

Threatened or Endangered Species Habitat	This service relates to the effectiveness of the wetland or associated waterbodies to support threatened or endangered species.

Source: USACE (1999).

Ramboll classified the 408.61 acres of delineated Federal jurisdictional wetlands identified within the proposed Micron Campus site as a mixture of 1.7 acres of palustrine open water (POW) wetlands (<1 percent), 223.04 acres of palustrine emergent (PEM) wetlands (54.6 percent), 30.30 acres of palustrine scrub/shrub (PSS) wetlands (7.4 percent), and 153.57 acres of palustrine forested (PFO) wetlands (37.6 percent). The POW wetlands Ramboll identified include several old farm ponds and active and inactive beaver ponds. Plants identified in the PEM wetlands include goldenrods, asters, purple loosestrife (*Lythrum salicaria*), and ferns. The PSS wetlands are dominated by various dogwood species (*Cornus* spp.). Plants identified in the PFO wetlands include red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), and American elm (*Ulmus americana*) (Micron, 2025).

NYSDEC confirmed that 18 of the 24 Federal jurisdictional wetland complexes that Ramboll identified on the proposed Micron Campus site also contain a total of 398.75 acres of Class II State jurisdictional wetlands.[35] NYSDEC issued its jurisdictional determinations for the site in February 2024 (included in Appendix F-6). Of these 398.75 acres, only 0.45 acres in wetland complex W2 do not overlap with the Federal jurisdictional wetlands. For a map of the delineated State jurisdictional wetland categories and boundaries, see Figure F-4. Ramboll classified the 398.75 acres of delineated State jurisdictional wetlands identified within the proposed Micron Campus site as a mixture of 65.58 acres of shallow emergent marsh (16.4 percent), 151.93 acres of deep emergent marsh (38.1 percent), 29.49 acres of shrub swamps (7.4 percent), 53.37 acres of red maple-hardwood swamps (13.4 percent), 3.18 acres of hemlock-hardwood swamps (<1 percent), 94.54 acres of floodplain forest (23.7 percent), and 0.66 acres of open water farm ponds / artificial ponds (<1 percent).

Ramboll delineated an additional 13.14 acres of wetlands within the proposed Micron Campus site that, based on AJDs issued by USACE, are not under Federal jurisdiction. These are also not considered State jurisdictional by NYSDEC (see Appendix F-6). Ramboll classified these wetlands as a mixture of 8.34 acres of PEM wetlands, 1.19 acres of POW wetlands, 2.72 acres of PSS wetlands, and 0.89 acres of PFO wetlands and described them as generally consisting of either old farm furrows or other isolated depressions that do not empty or drain into another wetland or waterbody. These non-jurisdictional wetlands are shown in Figure F-5.

Ramboll identified one potentially Federal jurisdictional wetland complex (W49), totaling 17.27 acres, during field delineations at the proposed Rail Spur Site, as reflected in a USACE AJD issued on May 17, 2024 (see Appendix F-6). The wetland was classified as a mixture of 0.40 acres of POW habitat (2.3 percent), 0.26 acres of PSS habitat (1.5 percent), and 16.61 acres of PFO wetlands (96.2 percent). This wetland complex is shown in Figure F-6.

[35] Class II jurisdictional wetlands in New York are those that meet specific criteria for their ecological and functional importance. These wetlands are characterized by, among other things, the presence of endangered or rare species, productive vernal pools, specific plant communities, or locations within floodplains, sole source aquifers, or near impaired waters.

Ramboll did not identify any State jurisdictional wetlands regulated by NYSDEC within the Rail Spur Site boundaries, but identified four additional wetlands (W42, W42a, W47, and W48) at the Rail Spur Site that USACE and NYSDEC confirmed are neither Federal nor State jurisdictional. These non-jurisdictional wetlands total approximately 0.67 acres and were classified by Ramboll as a mixture of 0.47 acres of PEM wetlands, 0.11 acres of palustrine unconsolidated bottom (PUB) habitat, 0.06 acres of PSS wetlands, and 0.03 acres of PFO wetlands. They were described as generally consisting of isolated depressions that do not empty or drain into another water feature. These non-jurisdictional wetlands are shown in Figure F-7.

Ramboll identified one potentially Federal jurisdictional wetland complex (W52), totaling 4.51 acres, during field delineations at the Childcare Site, as reflected in a USACE PJD issued on October 11, 2024 (see Appendix F-6). This complex is also being treated as a Class II State jurisdictional wetland, but the NYSDEC jurisdictional determination is still pending. The wetland was classified as a mixture of 2.63 acres of PEM / shallow emergent marsh wetlands (58.3 percent) and 1.88 acres of PFO / mature floodplain forest habitat (41.7 percent) (see Figures F-8 and F-9). One additional wetland at the Childcare Site containing 0.06 acres of PEM habitat was determined to not qualify as Federal jurisdictional based on an AJD issued by USACE (see Figure F-10). This wetland also is currently being treated as non-jurisdictional under the State Freshwater Wetlands Act. However, a NYSDEC jurisdictional determination is still pending.

Table 3.3-5 below shows the delineated Federal and State jurisdictional wetland acreages and the non-jurisdictional wetlands identified within all Proposed Project areas, along with each wetland complex's principal and suitable ecological functions and services. Figure 3.3-3 shows the connection between aquatic resources (surface water and wetlands) on the site to Traditional Navigable Waterways (TNW).

Figure 3.3-3 Surface Water and Wetland Connections to Traditional Navigable Waters

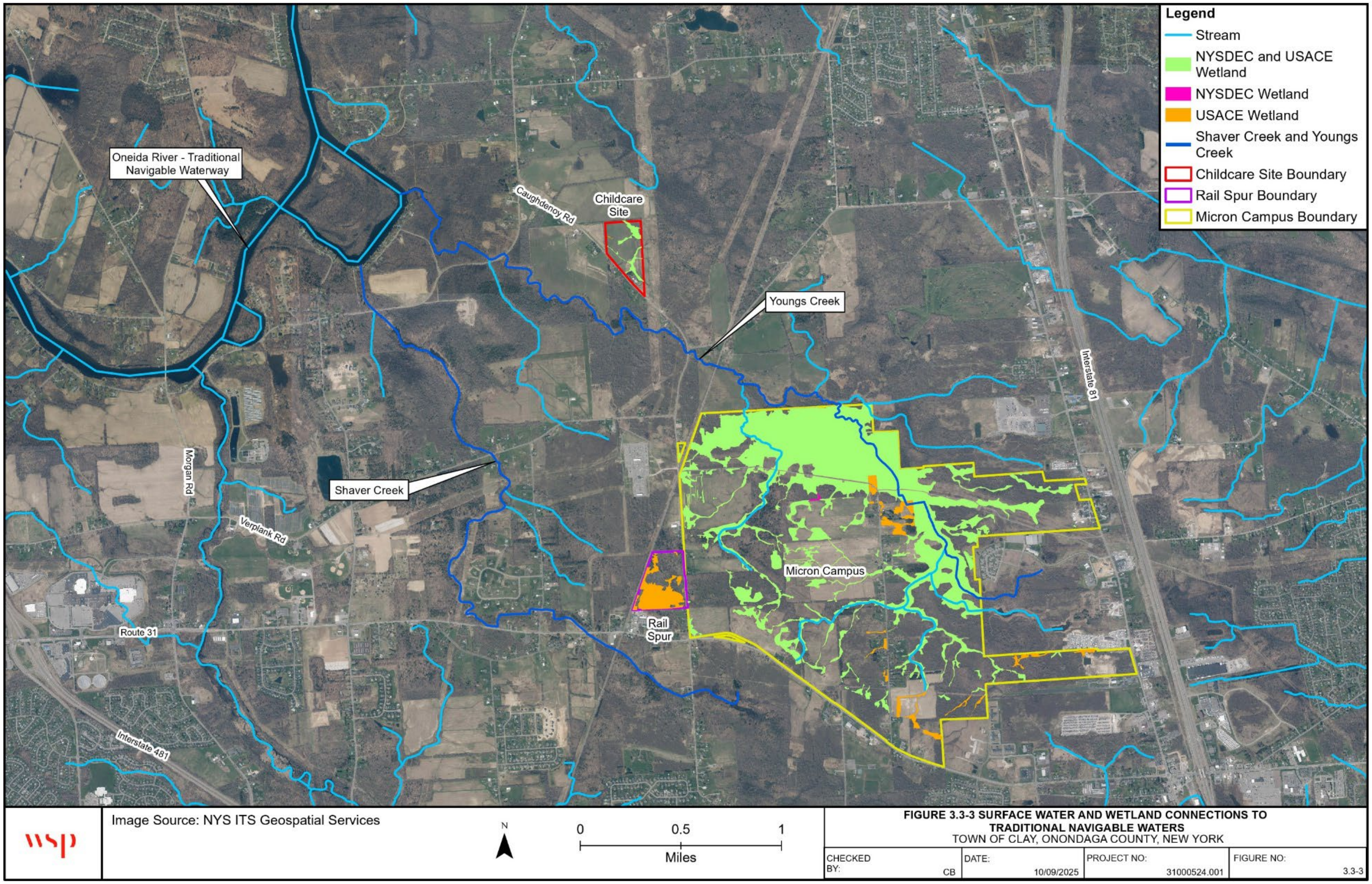


Table 3.3-5 Federal, State, and Non-Jurisdictional Wetland Acreages

Wetland	Federal	State	Functions and Services[a]
Micron Campus			
W1	18.34	18.34	Wildlife Habitat[P] and Endangered Species Habitat
W2	38.53	38.98	Wildlife Habitat[P] and Endangered Species Habitat
W3	5.96	5.96	Wildlife Habitat[P] and Endangered Species Habitat
W5	7.75	7.75	Wildlife Habitat[P] and Endangered Species Habitat
W6a	0.38	0.38	Wildlife Habitat[P] and Endangered Species Habitat
W11	19.20	19.20	Wildlife Habitat[P]; Endangered Species Habitat; Floodflow Alteration
W12	0.50	0.0	Wildlife Habitat[P] and Endangered Species Habitat
W13	0.81	0.0	Wildlife Habitat[P] and Endangered Species Habitat
W14	0.35	0.0	Wildlife Habitat[P] and Endangered Species Habitat
W26	1.3	0.0	Wildlife Habitat[P] and Endangered Species Habitat
W28	0.49	0.04	Wildlife Habitat[P] and Endangered Species Habitat
W29	1.08	0.38	Wildlife Habitat[P] and Endangered Species Habitat
W34	109.71	106.43	Floodflow Alteration[P]; Sediment / Toxicant Retention[P]; Wildlife Habitat[P]; Groundwater Recharge / Discharge; Fish and Shellfish Habitat; Nutrient Removal; Production Export; Sediment / Shoreline Stabilization; Endangered Species Habitat
W35	181.86	181.86	Floodflow Alteration[P]; Sediment/Toxicant Retention[P]; Wildlife Habitat[P]; Groundwater Recharge / Discharge; Fish and Shellfish Habitat; Nutrient Removal; Production Export; Sediment / Shoreline Stabilization; and Endangered Species Habitat
W40	0.88	0.88	Wildlife Habitat[P]; Floodflow Alteration; and Endangered Species Habitat
W53	4.78	4.78	Wildlife Habitat and Endangered Species Habitat
W54	8.26	8.26	Wildlife Habitat
W55	4.71	4.71	Wildlife Habitat and Endangered Species Habitat
W61	1.97	0.0	Wildlife Habitat[P]; Floodflow Alteration; Nutrient Removal; and Endangered Species Habitat
W62	0.95*	0.0	Wildlife Habitat[P]; Floodflow Alteration; Sediment/Toxicant Retention; and Nutrient Removal
W63	0.33	0.33	Wildlife Habitat[P]; Floodflow Alteration; Sediment/Toxicant Retention; and Nutrient Removal

W69	0.07	0.07	Wildlife Habitat[P]
W70	0.38	0.38	Wildlife Habitat[P] and Endangered Species Habitat
W71	0.02	0.02	Wildlife Habitat[P]
All	408.61	398.75	(Various functions and services as shown above)
Non-Jurisdictional Wetlands: 13.14			(Not evaluated)
Micron Campus Total		422.20**	(Various)
Rail Spur Site			
W49	17.27	0.0	Wildlife Habitat[P]; Floodflow Alteration; Sediment/Toxicant Retention; and Endangered Species Habitat
Non-jurisdictional wetlands: 0.67			(Not evaluated)
Rail Spur Site Total		17.94	(Various)
Childcare Site			
W52	4.51	4.51	(Not evaluated)
Non-jurisdictional wetlands: 0.06			(Not evaluated)
Childcare Site Total		4.57	(Various)
Total Proposed Project Wetland Acreages (Federal, State, and Non-Jurisdictional)			
Federal		430.39	(Various)
State		403.26	
Non-Jurisdictional		13.87	
Total		444.71*	

Sources: Ramboll (2024a); Micron (2025); Chiarello (2025a); Chiarello (2025b). Notes: *Denotes acreage calculations different from those in JD letters from USACE based on property line discrepancies identified after JDs were issued. **Micron Campus total and final total account for fact that 0.45 acres of State jurisdictional wetlands in wetland complex W2 do not overlap with Federal jurisdictional wetlands. Although the majority of Federal and State jurisdictional wetland boundaries overlap, they are not always identical, due to differences in jurisdictional statuses under the CWA and ECL Article 24. [a] = Principal and suitable functions identified using methodologies defined in *The Highway Methodology Workbook Supplement* by USACE, New England District (1999). [P] = Identified as both principal and suitable function.

A total of 78.86 acres of wetlands have been mapped or delineated within the Connected Action LODs, including the Clay Substation expansion area and the natural gas, water supply, and wastewater improvement LODs, and are being treated as jurisdictional. However, jurisdictional determinations have not yet been issued for these features, with the exception of the Clay Substation (USACE only). For additional information on these wetlands, see Appendix F-3.1.

The land surrounding wetlands are referred to as wetland buffers or wetland adjacent areas. These wetland buffers can include both upland and aquatic areas contiguous with a wetland edge. Vegetated buffers serve to control stormwater runoff, moderate water level fluctuations, decrease sediment loads, and minimize the introduction of chemical and thermal pollutants into the wetland by acting as an obstruction to water flow. Subsequently, water velocities are decreased, thus allowing infiltration and the recharging of groundwater, and the erosion potential of stormwater runoff is reduced. As a physical barrier to flowing water, the vegetation also traps sediments and other insoluble pollutants. Soluble nutrients and pollutants are also removed or transformed by the soil, bacteria, and/or plants. Vegetation scatters the sunlight and provides shade, thereby reducing water temperatures enough in the summer to retain dissolved oxygen to support fish. This cover also prevents lethal low temperatures in winter (Washington Department of Ecology, 1992). The area of intersection between the uplands and wetlands is important as a seed reservoir, as habitat for aquatic and wetland-dependent wildlife species, and as a refuge to wildlife during periods of high water (Brown and Schaefer, 1987). In the State of New York, the standard regulated wetland adjacent area is defined as 100 feet, measured horizontally from the wetland boundary. However, special circumstances (e.g. nutrient-poor bogs, productive vernal pools) can dictate the need for a wider regulated zone.

3.3.3.2 Surface Water

Surface water can include flowing bodies of water, such as rivers and streams, and non-flowing bodies of water, such as lakes and ponds. Surface water resources also can be described in terms of extent, water quantity (i.e., volume), and or water quality or condition (i.e., physical, chemical, and biological integrity). Physical surface water conditions include attributes such as temperature and clarity; chemical conditions include salinity, nutrient loads, and chemical contaminants; and biological conditions include pathogens, certain bacteria, and the status of water-dependent plant and animal populations and habitat. Surface water quality can affect the environment and human health from exposure through drinking, recreational activity, or consumption of fish and shellfish. Rivers and streams also influence the extent and condition of other water resources, including wetlands, groundwater, and downstream coastal systems. Overall, rivers and streams are vital to ecological and human health (USEPA, 2023a).

For background and information on surface water features and water quality conditions in the water resources study area, see Appendix F-3.2. For maps of rivers and streams in the study area, see Figures F-25 through F-35.

Determination of the presence and extent of streams and rivers was conducted through desktop analysis for the water supply improvement areas and through field investigations at all other areas of the Proposed Project and Connected Actions.

With respect to the Proposed Project, Ramboll identified various streambed features within the proposed Micron Campus and Childcare Site boundaries but did not identify any rivers or streams on the proposed Rail Spur Site. Specifically, Ramboll delineated 8,710 linear feet (LF) of streambed features within the proposed Micron Campus site (Figure F-25) and 18 LF of an ephemeral stream channel on the western edge of the proposed Childcare Site (Figure F-27). Ramboll requested PJDs and AJDs from USACE to verify the extent and boundaries of these delineated streambed features. Based on Ramboll's field delineations and agency staff observations, USACE provided an AJD for four streambed features in the southeast portion of the proposed Micron Campus site (labeled IS4, IS4A, RD4A, and RD4B on Figure F-25), and PJDs for the remaining features (see Appendix F-6).[36] Based on these JDs, Ramboll and Micron are treating the total 8,728 LF of these streambed features as waters subject to regulation under the

[36] AJDs are final binding determinations, whereas PJDs only verify surface water feature extents and boundaries but are not final determinations of their flow regimes or jurisdictional status. Consistent with USACE Regulatory Guidance Letter 16-01, streams evaluated using a PJD are being treated as waters regulated under the CWA.

CWA.[37] Table 3.3-6 lists their hydrologic flow regimes, length, and ordinary high water mark (OHWM) widths (marking the lateral extent of Federal jurisdiction over the waterbody).

Table 3.3-6 Delineated Federal Jurisdictional Surface Waters

Stream ID	Cowardin Classification / Flow Regime[(a)]	Length (LF)	OHWM Width (LF avg.)
IS1	R4SB – Intermittent / Riverine Stream Bed	1,411	10
IS2	R4SB – Intermittent / Riverine Stream Bed	1,532	8
IS3	R4SB – Intermittent / Riverine Stream Bed	1,355	5
IS4	R4SB – Intermittent / Riverine Stream Bed	337	5
IS4A	R4SB – Intermittent / Riverine Stream Bed	150	2
ES6[(b)]	R6 – Ephemeral	324	6
ES8[(b)]	R6 – Ephemeral	1,045	2
ES8a[(b)]	R6 – Ephemeral	134	3
ES11[(b)]	R6 – Ephemeral	490	2
ES15[(b)]	R6 – Ephemeral	298	2
ES16[(b)]	R6 – Ephemeral	430	5
ES20[(b)]	R6 – Ephemeral	795	5
ES21[(b)]	R6 – Ephemeral	209	3
PS1[(c)]	R3UB – Perennial / Upper Perennial, Unconsolidated Bottom	120	20
RD4A	R4SB – Intermittent / Riverine Stream Bed	72	2
RD4B	R4SB – Intermittent / Riverine Stream Bed	8	2
ES22	R6 – Ephemeral (Childcare Site)	18	-
Proposed Project Totals	R6 Subtotal	3,743	-
	R4SB Subtotal	4,865	-
	R3UB Subtotal	120	-
	Total	**8,728**	-

Sources: Micron (2025); Chiarello (2025a). Notes: [(a)] = Classifications and flow regimes are based on Ramboll delineations that occurred at single fixed points in time. [(b)] = At Micron's request, stream reach and extent were verified via PJDs from USACE. The PJDs only verified the stream extent and boundaries; USACE did not make final determinations regarding their flow regimes or jurisdictional status. Consistent with USACE Regulatory Guidance Letter 16-01, streams evaluated using a PJD are being treated as waters regulated under the CWA. [(c)] = The remainder of the main channel of Youngs Creek within the proposed Micron Campus

[37] Separately, Ramboll identified approximately 11,384 LF of other features on the proposed Micron Campus site (Figure F-26), which Ramboll classified as isolated roadside ditches, linear depressional features, or other stream channels that are ephemeral in nature and do not empty or drain into another jurisdictional water feature or meet the applicable "relatively permanent" standard for Federal jurisdictional status. Therefore, these features are not being treated as waters subject to regulation under the CWA.

boundaries did not have an identifiable channel or measurable OHWM width and was classified as primarily PEM or deep emergent marsh wetlands associated with wetland complexes W34 and W35 (see Section 3.3.3.1).

Of the 8,710 LF within the proposed Micron Campus boundaries, Ramboll classified 4,865 LF as intermittent (water present only during the wet portions of the year) (55.9 percent), 3,725 LF as ephemeral (water present only immediately after a precipitation event) (42.8 percent), and 120 LF as perennial (water present within the channel throughout the year) (1.4 percent) (see Figure F-25 in Appendix F-5). The intermittent and ephemeral streams are all hydrologically connected to Youngs Creek, a NYSDEC-designated Class C waterbody (waters supporting fisheries suitable for non-contact activities, but that do not support trout populations or trout spawning). Based on these classifications, none of these streams qualify as State jurisdictional "protected streams" under ECL Article 15.

A total of 7,160 LF of surface water features have been identified within the Connected Action LODs, including within the Clay Substation expansion area, natural gas, water supply, and wastewater improvement LODs and are being treated as jurisdictional. However, jurisdictional determinations have not yet been issued for these features, with the exception of the Clay Substation (USACE only). For additional information on these features, see Appendix F-3.2.

3.3.3.3 Stormwater

Stormwater is water from rain or melting snow that does not infiltrate into the ground and travels over surfaces to rivers and streams as stormwater runoff. Surfaces with high permeability (e.g., sandy soils) allow for greater stormwater infiltration, whereas surfaces with low permeability (e.g., clay soils) result in less infiltration and more stormwater runoff. Topography, land cover, soil types, and stormwater infrastructure can influence the rate at which stormwater infiltrates into the ground or runs over a surface prior to discharging into a waterbody. Shallow slopes, vegetated landscapes, and stormwater infrastructure can slow stormwater runoff, allowing more time for ground infiltration. Stormwater runoff can produce flooding and can affect wetland, surface water, groundwater, floodplain, and coastal resource water quality.

For background on how stormwater conditions in the study area would be evaluated, see Appendix F-3.3. Field work performed by Ramboll and Thew Associates identified 34 stormwater culvert locations in the Proposed Project portion of the study area where tributaries are routed and channelized beneath roads or railroad crossings (Ramboll, 2025c). For a map of these stormwater culvert locations, see Figure F-36. At this time, stormwater associated with the Connected Actions has not yet been quantified but generally occurs within existing areas beneath the Connected Action LODs as influenced by land cover, soil type, and precipitation factors.

3.3.3.4 Groundwater

Groundwater comes from precipitation that infiltrates into the ground's subsurface and travels through soil until it reaches rock material such as bedrock or an aquiclude like clay (USGS, 2018). The accumulation of water within permeable soil creates a saturated zone, also known as an aquifer, that can hold groundwater. The water table is the subsurface interface between the saturated zone and the unsaturated zone within the soil (USGS, 2019). The rate at which an aquifer can be replenished with groundwater is influenced by several factors, including precipitation rates, land cover, soil characteristics, and soil saturation.

For background and information on groundwater aquifers in the study area, see Appendix F-3.4. For maps of groundwater aquifers in the study area, see Figures F-37 through F-39. No primary or principal aquifers or sole source aquifers (SSAs) have been identified beneath the Proposed Project portion of the study area, but confined and unconsolidated aquifers exist on the western edge of the Shaver Creek watershed (see Figure F-37). These aquifers are not currently used as public drinking water sources. Instead, all public drinking water for the area is sourced from surface water resources and is distributed by OCWA. According to New York State GIS water wells data maintained by NYSDEC, only nine private domestic wells are located within approximately one mile of the WPCP. Two of the wells are located directly on the WPCP, while a third is located approximately one-quarter mile southwest of the proposed Rail Spur Site. The nine private domestic wells may be used for either drinking water or agricultural purposes.

A total of 17 groundwater monitoring wells have been installed within the Proposed Project portion of the study area as part of pre-design activities to document groundwater conditions, including quality and depth-to-water table. An additional 25 monitoring wells were installed at select locations encompassing the site in January 2025 to augment the monitoring network. Depth to bedrock within the western portion of the WPCP ranges from approximately 4 to 34 feet below grade, with groundwater occurring at depths ranging from 0.1 to 7.8 feet below grade. Groundwater flow patterns on the western side of the WPCP flow toward the north, converging into the western drainage channel that flows to Youngs Creek. Groundwater flow west of Caughdenoy Road in the area of the proposed Rail Spur Site flows southwest toward Shaver Creek (see Figure F-37).

The proposed natural gas, water supply, and wastewater improvement LODs would overlay unconsolidated aquifers in the study area at certain locations (see Figures F-38 and F-39). For information on the extent of these overlays, see Appendix F-3.4.

3.3.3.5 Floodplains

Floodplains are low-lying areas next to rivers and streams that become periodically inundated with floodwater when water levels rise and exceed the capacity of the respective watercourse. In natural undisturbed settings, floodplains provide flood water storage and dissipation with little effect on the surrounding land and infrastructure (NYSDEC, n.d.-b). In addition, floodplains often contain wetland or upland vegetation that influences the quality of the local environment, including fish and wildlife habitat. Floodplain vegetation also provides natural flood and erosion control and regulates the flow from stormwater runoff, thereby maintaining or enhancing surface water quality and groundwater recharge (FEMA, 2022).

For background and information on floodplains in the study area, see Appendix F-3.5. For maps of floodplains in the study area, see Figures F-40 through F-45. Based on review of FEMA flood insurance rate maps (FIRMs) and GIS data, the proposed Micron Campus, Rail Spur Site, and Childcare Site would all be located outside of special flood hazard areas (SFHAs) and 500-year floodplains. An area in the northwest of the Proposed Project portion of the study area where Shaver Creek and Youngs Creek discharge into the Oneida River is located in an SFHA and 500-year floodplain (see Figure F-40).

The proposed water supply and IWWTP LODs would overlay SFHAs and 500-year floodplains in certain locations (see Figures F-41 through F-45). For information on the extent of these overlays, see Appendix F-3.5.

3.3.3.6 Coastal Resources

The coastal zone is generally defined as the interface between the land and large, open waterbodies (such as Lake Ontario) or the ocean. Coastal zone areas are continually changing from the dynamic interaction between land and tides, currents, and wind-driven waves. The coastal zone is vulnerable to natural hazards associated with erosion and varying sediment deposition rates caused by these forces (Nelson, 2018).

For purposes of this FEIS, coastal resources include: (1) areas within the limits of the coastal zone boundary under the Federal Coastal Zone Management Act (CZMA). This boundary is defined as coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder) that are strongly influenced by each other and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The zone extends in Great Lakes waters to the international boundary between the United States and Canada. The zone extends inland from the shorelines only to the extent necessary to control shorelands (16 U.S.C. § 1453); (2) areas defined by the New York State Coastal Management Program (CMP) as Coastal Erosion Hazard Areas (CEHAs). These areas include natural protective features, (e.g., dunes, bluffs, beaches) and those lands located landward of natural protective features having a long-term average annual recession rate of one foot or more per year (NYSDOS, 2023); and (3) developed, natural, public, and working waterfront areas set aside by local governments and municipalities under the CMP's Local Waterfront Revitalization Program (LWRP).

For background on coastal resources in the study area, see Appendix F-3.6. For a map of the coastal zone boundary and CEHAs by Lake Ontario in the City of Oswego, where some of the water supply improvements would be built, see Figure F-46. For maps of the LWRP boundaries for the Town of Clay and the City of Oswego, see Figures F-47 and F-48.

3.3.4 Environmental Consequences

3.3.4.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility infrastructure projects or need to obtain easements for the Connected Actions.

Within the water resources study area, land use, topography, hydrology, permeability, underlying soil saturation, and runoff patterns would remain consistent with existing conditions, and no sediments, wastes, or hazardous chemicals would be introduced.

There would be no direct or indirect changes to the type or number of wetlands or wetland plant species or the number of streams or their current flow conditions. There would be no direct or indirect changes to floodplains, groundwater aquifers, coastal resources, or stormwater, and no exposure of rivers or streams to increased stormwater runoff, risks of accidental spills, nutrient loading, or habitat or hydrologic modifications.

Based on the above, there would be no loss of wetlands or wetland buffers and no displacement of wetland functions or services. There would be no effects on floodplains, their boundaries, or their functions. There would be no effects on rivers or streams, no effects on surface water quality, and no effects on groundwater or stormwater quantity, quality, or movement.

Therefore, the No Action Alternative would not have any effects on water resources.

3.3.4.2 Preferred Action Alternative

Under the Preferred Action Alternative, the Proposed Project and Connected Actions would be built in phases based on the 16-year construction period for the proposed Micron Campus (see Chapter 2, Proposed Action and Alternatives). This section analyzes the reasonably foreseeable environmental effects of the construction and operation of the Proposed Project and Connected Actions on wetlands, surface water, stormwater, groundwater, floodplains, and coastal resources within the water resources study area. Additional information relevant to the analysis of Connected Action effects on wetlands and surface water is included in Appendix F-4.

Construction Effects

Wetlands

Construction of the Proposed Project would result in the direct loss of wetlands and their functions and services from site development. In addition, wetland buffers (typically 100 feet from the edge of a wetland in the New York State) would be lost. Increased impervious surfaces could lead to indirect effects from increased stormwater runoff and decreased groundwater recharge.

Micron considered various design modifications to the Proposed Project to minimize losses of wetlands and wetland buffers. Specifically, the proposed Micron Campus layout has been designed to avoid the two most extensive wetland complexes within the site (W34 and W35) to the greatest extent practicable. The large size of the WPCP has made it possible to limit disturbance of W34 to 76.36 acres of Federal jurisdictional wetlands (saving 33.35 acres) and 73.06 acres of State jurisdictional wetlands (saving 33.37 acres), and to minimize disturbance of W35 to 24.5 acres of Federal and State jurisdictional wetlands (saving 157.36 acres). Overall, 224.14 acres of Federal jurisdictional wetlands, 223.98 acres of State jurisdictional wetlands, and 2.75 acres of non-jurisdictional wetlands would remain on the Micron Campus after construction is complete. In addition, approximately 109 acres of wetland buffers would be avoided.

The proposed Rail Spur Site layout has been designed to avoid the PFO habitat type within wetland W49 to the greatest extent practicable. Overall, losses would be minimized to 8.91 acres of Federal jurisdictional wetlands (8.42 acres of PFO wetlands, 0.40 acres of POW wetlands, and 0.09 acres of PSS wetlands), saving 8.36 acres of jurisdictional wetlands and 0.62 acres of non-jurisdictional wetlands after construction is complete.

The proposed Childcare Site layout would be designed to avoid all 4.51 acres of Federal and State jurisdictional wetlands. Overall, losses would be minimized to 0.06 acres of non-jurisdictional wetlands. The amount of wetland buffers that would be lost is unknown at this time as the design layout is still under development. However, the estimated 14.87 acres of wetland buffers at the Childcare Site would be avoided to the greatest extent practicable.

Despite these design modifications, construction of the Proposed Project would result in the permanent loss of approximately 193.38 acres of wetlands being treated as Federal jurisdictional wetlands, or approximately 174.77 acres of wetlands being treated as State jurisdictional, which completely overlap the Federal jurisdictional wetlands except for less than one acre within wetland complex W2. Construction would also result in the permanent loss of approximately 10.50 acres of non-jurisdictional wetlands and an estimated 315 acres of protected wetland buffer areas on the Micron Campus, in addition to the approximately 15 acres of wetland buffer areas that would be lost at the Childcare Site.

The permanent loss of these wetlands and wetland buffers would occur as a result of excavation, filling, and grading activities that would be necessary to create the level upland conditions required for construction of building foundations, walkways, parking lots, and all other associated Proposed Project components.

Table 3.3-7 shows the anticipated total loss of 184.47 acres of Federal jurisdictional wetlands from all construction phases of the proposed Micron Campus. When adding the 8.91 acres of Federal jurisdictional wetlands that would be lost on the proposed Rail Spur Site during Phase 1A, the total direct loss of Federal jurisdictional wetlands would be 193.38 acres. Table 3.3-7 also shows the anticipated State jurisdictional wetland losses.

Table 3.3-7 Anticipated Direct Losses of Jurisdictional Wetlands (Proposed Project)

Type	1A	1B	2A	2B	Total
Federal Jurisdictional Wetland Losses (acres) (Micron Campus phases)					
POW	0.77	0.0	0.93	0.0	1.70
PEM	37.4	6.86	49.68	0.0	93.94
PSS	9.57	1.00	8.89	0.0	19.46
PFO	55.97	0.51	10.33	2.56	69.37
All	**103.71**	**8.37**	**69.83**	**2.56**	**184.47**
State Jurisdictional Wetland Losses (overlapping with above except for <1 acre)					
SEM	35.44	3.68	9.00	0.0	48.12
DEM	0.27	0.01	40.73	0.0	41.01
SS	8.89	0.07	8.87	0.0	17.83
RMHS	39.19	0.0	6.09	0.96	46.24
HHS	3.08	0.0	0.0	0.0	3.08
FF	12.91	0.51	3.99	0.42	17.83
FP/AP	0.53	0.0	0.13	0.0	0.66
All	**100.31**	**4.27**	**68.81**	**1.38**	**174.77**
Total (accounting for overlap* and 8.91 acres on Rail Spur Site): 193.83					

Sources: Chiarello (2025a, 2025b, and 2025c). Notes: There would be no anticipated loss of State jurisdictional wetlands for the Rail Spur or Childcare Sites. *Total losses account for fact that 0.45 acres of State jurisdictional wetlands in wetland complex W2 do not overlap with Federal jurisdictional wetlands.

The permanent loss of these wetlands from construction of the Proposed Project, the majority of which are considered to be high quality wetlands, would eliminate their principal and suitable wetland functions and services, as described in Appendix F-3.1. These losses would constitute a significant adverse effect on water resources. As part of its application for a CWA Section 404 dredge and fill permit from USACE, and a Freshwater Wetlands Permit (ECL Article 24, Title 7) from NYSDEC, Micron has proposed a compensatory mitigation plan (Mitigation Plan) to offset these losses. For additional information on Micron's proposed mitigation, see Section 3.3.5. A copy of the Mitigation Plan is included in Appendix F-7. Mitigation for State wetland buffer losses for the Micron Campus would not be required, because the wetlands themselves would be lost. These losses would be covered under the Mitigation Plan, as described above. The loss of State wetland buffers on the Childcare Site would be mitigated within that property boundary to ensure that wetland functions and benefits are not lost or impaired.

The permanent loss of 193.83 acres of jurisdictional wetlands in total would also result in indirect long-term effects on the remaining wetlands as a result of subsequent changes in hydrology, including increased stormwater runoff and decreased groundwater recharge. The permanent loss of a minimum of 315 acres of wetland buffer areas may further increase the indirect effects on remaining wetlands. Table 3.3-8 describes the potential effects of these changes on the remaining wetlands.

Table 3.3-8 Potential Indirect Effects on Remaining Wetlands

Resulting Indirect Effects	
Increased Stormwater Runoff	
Downgradient Flooding	Wetland plants are adapted to a certain amount of water in the soil and length of time the soil is saturated (hydroperiod). In areas where stormwater runoff could cause increased flooding (e.g., topographical depressions), changes in wetland plant species composition and density may occur. This is primarily due to the higher water levels and length of soil saturation time which can cause oxygen-deficient soil conditions. These conditions impact plant growth and functions including, but not limited to, photosynthesis, water, mineral, and nutrient uptake, and hormonal balance.
Soil Erosion	Wetlands slow and reduce stormwater runoff; increased stormwater runoff from the loss of wetlands can lead to erosion over land surfaces, which can further alter topography and adversely affect downgradient water quality by increasing turbidity and sedimentation.
Water Quality Degradation	Wetlands have the ability to filter nutrients and pollutants from stormwater prior to discharging to downgradient wetlands and surface water. The loss of wetlands can create excess amounts of these substances, which can decrease the ability of remaining wetlands to remove them, which would lead to decreased water quality.
Decreased Groundwater Recharge	
Habitat Shift	The loss of wetlands can lead to decreased groundwater recharge or isolate and cut off remaining wetlands from their water runoff supply sources. This can lead to lower water levels and length of soil saturation time, which can result in a gradual habitat shift from wetlands dominated by hydrophytic (i.e., water-loving) vegetation to uplands dominated by species typically found in drier environments. Degradation of the remaining wetland environment may eventually lead to additional wetland losses.
Altered Soil Chemistry	Changes to the length of soil saturation time can also alter marsh soil chemistry, which may further reduce plant productivity.

Sources: Manghwar et al. (2024); Haaf et al. (2015).

To minimize indirect effects on remaining wetlands, Micron would implement stormwater BMPs to reduce runoff rates, reduce erosion of disturbed land and downgradient sedimentation, and protect stormwater from contamination before and during Proposed Project construction activities. These measures are described further below under Stormwater. The reduced runoff rate would also promote groundwater recharge and maintenance of the downgradient wetland hydroperiod.

Based on current mapped and delineated wetlands within the Connected Action LODs, construction of the Connected Actions would result in the permanent loss of a total of 6.40 acres of wetlands being treated as Federal jurisdictional wetlands, including 4.04 acres within the proposed Clay Substation expansion area, 0.087 acres within the natural gas improvement LOD, and 2.27 acres within the IWWTP LOD. The 2.36 acres lost within the natural gas improvement LOD and the IWWTP LOD are also being treated as State jurisdictional wetlands. The natural gas improvement project is also anticipated to result in the permanent conversion of 0.033 acres of

PFO and 0.132 acres of PSS wetlands to PEM wetlands from ROW maintenance (e.g., clearcutting, grubbing).

Construction also would result in temporary effects on a total of 72.30 acres of wetlands, including 4.30 acres within the Clay Substation expansion area (being treated as Federal jurisdictional only), 7.12 acres within the natural gas improvement LOD (being treated as both State and Federal jurisdictional), 53.62 acres within the water supply improvement LOD (being treated as both State and Federal jurisdictional), and 7.26 acres within the wastewater improvement LOD (being treated as both State and Federal jurisdictional). For additional information on these effects, see Appendix F-4.1.1. Temporary effects associated with the duct bank work for the Clay Substation expansion area are included in the analysis of effects on wetlands for the Proposed Project, because that work would occur within the Micron Campus property boundary.

Surface Water

Construction of the Proposed Project would result in loss of surface water features and their functions and services from site development. The losses would alter local hydrologic conditions and could lead to indirect effects on downgradient surface water conditions.

Micron considered various design modifications to the Proposed Project to minimize losses of surface water features to the maximum extent practicable. Specifically, the proposed Micron Campus layout has been designed to avoid construction in the perennial main channel of Youngs Creek identified by Ramboll. Construction of the Micron Campus would only affect Youngs Creek in areas now defined as wetlands and other tributary features identified as intermittent or ephemeral. The proposed Childcare Site layout has been designed to avoid losses to the 18 LF of stream channel identified along the western edge of the site boundary (Ramboll, 2024b). As noted in Section 3.3.3.2, no rivers or streams were identified at the proposed Rail Spur Site.

Despite these design modifications, construction of the Micron Campus would result in the permanent loss of 6,283 LF of stream channels within the Youngs Creek basin being treated as Federal jurisdictional, as a result of excavation, filling, and grading activities that would be necessary to create the level upland conditions required for construction of building foundations, walkways, parking lots, and all other associated Micron Campus components. These losses would include 2,585 LF of intermittent streams (41.1 percent) and 3,698 LF of ephemeral streams (58.9 percent). There would be no losses of State jurisdictional river or stream features or any surface water features in the Shaver Creek basin. Table 3.3-9 shows the anticipated losses of Youngs Creek basin stream channels by Micron Campus construction phase.

Table 3.3-9 Anticipated Direct Losses of Federal Jurisdictional Streams

Cowardin Classification / Flow Regime*	1A	1B	2A	2B	Total
R6 – Ephemeral	1,564	0.0	1,813	321	3,698
R4SB – Intermittent / Riverine Stream Bed	2,061	0.0	524	0.0	2,585
Total	**3,625**	**0.0**	**2,337**	**321**	**6,283**

Sources: Micron (2025); Chiarello (2025a). Notes: Values are in LF. *Classifications and flow regimes are based on Ramboll delineations that occurred at single fixed points in time. At Micron's request, stream reach and extent were verified via PJDs from USACE. The PJDs only verified the stream extent and boundaries; USACE did not make final determinations regarding their flow regimes or jurisdictional status. Consistent with USACE Regulatory Guidance Letter 16-01, streams evaluated using a PJD are being treated as waters regulated under the CWA. There would be no direct losses of streams classified as R3UB.

The permanent loss of headwater streams within the Youngs Creek basin would cause the loss of their principal functions, including wildlife habitat, retention of organic and inorganic particulates, nutrients, and contaminants, and stabilization of the beds, banks, and floodplains of Youngs Creek and its tributaries. Secondary functions would also be lost, including the ability to transport woody debris and sediment to influence stream bed forms and provide thermal regulation (Micron, 2025). The loss of these stream channels, in combination with the wetland losses described above, would constitute a significant adverse effect on water resources. As part of its application for a CWA Section 404 dredge and fill permit from USACE, and a Protection of Waters Permit (ECL Article 15, Title 5) from NYSDEC, Micron has proposed a Mitigation Plan to offset these losses. For additional information on Micron's proposed mitigation, see Section 3.3.5. A copy of the Mitigation Plan is included in Appendix F-7.

These losses also would alter local hydrologic conditions and result in indirect long-term effects on remaining downgradient river and stream channels and their water quality conditions, as described in Table 3.3-10.

Table 3.3-10 Potential Indirect Effects on Remaining Rivers and Streams

Resulting Indirect Effects	
Altered Hydrologic Conditions	
Altered Transport	The elimination of surface water flow from Youngs Creek headwater streams could indirectly reduce controlled water flow conditions and alter the transport of sediment, coarse and fine organic matter (e.g., detritus), nutrients, and invertebrates that are critical to downstream hydrologic, geomorphic, and biological processes.
Downstream Flooding	The loss of headwater streams could lead to increased stormwater runoff and local or downstream flooding in Youngs Creek and Shaver Creek; when excess stormwater enters a stream at a fast rate, the receiving stream may not be deep enough or wide enough to be able to handle the increased volume and flow.
Stream Bank Erosion	When excess stormwater enters a stream at a fast rate, streambanks may be subject to erosion. This could lead to larger amounts of sediment being transported downstream. Deposition of this sediment and siltation within Youngs Creek and Shaver Creek could further increase local and downstream flooding and adversely affect downgradient water quality by increasing turbidity and sedimentation.
Soil Erosion	The loss of headwater streams could lead to increased stormwater runoff and erosion over land surfaces; this could alter topography and increase total suspended soil particulates entering remaining river and stream channels. Deposition of these soils could further increase local and downstream flooding, which could further erode stream banks and adversely affect downgradient water quality by increasing turbidity and sedimentation.
Adverse Water Quality Conditions	
Excess Pollution Loads	Headwater streams and wetlands have the ability to filter and reduce the release of pollutants (e.g., pesticides, fertilizers, petrochemicals, salts). The loss of surface water features associated with Youngs Creek could increase pollutant loads entering the stream system through uncontrolled stormwater runoff, which could adversely affect

	surface water chemistry and decrease water quality over time. Increased pollutant loads could lead to detrimental impacts on aquatic plant and animal species.
Increased Water Temperature	Headwater streams often have dense riparian vegetation that provides shade and receives substantial cool groundwater input. When these streams and adjacent vegetated areas are lost, the water downstream becomes warmer. The loss of headwater streams associated with Youngs Creek could also lead to shallower water depths, which are more susceptible to temperature fluctuations. Higher water temperatures can negatively affect cold-water fish species and other aquatic organisms that rely on stable thermal conditions.
Increased Turbidity	Soil and stream bank erosion caused by the loss of headwater streams could increase the amount of suspended soil and sediment particulates carried downstream. Increased levels of suspended particulates in water correlates with an increase in turbidity levels, which can adversely affect water quality and aquatic organisms by increasing water temperatures and decreasing dissolved oxygen levels.
Excess Nutrient Loads	Headwater streams and wetlands have the ability to filter and reduce the release of nutrients (e.g., nitrogen and phosphorus). The loss of headwater streams and wetlands associated with Youngs Creek and Shaver Creek could increase the amount of nutrients entering downgradient rivers and streams. This could result in eutrophication of the receiving waterbody, decreasing dissolved oxygen levels.
Excessive Aquatic Algae / Weeds	Eutrophication caused by excess nutrient loads can induce excessive algal growth (often forming harmful algal blooms) or increase aquatic weed growth, which can further decrease dissolved oxygen levels, impair water clarity, produce unpleasant odors, and ultimately harm aquatic life by causing fish kills and disrupting the ecosystem balance.

Sources: MacDonald and Coe (2007); Gomi et al. (2002); Ohio EPA (2015); USEPA (2021); USEPA (2024a).

To minimize indirect effects on remaining rivers and streams, Micron would implement stormwater BMPs to reduce runoff rates, reduce erosion of disturbed land and downgradient sedimentation, and protect stormwater from contamination before and during Proposed Project construction activities. These measures are described further below under Stormwater.

Based on current mapped and delineated rivers and streams within the Connected Action LODs, construction of the Connected Actions would result in the permanent loss of a total of 1,545 LF of regulated ditches being treated as Federal jurisdictional, all within the proposed Clay Substation expansion area. Construction also would result in temporary effects on a total of 3,491 LF of rivers and streams being treated as Federal jurisdictional, including 380 LF within the substation expansion area, 175 LF within the natural gas improvement LOD, 2,835 LF within the water supply improvement LOD, and 101 LF within the wastewater improvement LODs. For additional information on these effects, see Appendix F-4.1.2.

Stormwater

Construction of the Proposed Project and Connected Actions may alter existing land cover and soil type characteristics that influence stormwater infiltration. Activities such as clearing, grubbing, excavation, and land disturbance involve the removal or disturbance of vegetation and soil within construction footprints. Because vegetation and topography slow the movement of stormwater, removing or disturbing these features can directly affect stormwater runoff by reducing infiltration time and increasing runoff flow, which could exacerbate stream bank erosion and habitat destruction, and cause flooding and infrastructure damage, depending on the intensity of precipitation events and the extent of impervious surfaces.

Micron, National Grid, OCWA, and OCDWEP would implement various stormwater BMPs to reduce stormwater runoff rates, reduce erosion of disturbed land and downgradient sedimentation, and protect stormwater from contamination before and during Proposed Project and Connected Action construction activities. BMPs to reduce runoff rates would include stone check dams, slope stabilization with turf matting, perimeter dikes or swales, and rock outlet protection. BMPs to provide temporary stabilization and reduce erosion and sedimentation would include silt fencing, stone outlet sediment traps, compost filter socks, and compost filter bag sediment traps. BMPs to prevent sediment transport would include temporary gravel roads and stabilized construction accesses. All BMPs would be designed to meet the performance criteria in the *New York State Standards and Specifications for Erosion and Sediment Control* manual (NYSDEC, 2016), or the version in effect at the time of approval given the phased development, and would be appropriately documented in relevant SWPPPs. Stormwater management areas would be designed to meet the requirements of the *New York State Stormwater Management Design Manual* (NYSDEC, 2024a), or the version in effect at the time of approval given the phased development, to ensure waters of the State are protected from adverse impacts of construction stormwater runoff and no downgradient increases in stormwater quantity would occur (NYSDEC, 2025a) (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP).

In addition, Micron, National Grid, and OCWA would use adaptive stormwater management informed by groundwater monitoring well data and supported by the Surface Water Report to determine the need for modifications to Proposed Project or Connected Action designs to avoid or minimize effects from stormwater runoff. The Surface Water Report is an in-depth evaluation of the surface water dynamics, emphasizing the existing and projected hydrologic conditions influenced by the flat topography and soil characteristics of the Micron Campus. The report simulates flow patterns across various storm events to illustrate how water interacts within the jurisdictional wetlands and floodplains. It highlights the significance of strategic stormwater management practices designed to maintain pre-development flow conditions and ensure wetland connectivity, essential for ecological health. This detailed analysis is part of Ramboll's Wetland Adaptive Assessment and Management Plan and supports regulatory compliance. It also informs ongoing wetland assessment, permitting, and adaptive management efforts to protect water quality and sustain wetland functions. The Surface Water Report and Wetland Adaptive Management Plan, among other items, have been submitted for review and approval to the USACE as Appendix O of the permit application for the CWA Section 404 permit. These documents have been made publicly available through that ongoing permitting process.

The application of adaptive management practices in response to changing conditions and new information collected from groundwater and surface water monitoring would be structured in a Wetland Adaptive Assessment and Management Plan. This plan would provide a structured framework for long-term protection and resilience of site wetlands under changing conditions or unanticipated impacts. It would be designed to ensure effective monitoring and preservation of wetland connectivity throughout the project lifecycle. Key components would include:

- Performance Monitoring: Includes hydrology (depth, seasonal pattern of water levels in a wetland [timing, duration, and frequency of inundation or saturation], and surface/groundwater connectivity) and vegetation (dominant species, coverage, invasive species presence).

- Data-Driven Management: Results will inform ongoing maintenance (e.g., clearing blockages in swales) or corrective actions (e.g., additional mitigation). Annual assessments will recommend management interventions where thresholds are exceeded.
- Mitigation Contingencies: Onsite mitigation is prioritized, using restored or enhanced wetland features. Offsite compensatory mitigation will be identified in coordination with NYSDEC/USACE if site-based solutions are insufficient.

Local municipalities would be responsible for overseeing implementation of these stormwater BMPs and adaptive management measures before and during construction activities in their areas. Of the 42 groundwater monitoring wells installed as part of pre-design activities, 17 would provide a basis for developing adaptive stormwater management measures. Information gathered from the remaining 25 monitoring wells, the additional 15 surface water monitoring points (7-culvert and 8-channel), and the five piezometer wells proposed to be installed within wetlands around the WPCP, would be periodically assessed to determine if any alterations would need to be made to the stormwater management measures. No baseline data is available yet as the groundwater monitoring wells and equipment were just recently installed.

Based on the above requirements and measures, Proposed Project and Connected Action construction activities would not result in significant adverse effects from stormwater runoff.

Groundwater

As noted in Section 3.3.3.4, no primary or principal aquifers or SSAs have been identified beneath the Proposed Project portion of the study area, but confined and unconsolidated aquifers exist on the western edge of the Shaver Creek watershed (see Figure F-37). These aquifers are not currently used as public drinking water sources. Instead, all public drinking water for the area is sourced from surface water resources and is distributed by OCWA. In addition, there are only nine private domestic wells within approximately one mile of the WPCP, including two directly on the WPCP and one approximately one-quarter mile southwest of the proposed Rail Spur Site, which may be used for drinking water or agricultural purposes.

Construction of the Proposed Project would require clearing and grubbing of existing vegetation and soil excavation. Vegetation removal may change runoff characteristics within construction areas, which could reduce stormwater infiltration and groundwater recharge. Dewatering, which involves pumping groundwater out of excavation areas to allow for dry working conditions, would be performed as necessary during Proposed Project construction to allow for proper building footings, foundations, and waterproofing. Dewatering may lower the local water table, which could cause changes to the surrounding hydraulic gradient that could affect groundwater movement and availability. Construction also would require substantial volumes of fill material, which could alter groundwater movement and storage capacity.

Construction of the septic system associated with the childcare facility would require excavation for the installation of a septic tank and leach field. Construction would be permitted by NYSDOH and comply with NYCRR Title 10 Part 75, which outlines the standards for an individual on-site wastewater treatment system. Groundwater effects associated with construction of the septic system would primarily relate to dewatering of excavated areas, which would not be expected to be adverse. The effects of operating the septic system are discussed under Operational Effects.

Forty-two groundwater monitoring wells have already been installed at strategic locations around the WPCP as part of pre-design activities. Information gathered from these monitoring wells would be periodically assessed for changes that would warrant alterations to Proposed Project design and construction. Micron would continue to conduct targeted and comprehensive surface and groundwater monitoring before, during, and after Proposed Project construction to inform adaptive management as needed, as an additional measure to avoid and minimize potential effects on groundwater and nearby domestic wells. Such practices may include managed aquifer recharge, integrated water resource management, or investing in natural infrastructure to promote groundwater recharge, filtration, infiltration, and storage. Groundwater adaptive management practices would be outlined in the Wetlands Adaptive Assessment and Management Plan and designed to ensure groundwater hydrology is maintained at a level equivalent to pre-construction conditions. No baseline data is available yet as the groundwater monitoring wells and equipment were just recently installed.

If required based on the amount of groundwater withdrawal needed for any dewatering activities, Micron would obtain a Water Withdrawal permit and implement a dewatering plan. As described above under Stormwater, Micron also would implement stormwater BMPs, such as soil stabilization, detention ponds, infiltration basins, perimeter swales, stone check dams, silt fencing, and diversions to prevent, reduce, or store increases in stormwater runoff during construction and promote groundwater recharge, filtration, infiltration, and storage.

As part of its SPDES CGP and to avoid and minimize potential effects on groundwater, Micron would implement a SWPPP (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP) and SPCC/SPR Plan to reduce the risk of accidental releases, leaks, or spills of materials such as concrete, oil, fuel, lubricants, or hydraulic fluids during construction and provide for immediate containment and cleanup of any release.

The natural gas, water supply, and wastewater improvement LODs would overlay approximately 86.53 acres of unconsolidated aquifers. In particular, the IWWTP would overlay 6.65 acres of a principal aquifer in Onondaga County and the water supply lines would overlay 43.97 acres of the Fulton primary aquifer in Oswego County.

Construction of the Connected Actions would require clearing and grubbing of existing vegetation and soil excavation. Although required excavation depths for the Connected Actions are not known at this time, dewatering also may be performed as necessary as part of temporary cut and cover trenching, which would be the primary construction method used for most of the linear improvements. Construction may also require fill material at certain locations.

If required, National Grid, OCWA, and OCDWEP would obtain site-specific Water Withdrawal permits and implement dewatering plans for these activities, and would implement stormwater BMPs as appropriate to promote groundwater recharge, filtration, infiltration, and storage. Changes in land cover associated with construction of the Connected Actions would be mostly temporary and limited to the extent of the Connected Action LODs. If required, National

Grid, OCWA, and OCDWEP also would obtain SPDES CGPs and develop SWPPPs and SPCC/SPR Plans to reduce the risk of accidental releases, leaks, or spills during construction activities and provide instructions for immediate containment and cleanup of any release.

Based on the above requirements and measures, Proposed Project and Connected Action construction activities would not result in significant adverse effects on groundwater.

Floodplains

Construction of the Proposed Project and Connected Actions may alter existing land cover and topography, which could lead to temporary and permanent alterations in existing hydrology, including increases in surface water and stormwater runoff rates, particularly during large rainfall events, which could potentially lead in turn to expanded floodplain boundaries and increases in flood elevation levels. Exposure of disturbed and easily erodible surfaces also may lead to erosion and sedimentation in downstream waterways that could affect floodplain functions.

Effects from these changes on floodplains within the Proposed Project portion of the study area would be minimal given that the proposed Micron Campus, Rail Spur Site, and Childcare Site are not directly on or adjacent to any SFHAs or 500-year floodplains; only a portion of the study area to the west of the Childcare Site includes such floodplains. Several of the stormwater BMPs and SMPs that Micron would implement as part of the Proposed Project would provide on-site stormwater detention, which would avoid or minimize effects from construction stormwater runoff on downstream receiving waters that could reduce floodplain functions or storage capacity, or increase flood risk or frequency. Micron also would implement adaptive management practices to monitor surface water levels and assess water inflow and outflow due to seasonal variations and precipitation events before, during, and after construction.

As outlined in Appendix F-3.5, 28.28 acres of the water supply improvement LODs and 1.36 acres of the IWWTP LOD would be located within regulated floodplains. Construction activities in these areas may include excavation, trenching, grading, HDD, or temporary water impoundment or diversion structures for channel crossings. However, construction work in navigable waters would be subject to Rivers and Harbors Act Section 10 permits from USACE and possible Protection of Waters Permits from the State. Construction activities in SFHAs would be subject to floodplain development permits from the relevant municipalities, including any permit conditions requiring floodplain damage prevention measures. Further, most of these construction activities would be temporary. The water supply lines would be installed below ground, with the ground restored to original grade, and would not permanently occupy any floodplain surface areas.

Based on the above requirements and measures, Proposed Project and Connected Action construction activities would not result in significant adverse effects on floodplains.

Coastal Resources

No Proposed Project components would be located within the coastal zone in New York State or within the Town of Clay or City of Oswego LWRP boundaries. Construction of the new water supply line terminating at the RWPS would be within the coastal zone boundary but would not be within any CEHAs. Construction of the proposed water supply improvements and wastewater conveyance with portions of their LODs within the City of Oswego and Town of Clay LWRPs would primarily involve temporary cut and cover trenching activities. OCWA and OCDWEP would adhere to erosion and sediment control standards and incorporate construction BMPs to ensure these activities would be consistent with Federal and State coastal resource use policies and the Clay and Oswego LWRPs. In addition, the new IWWTP within the Town of Clay LWRP is unlikely to be visible above the tree line from off-site. Any potential visibility would likely occur through existing vegetation and would be anticipated to be extremely limited in extent.

Based on the above, Proposed Project construction activities would have no effects on coastal resources, and Connected Action construction activities would not result in significant adverse effects on coastal resources.

Operational Effects

Wetlands

The Proposed Project as a whole is anticipated to result in a permanent increase in impervious surface coverage of approximately 28 million sq. ft. (653 acres), including approximately 645 acres at the Micron Campus, 4.3 acres at the Rail Spur Site, and 2.6 acres at the Childcare Site. Impervious surfaces would include building foundations, parking lots, driveways and access roads, and other surfaces.

As discussed under Construction Effects, the loss of wetlands and conversion of surface area to impervious surfaces could lead to subsequent changes in hydrology, including increased stormwater runoff and decreased groundwater recharge. Stormwater runoff can also accumulate and carry pollutant loads downgradient, which could result in adverse effects on water quality and plant and wildlife species.

In addition to the stormwater BMPs that Micron would undertake as part of the Proposed Project design (described above under Construction Effects), Micron would be required to implement post-construction stormwater management practices (SMPs) as a condition of its SPDES stormwater construction permit (CGP), which would be used to meet MSGP effluent limitations for stormwater discharges from industrial activities. These SMPs are described in further detail under Stormwater. In general, the SMPs would be designed to accommodate, slow, and hold stormwater runoff and to filter out the pollutants they would carry from the impervious surfaces. This would subsequently recharge groundwater and ensure that the hydroperiod for downgradient wetlands would not be significantly affected.

The Connected Actions are anticipated to result in permanent increases in impervious surface coverage, in particular within the Clay Substation expansion area, from facility upgrades at the LOWTP and Terminal Campus, and within the IWWTP LOD. The full extent of increased impervious surface coverage that would be associated with the Connected Actions cannot be determined at this time. However, National Grid, OCWA, and OCDWEP would implement similar SMPs to reduce post-construction stormwater runoff from operation of the Connected Actions. The IWWTP would be required to implement such SMPs as a condition of its SPDES CGP, and the SMPs would be used to meet MSGP effluent limitations for stormwater discharges from the IWWTP. Many of the other Connected Actions would involve installation of underground utilities in trenches that would be returned to existing grade and revegetated after construction; these activities would result in negligible stormwater runoff effects on wetlands during operation.

Routine operational maintenance of utility ROW along linear improvement LOD corridors could potentially require occasional mowing and removal of wetland trees and shrubs within the corridors for maintenance access or safety reasons. These maintenance activities would not be anticipated to immediately affect wetlands, as the soil saturation, hydrology, and hydrophytic species composition of any affected wetlands would not change. However, the maintenance activities could indirectly lead to regression of PFO and PSS wetland cover types to PEM wetland habitat over time. Under ECL Article 24, PFO wetlands converted to PEM habitat as a result of regular utility ROW maintenance would be subject to compensatory mitigation requirements for any PFO wetlands that are also State jurisdictional wetlands.

Maintenance work required along the proposed natural gas line route would be anticipated to indirectly convert 0.033 acres of PFO and 0.132 acres of PSS type wetlands being treated as State jurisdictional to PEM wetland habitat. It is currently unknown how many acres of State jurisdictional PFO and PSS wetlands would be subject to habitat conversion as a result of future maintenance on the proposed water supply lines or the proposed wastewater conveyance. OCWA and OCDWEP would seek to avoid disturbing these PFO wetlands during maintenance to the greatest extent practicable. Although compensatory mitigation may be required for these future maintenance activities, indirect conversion of one wetland habitat cover type to another would not be considered a significant adverse effect.

Based on the above requirements and measures, Proposed Project and Connected Action operations would not result in significant adverse effects on wetlands.

Surface Water

As described above, the Proposed Project is anticipated to result in a permanent increase in impervious surface coverage, which could lead to altered hydrologic conditions and adverse water quality conditions, as described under Construction Effects. As noted above, Micron will be required to implement post-construction SMPs as a condition of its SPDES permit, which will be designed to accommodate, slow, and hold stormwater runoff and to filter out the pollutants it would carry from the impervious surfaces. Also as noted above, National Grid, OCWA, and OCDWEP would implement similar SMPs to reduce post-construction stormwater runoff from operation of the Connected Actions, and the IWWTP would be required to implement such SMPs as a condition of its SPDES permit.

Wastewater from industrial sources must be treated and managed in accordance with applicable regulatory requirements and permits prior to discharge. Industrial wastewater generated at the Micron Campus that is not treated on site for reuse will be treated on the Micron Campus to levels necessary to meet discharge limitations and conditions contained in an Industrial Wastewater Discharge Permit (IWDP) to be issued to Micron by Onondaga County Department of Water Environment Protection (OCDWEP). OCDWEP will set limits in the IWDP that must be met at the point of discharge from the Micron Campus, prior to being sent as secondary residual wastewater via the wastewater conveyance to the IWWTP. These effluent limitations will be consistent with EPA pretreatment guidelines and the requirements of the OOWWTP SPDES permit. Micron's IWDP also will include monitoring and reporting of regulated parameters. Monitoring and reporting for these parameters will also be conducted by OCDWEP and reported to NYSDEC through the established SPDES permit prior to discharge to the Oneida River.

Micron also would work with OCDWEP to develop a plan to reuse treated IWWTP effluent volumes as makeup water for the Micron Campus' cooling towers and other mechanical systems. Only treated effluent from the IWWTP that is not recycled and returned to the Micron Campus would be discharged into the Oneida River. This discharge would comply with the OOWWTP's approved permit and applicable regulations.

OCDWEP is designing the IWWTP to use the most advanced pollutant treatment and removal technologies available. These technologies would be designed to treat industrial wastewater containing organic compounds, heavy metals, nitrogen, phosphorous, and other pollutants. To comply with its SPDES permit for the IWWTP, OCDWEP would be required to perform regular analytical testing of surface water and effluent samples collected using NYSDEC-approved methods and would be subject to ongoing sampling, monitoring, and reporting requirements. For additional discussion of potential effects from operation of the IWWTP relating to solid and hazardous waste, see Section 3.8 (Solid Waste, Hazardous Waste, and Hazardous Materials). For additional discussion on management of PFAS, see Appendix L-1.

Based on these measures, industrial wastewater discharges from operation of the IWWTP are not anticipated to result in significant adverse effects on water resources.

Stormwater

The completed phases of the Proposed Project and Connected Actions would create new impervious surfaces that could increase potential stormwater runoff flow and pollutant discharge during operations that, unless adequately managed, could exacerbate downstream effects on other water resources and water quality.

To address this issue for the Proposed Project, Ramboll would conduct stormwater modeling to conservatively estimate peak post-construction stormwater discharge rates at selected stormwater design locations. Preliminary modeling has already been conducted by Ramboll, but results have not been validated at this point. The modeling would not only be used to make iterative adjustments to the design of Proposed Project structures as part of site planning, such as upsizing pipes, adjusting pipe slopes and inverts, and providing more cover to reduce the risk of surcharging, it would also calculate the degree to which stormwater management techniques would be able to meet the standards for green infrastructure practices under the 2024 *New York State Stormwater Management Design Manual*, or the New York State Stormwater Management Design Manual in effect at the time of approval, given the phased development. The modeling would show how the Proposed Project would comply with CGP requirements via designed post-construction SMPs. For additional information on these proposed modeling efforts, see Appendix F-3.3.

In addition to the stormwater BMPs that Micron would undertake as part of the Proposed Project design (described above under Construction Effects), the post-construction SMPs would be required as a condition of Micron's SPDES CGP permit, which would be used to meet MSGP effluent limitations for stormwater discharges from industrial activities. To comply with this requirement, and in an effort to use green infrastructure SMPs to the greatest extent practicable, Micron would propose to implement several feasible alternative SMPs to reduce stormwater runoff, summarized in Table 3.3-11.

Table 3.3-11 Proposed Stormwater Management Practices

SMP	Description
Wet extended detention ponds	Permanent pools with extended detention storage areas above the pools to detain water from storm events and release it over time, contributing to treatment of a portion of water quality volume (WQV) by removing phosphorus, nitrogen, metals, pathogens, and total suspended solids (TSS).
Filtration bioretention areas	Shallow depressions with vegetation and engineered filter media that capture and treat stormwater runoff through a soil matrix, contributing to WQV through removal of pollutants, before conveying the runoff via perforated underdrains to the storm drain system.
Stormwater planters with underdrains	Passive filtration systems to manage and treat small to moderate volumes of stormwater runoff from adjacent impervious surfaces, consisting of an inflow component, a shallow ponding area over a planted soil bed, a mulch layer, stone drainage layers, plantings, and an overflow mechanism to convey larger rain events to the storm drain system.
Dry swales	An open drainage channel or depression designed to detain and promote the filtration of stormwater runoff into soil media.
Rainwater harvesting systems	Systems to capture and store stormwater runoff to be used for irrigation or filtered and reused for non-contact activities.
Green roofs	Green roofs capture stormwater runoff in layers of vegetation and soil installed on top of conventional flat or sloped roofs, allowing for evaporation and evapotranspiration to reduce stormwater volume and runoff rates.
Rooftop disconnections	Features that direct runoff from rooftops and upland overland runoff flows to designated pervious areas to reduce runoff volume and runoff rates.
Porous pavement	Pervious surfaces that provide an alternative to conventional paved surfaces and facilitate infiltration into the ground, reducing stormwater runoff.

Sources: NYSDEC (2024b), Ramboll (2025c).

Overall, these SMPs would be employed to maintain existing drainage patterns to the greatest extent practicable, continue the conveyance of upland watershed runoff, control increases in stormwater runoff, prevent soil erosion and sedimentation, and provide runoff reduction using green infrastructure measures where feasible. In addition, the wet extended detention ponds and filtration bioretention areas would reduce the potential for stormwater runoff to contribute to downstream flood hazards (Ramboll, 2025c). These operational SMPs would be documented in the SWPPP required under the MSGP and would include monitoring conditions. The SMPs would be adaptively managed and refined over time, as appropriate, based on ongoing water level and flow monitoring performed at 42 groundwater monitoring wells, 15 surface water monitoring points (7 culverts and 8 channel points), and 5 piezometer monitoring wells. The SWPPP incorporating these measures would be included as part of the Proposed Project's site plan, which would be subject to approval by the Town of Clay (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP).

National Grid, OCWA, and OCDWEP would implement similar SMPs to reduce post-construction stormwater runoff from operation of the Connected Actions. These SMPs also would be designed to meet the 2024 *New York State Stormwater Management Design Manual* requirements, or the requirements in effect at the time of approval, and would be documented in relevant SWPPPs. The IWWTP would be required to implement such SMPs as a condition of its SPDES CGP, and the SMPs would be used to meet MSGP effluent limitations for stormwater discharges from the IWWTP. Many of the other Connected Actions would involve installation of underground utilities in trenches that would be returned to existing grade and revegetated once construction is complete; these activities would result in negligible stormwater runoff effects during operation.

Based on the above requirements and measures, Proposed Project and Connected Action operations would not result in significant adverse effects from stormwater runoff.

Groundwater

Operation of the Proposed Project would rely on water supplies from OCWA, which obtains water from surface water sources. Therefore, the Proposed Project would not require any groundwater withdrawals. Micron would continue to use information from the 42 groundwater monitoring wells to inform adaptive management measures to avoid and minimize effects from Proposed Project operations on groundwater. As described above under Stormwater, Micron would implement several stormwater BMPs as integral elements of Proposed Project design and operations. Micron also would be required to obtain a SPDES permit from NYSDEC, which would require Micron to implement post-construction SMPs as operating permit conditions. The stormwater BMPs and SMPs would serve to increase infiltration of stormwater runoff from impervious surfaces to promote groundwater recharge, filtration, infiltration, and storage. As part of its SPDES permit, Micron also would be required to implement SWPPP (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP) and SPCC/SPR Plan measures to reduce the risk of accidental releases, leaks, or spills during facility operations and provide for immediate containment and cleanup of any release.

If not designed, installed, or maintained properly, septic systems can contaminate groundwater with pathogens, chemicals, and nutrients, which can adversely affect groundwater quality. The septic system for the Childcare Site would be installed and maintained in compliance with NYCRR Title 10 Part 75 and would be permitted by NYSDOH prior to operation. If operation results in more than 1,000 gallons per day of discharge to groundwater, Micron would be responsible for obtaining a SPDES permit from NYSDEC.

National Grid, OCWA, and OCDWEP would operate their respective Connected Actions in accordance with all applicable SPDES permit requirements, including by implementing any required post-construction SMPs to increase infiltration of stormwater runoff from impervious surfaces and promote groundwater recharge, filtration, infiltration, and storage. National Grid, OCWA, and OCDWEP also would implement any required SWPPP and SPCC/SPR Plan measures to reduce the risk of accidental releases, leaks, or spills during operations and provide for immediate containment and cleanup of any release.

Based on the above requirements and measures, Proposed Project and Connected Action operations would not result in significant adverse effects on groundwater.

Floodplains

As described above under Stormwater and Groundwater, Micron would implement several stormwater BMPs as integral elements of Proposed Project design and operations. Micron also would be required to obtain a SPDES permit from NYSDEC, which would require Micron to implement post-construction SMPs as operating permit conditions. The stormwater BMPs and SMPs would serve to increase infiltration of stormwater runoff from impervious surfaces to mimic the existing storage and runoff rates at the WPCP and proposed Rail Spur and Childcare Sites and maintain the hydraulic balance within the Youngs Creek and Shaver Creek watersheds, which would avoid or minimize potential effects on floodplains. The stormwater BMPs and SMPs implemented during construction would be maintained during operations and would continue to avoid or minimize effects from stormwater runoff on downstream receiving waters that could reduce floodplain functions or storage capacity, or increase flood risk or frequency. Micron also would continue to perform surface water level and flow monitoring as part of its SWPPP and refine SMPs and techniques as appropriate to avoid or minimize changes in flows downstream that could result in floodplain effects (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP).

OCWA would operate the water supply improvements, and OCDWEP would operate the IWWTP, both in accordance with all applicable SPDES permit requirements, including by implementing any required post-construction SMPs and performing any surface water level and flow monitoring as required under any SWPPPs.

Based on the above requirements and measures, Proposed Project and Connected Action operations would not result in significant adverse effects on floodplains.

Coastal Resources

No Proposed Project components would be located within the coastal zone in New York State or within the Town of Clay or City of Oswego LWRP boundaries. OCWA and OCDWEP would continue to adhere to erosion and sediment control standards and incorporate BMPs to ensure operation of the water supply and wastewater improvements would be consistent with Federal and State coastal resource use policies and the Clay and Oswego LWRPs.

Based on the above, Proposed Project operations would have no effects on coastal resources and Connected Action operations would not result in significant adverse effects on coastal resources.

Growth Inducing Effects

The Preferred Action Alternative would potentially result in growth inducing effects on water resources primarily to the extent that increased demand for housing and business services in the five-county region, including supply chain growth, would lead to further development in wetlands, rivers, or streams, cause increases in stormwater runoff, or increase the potential for effects on groundwater, floodplains, or coastal resources.

The loss of at least some additional wetlands, wetland buffer areas, and river and steam features would be expected within the five-county region due to site excavation, filling, and grading activities that would be required for construction of other residential or commercial development, including expansion of semiconductor supply chain business in the region. This induced build-out could pose risks to the hydrology and water quality of other wetlands, surface water features, and groundwater resources in the region. The build-out also could increase the extent of impervious surfaces, which could lead to increases in downstream stormwater flows and increased risks of downstream flooding. In general, these activities would potentially be subject to USACE or NYSDEC jurisdiction and Federal, State, or local permit programs, which could require avoidance, minimization, or mitigation measures, such as implementation of SMPs or the creation of other potential wetland restoration sites. These issues would be subject to review on a case-by-case basis during the permitting process for various other projects that would propose activities in wetlands, rivers, or streams.

As described in Section 3.1 (Land Use, Zoning, and Public Policy), the Proposed Project would likely induce substantial new residential and commercial growth in the five-county region resulting in gradual changes to land use over an extended period as Micron builds the Proposed Project and as job opportunities attract new populations to the region. The locations and scale of this induced residential and commercial development cannot be predicted at this time, but because at least some of this induced growth would potentially result in significant changes to land use, those changes could potentially spur significant changes to water resources as described above, subject to applicable environmental laws and regulations and permits and approvals.

Summary of Effects

Overall, under the Preferred Action Alternative, construction of the Proposed Project and Connected Actions would result in significant adverse effects on wetlands and surface water through the anticipated permanent loss of approximately 200 acres of jurisdictional wetlands and 7,828 LF of jurisdictional rivers and streams. Construction of the Proposed Project and Connected Actions would not result in significant adverse effects from stormwater or significant adverse effects on groundwater, floodplains, or coastal resources. Post-construction operation of the Proposed Project and Connected Actions would not result in significant adverse effects on water resources. The Preferred Action Alternative could potentially result in significant growth inducing effects on wetlands and surface water in the five-county region over time, but these changes would be gradual and would be subject to applicable permitting processes for other activities.

3.3.5 BMPs and Mitigation Measures

As described under Stormwater in Section 3.3.4.2 under Construction and Operational Effects, Micron, National Grid, OCWA, and OCDWEP would each implement stormwater BMPs as part of the Proposed Project and Connected Actions to minimize the effects of stormwater runoff on water resources before and during construction, as well as post-construction SMPs to further minimize effects during operations. In conducting this analysis, the BMPs considered integral to the Preferred Alternative with respect to protection of water resources are listed in Table 3.3-12.

Table 3.3-12 BMPs for Protection of Water Resources

Activity	BMP	Benefits
Construction	Monitor groundwater levels.	Minimizes the effects on groundwater draw down.

Operations	Increase and maximize water recycling, reuse, and restoration, where feasible.	Optimizes GHG emissions, water use, wastewater, and solid waste generation.
Operations	Implement a periodic groundwater flow monitoring plan based on a series of groundwater monitoring wells that would be placed around the Micron Campus to monitor groundwater flow. Use groundwater level and flow information to evaluate water flow across the site and into off-site wetlands north of the Micron Campus.	Minimizes the effects on groundwater draw down. Additionally, verifies that the groundwater flow component to downstream wetlands is not affected.
Operations	Manage, control, and monitor wastewater flows by engaging in the following: • Incorporate facility segregation processes to facilitate enhanced water treatment, testing, and recycling. • Implement a Supervisory Control and Data Acquisition alarming and control system. • Off-spec wastewater treatment tanks. • Redundant pH flow meters at compliance points. • Auto shut-off valve to control discharge of off-spec wastewater off-site (Note: This requires real-time monitoring which is not possible for all discharge parameters). • Maintain preventative maintenance program for compliance equipment. • Utilize internal chemical review. • Implement an Accidental Spill Prevention Plan. (Note: This plan outlines how a facility will prevent, contain, and respond to chemical spills, including procedures for handling and storing materials, worker training, emergency response, and regulatory compliance. It is used in conjunction with the SPCC which accounts specifically for the prevention, containment, and response to oil spills). • Implement a Toxic Organics Management Plan. • Incorporate measures to implement anticipated near-term updates to regulatory requirements.	Minimizes the potential for off-site effects on water resources.
Construction; Operations	Implement and maintain BMPs identified in applicable SWPPP and SPCC/SPR Plan.	Provides a management framework to minimize the potential for off-site effects on surface and groundwater resources. Also minimizes potential soil erosion and reduces the amount of

		stormwater flowing into disturbed areas.

Mitigation would be required under CWA Section 404 and ECL Article 24 to address the anticipated permanent losses of Federal and State jurisdictional wetlands and surface waters that would occur during construction of the Proposed Project.[38]

Micron's Mitigation Plan for the Proposed Project is included in Appendix F-7. As described in the Mitigation Plan, Micron is proposing to purchase nine in-lieu fee program credits from the Johnson Farm Preserve,[39] and to mitigate the remaining wetland and surface water losses through permittee-responsible mitigation,[40] which would involve a combination of activities to enhance, establish, or reestablish (restore) wetlands and surface waters within the same Oneida River watershed in which the jurisdictional wetland and surface water losses from construction of the Proposed Project would occur. This mitigation would be in-kind (e.g., through creation of forested wetlands to replace lost forested wetlands).

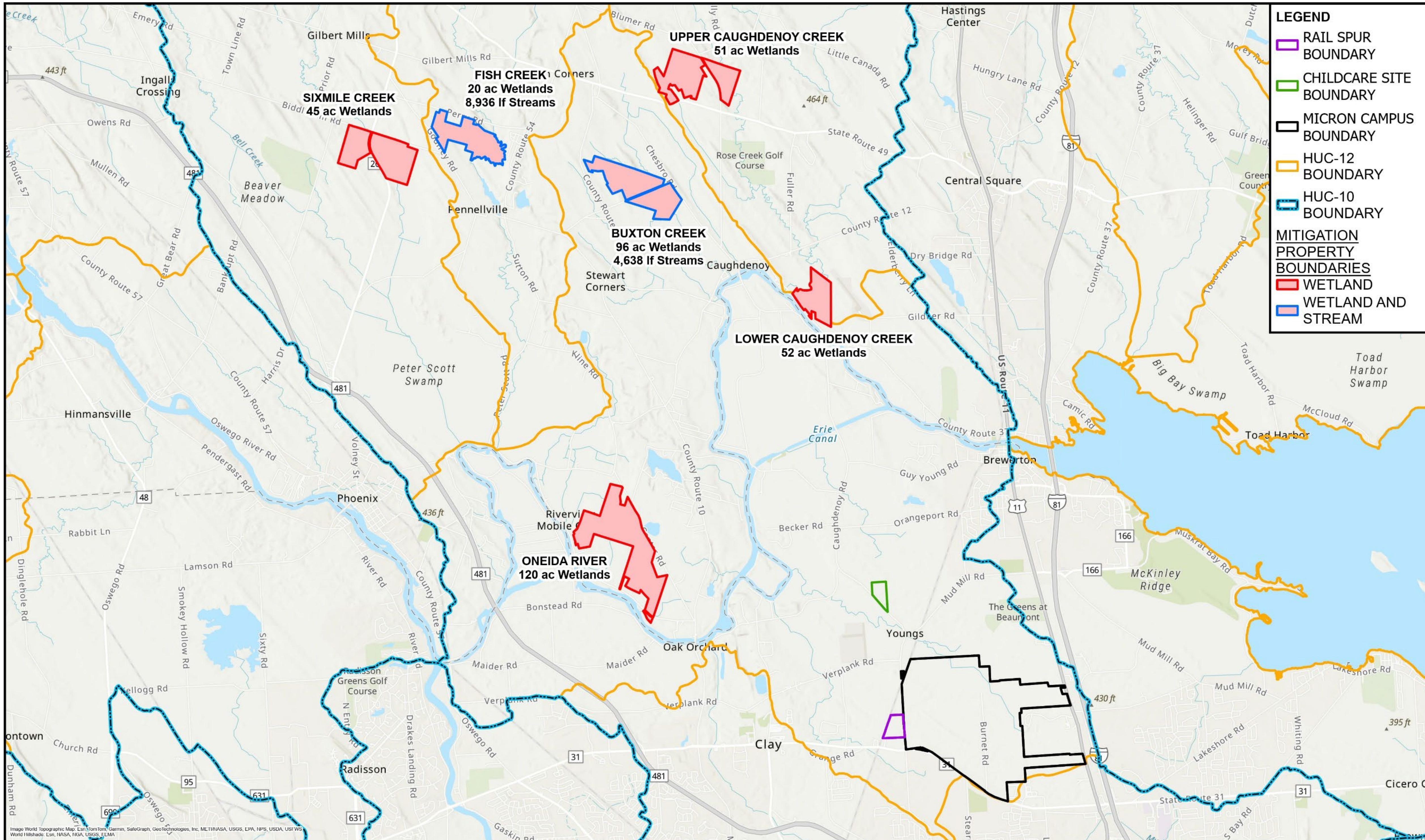
As shown in Figure 3.3-4 and Figure F-24 in Appendix F-5, Micron would undertake these mitigation activities across six mitigation sites, referred to as the Oneida River, Lower Caughdenoy Creek, Upper Caughdenoy Creek, Sixmile Creek, Buxton Creek, and Fish Creek sites, all located within a nine-mile distance to the northwest of the WPCP. Under the Mitigation Plan, Micron would enhance, establish, or restore a total of 422.14 acres of wetlands and restore a total of 14,030 LF of streams through permittee-responsible mitigation at the mitigation sites.

[38] Mitigation also would be required to address anticipated permanent losses of Federal and State jurisdictional wetlands and surface waters that would occur during construction of the Connected Actions, including the State's requirement to mitigate conversion of forested wetlands to emergent wetlands. National Grid has proposed to mitigate wetland losses within the Clay Substation expansion area by purchasing up to 8.4 credits from the Ducks Unlimited In-Lieu Fee Program. Mitigation plans for the other Connected Actions are under development and are the responsibility of each Connected Action proponent.

[39] An in-lieu fee program works by transferring the legal obligation to perform compensatory mitigation to a government or nonprofit natural resources management entity that sells advance credits to permittees and uses the funds to restore, enhance, or protect aquatic resources.

[40] Permittee-responsible mitigation refers to aquatic resource restoration, establishment, enhancement, or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility (40 C.F.R. § 230.92).

Figure 3.3-4 Proposed Compensatory Mitigation Sites



Notes:
ac = acres
lf = linear feet

N

0 1.25 2.5
Miles

FIGURE 3.3-4 PROPOSED COMPENSATORY MITIGATION SITES
TOWN OF CLAY, ONONDAGA COUNTY, NEW YORK

CHECKED BY:	DATE:	PROJECT NO:	FIGURE NO:
CH	02/11/2025	31000524.001	3.3-4

Table 3.3-13 shows the mitigation ratios anticipated to be required, as well as the proposed total amount of wetlands and streams to be enhanced, established, or restored at the mitigation sites and credits purchased to mitigate Federal and State jurisdictional wetland and stream losses from construction of the Proposed Project.

Table 3.3-13 Proposed Federal Wetland and Surface Water Mitigation

Type	Jurisdictional Losses	Anticipated Mitigation Ratio Requirement[(a)]	Mitigation Credits Required	Waters / Wetlands Proposed to Be Enhanced / Established / Restored[(b)]
Federal Jurisdictional Wetland Mitigation				
Permittee-Responsible Mitigation				
POW	2.10	1:1	2.10	0.0[(c)]
PEM	93.94	1.5:1	140.91	154.06
PSS	19.55	1.5:1	29.325	28.08
PFO	77.79	3:1	233.37	240
Total	**193.38**	**2:1**	**405.705**	**422.14**
In-Lieu Fee Credits[(d)]				
n/a	n/a	n/a	n/a	9
Total	**193.38**	**2:1**	**405.705**	**431.14**
State Jurisdictional Wetland Mitigation				
Permittee-Responsible Mitigation				
SEM	48.12	1.5:1	72.18	72.73
DEM	41.01	1.5:1	61.515	81.33
SS	17.83	1.5:1	26.745	28.08
RMHS	46.43[(e)]	3:1	139.29	164.64
HHS	3.08	3:1	9.24	10.44
FF	19.31[(e)]	3:1	57.93	64.91
FP/AP	0.66	1:1	0.66	0.0[(c)]
Total	**176.44[(e)]**	**2:1**	**367.56**	**422.13**
Federal Jurisdictional Stream Mitigation				
Permittee-Responsible Mitigation				
Ephemeral	3,778	1.4:1	5,129	--
Intermittent	2,505	1.2:1	2,809	--
Perennial	0.0	N/A	0.0	--
Total	**6,283**	**1.3:1**	**7,938**	**14,030**

Source: Micron (2025). Notes: Wetland values are in acres and stream values are in linear feet. If required, mitigation of adjacent wetland areas would be calculated and addressed separately during the USACE and NYSDEC permitting processes.
(a) The mitigation ratios presented are those anticipated to be required by USACE and NYSDEC based on preliminary discussions. However, they are under review and subject to change.
(b) Proposed acres include 1:1 ratio for restoration and 3.5:1 ratio for enhancement.
(c) POW and FP/AP wetlands will be replaced with higher quality PEM/DEM habitat.
(d) 9 in-lieu fee credits purchased at TWT Johnson Farms Preserve.
(e) State wetland jurisdictional total includes conversion of 1.48 acres of FF and 0.20 acres of RMHS habitat to PEM habitat.

The establishment, enhancement, or restoration of 422.14 acres of wetlands through permittee-responsible mitigation has been proposed to satisfy both USACE and NYSDEC compensatory mitigation requirements, as the actual mitigation ratios would exceed the mitigation ratios anticipated to be required by each agency. The stream restoration is expected to compensate for the loss of 6,283 LF of Federal jurisdictional streams through stream channel reconfiguration, floodplain reconnection, and riparian buffer establishment.

The Buxton Creek and Fish Creek stream restoration sites were strategically selected based on their currently degraded stream conditions, providing an opportunity for full restoration of natural stream-wetland complexes, and for their hydrological connectivity, restoration potential, and ecological significance within the watershed. Stream mitigation would be in-kind, focusing on stream restoration and riparian buffer enhancement in alignment with the New York State Riparian Opportunity Assessment (NYSROA).

Consistent with Federal regulations, the ultimate goal of the Mitigation Plan is to fully replace the suite of lost functions and services from Proposed Project construction, including hydrology and sediment dynamics, biogeochemistry and nutrient cycling, and habitat and food web maintenance. In general, the mitigation would be designed to improve the wetland and stream functions and services over those lost, increasing both the quantity and quality of wetlands and streams within the larger watershed.

Table 3.3-14 shows Micron's proposed timeline for the wetland and stream restoration activities at the six mitigation sites. Overall, approximately 1,341 acres of land within the Oneida River watershed would be protected in perpetuity under the Mitigation Plan.[41]

Table 3.3-14 Micron Mitigation Plan Timeline

Mitigation Site	Distance (miles)[(a)]	Start Year	Acres Acquired by TWT[(b)]	Acres to Be Mitigated[(c)]	Protected Habitat[(d)]
Oneida River	4	~ 2026	405	149	256
Lower Caughdenoy Creek	5	~ 2026	109	53	56

[41] A portion of the wetland losses from construction of the Proposed Project would be subject to an existing conservation easement established as part of National Grid's Clay-Dewitt Line 3 & Clay-Teall Line 10 Rebuild & Reconductor Project (the Clay-Teal Project). This mitigation parcel was originally permitted under NYSPSC Certificate of Environmental Compatibility and Public Need Case Number 15-T-0305 to compensate for wetland losses associated with that project. Although National Grid would remain responsible for addressing modifications to the mitigation parcel through the existing NYSPSC proceeding, Micron would include replacement of the Clay-Teal Project parcel as part of its Mitigation Plan.

Buxton Creek	7.8	~ 2026	188	97	91
Fish Creek	8	~ 2027	180	19.2	160.8
Upper Caughdenoy Creek	8.5	~ 2028	225	60	165
Sixmile Creek	9	~ 2029	234	44	190
Totals			**1,341**	**422.2**	**918.8**

Source: Micron (2025). Notes: [(a)] = Distance from the Micron Campus. [(b)] = TWT stands for The Wetland Trust, a 501(c)(3) nonprofit New York Corporation that works to protect, restore, and enhance wetlands. [(c)] = Represents acres that would be established, enhanced, or restored within the areas acquired by TWT. [(d)] = Represents the total remaining wetland and upland acreage within the area acquired by TWT after subtracting the acres to be mitigated.

3.4 BIOLOGICAL RESOURCES

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative on biological resources, including ecological communities and the terrestrial wildlife, aquatic life, and special status species they support.

3.4.1 Biological Resources Study Area

Section 3.4 considers the potential effects of the Proposed Project and Connected Actions on biological resources within a study area encompassing all wetlands, surface waters, uplands, and developed areas within the Proposed Project site boundaries and Connected Action LODs. Because this section considers wetlands and surface waters to be part of the biological resources study area regardless of their jurisdictional status as outlined in Section 3.3 (Water Resources), the descriptions of affected wetland and surface water areas in this section may differ from the descriptions of those resources in Section 3.3 (Water Resources). For additional information on the biological resources methodology and study area, see Appendix G-1.

3.4.2 Legal and Regulatory Setting

Section 7 of the Endangered Species Act (ESA) requires all Federal agencies to ensure their activities are not likely to jeopardize the continued existence of Federal listed species or destroy or adversely modify designated critical habitat. Section 7 applies to all actions Federal agencies fund, authorize, permit, or carry out in which there is discretionary Federal involvement or control, and requires a formal consultation process. CPO is the lead agency for purposes of the Section 7 consultation process for the Proposed Project, in consultation with USFWS.

As part of the Section 7 consultation process, CPO designated Micron as a non-Federal representative responsible for preparing a Biological Assessment (BA) for CPO and USFWS, on the basis of an initial determination that the Proposed Project may affect, and is likely to adversely affect, Federal listed endangered species as a result of construction. AKRF, Inc. (AKRF) prepared a draft BA, which was included in Appendix G-4 of the DEIS. Subsequent to the publication of the DEIS, the BA was reviewed and finalized by CPO and USFWS. A copy of the final BA is included in Appendix G-4. Following review and finalization of the BA, USFWS will be responsible for issuing a Biological Opinion (BO) concerning the incidental take[42] of Federal listed species in connection with the Proposed Project. The BO will be included in the Record of Decision and will include reasonable and prudent measures necessary or appropriate to minimize the impact of the incidental take of such species.

To support this review, Section 3.4 assesses the direct and indirect effects of the No Action Alternative and the Preferred Action Alternative on the ecological communities present in the study area, the terrestrial wildlife and aquatic life inhabiting those communities, and special status species, which include listed threatened and endangered species under the ESA, the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and applicable State laws and regulations, including ECL Article 11 and 6 NYCRR Part 182.

[42] The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. See Endangered Species Act, § 3(19).

In addition to the BO issued by USFWS, NYSDEC will be responsible for issuing an ECL Article 11 Endangered and Threatened Animal Species Incidental Take Permit for the Proposed Project. For additional information on the legal and regulatory setting for Section 3.4, see Appendix G-2.

3.4.3 Affected Environment

This section describes the affected environment (existing conditions) for the biological resource types relevant to the analysis in Section 3.4. For supplemental information on the affected environment, see Appendix G-3.

3.4.3.1 Ecological Communities

The Federal and State laws identified in Section 3.4.2 are intended to protect healthy populations of plants, wildlife, and fish and the natural environments on which they depend. To assess the affected environment for purposes of the analysis of biological resources in the EIS, AKRF characterized the ecological communities (i.e., terrestrial habitat and vegetation)[43] within the Proposed Project and Connected Action site boundaries through field investigations and desktop reviews.[44]

Specifically, AKRF conducted a reconnaissance investigation of the proposed Micron Campus site, compiled aerial information on ecological communities in the Connected Action LODs, and prepared summary tables of wildlife observed in the vicinity of the Proposed Project and Connected Actions (see Appendices G-3.1 and G-3.2). AKRF also conducted an acoustic bat survey (see Appendix G-4) and a grassland breeding bird survey (see Appendix G-5), and is preparing a grassland bird incidental take permit application. In addition, Ramboll conducted qualitative and quantitative environmental surveys of the Youngs Creek complex within the proposed Micron Campus site (see Appendix G-6).

Proposed Project

Figure 3.4-1 through Figure 3.4-3 on the following pages show field mapping of ecological communities for the proposed Micron Campus, Rail Spur Site, and Childcare Site. Following the

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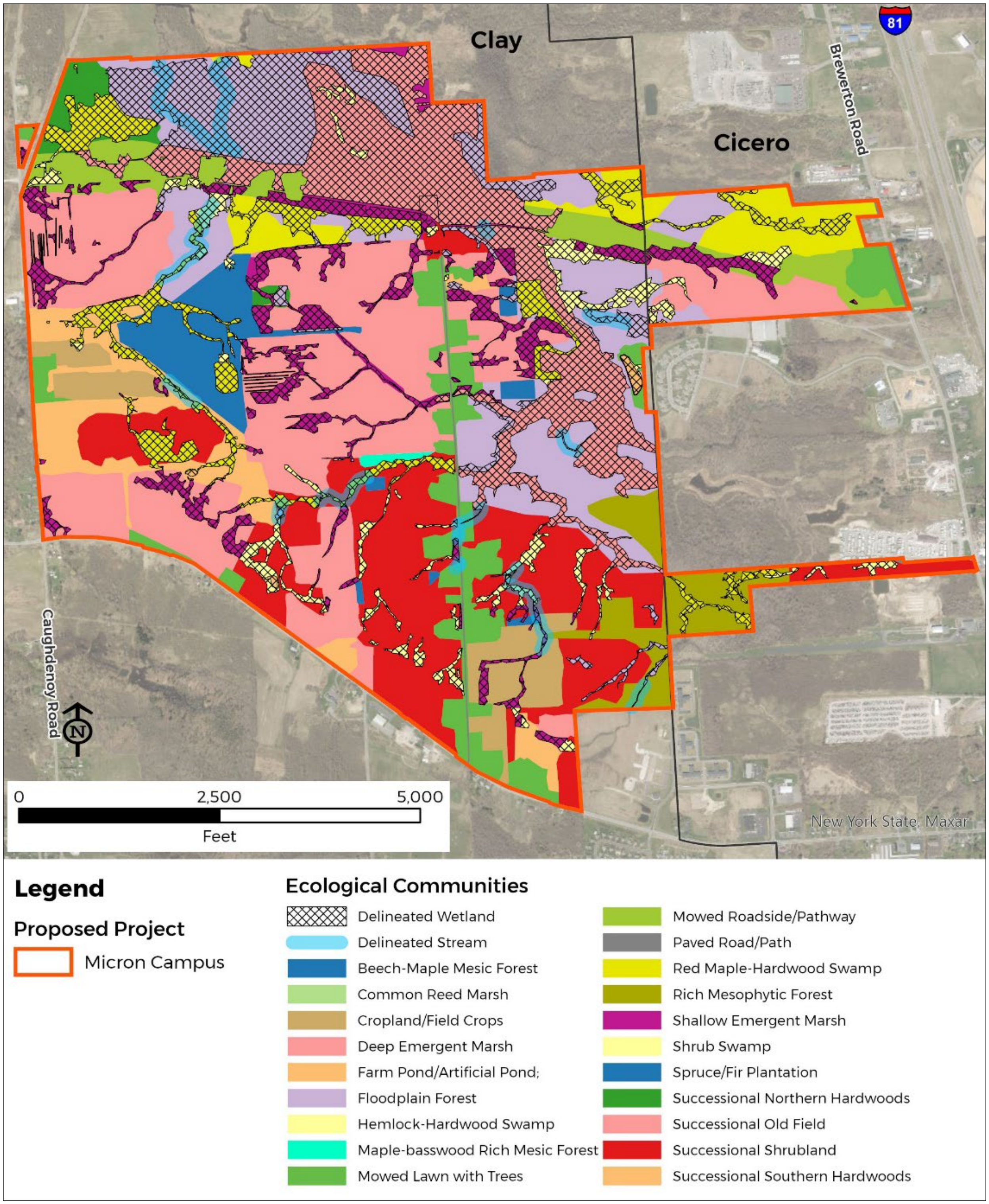
[43] An ecological community is defined as "a variable assemblage of interacting plant and animal populations that share a common environment (Edinger et al. 2014)."

[44] AKRF conducted field investigations, ecological community mapping, and observations of dominant species at the proposed Micron Campus, Rail Spur Site, and Childcare Site in 2023. Ecological communities in wetlands for the proposed natural gas and wastewater improvements were determined using data collected from the wetland delineations where appropriate. Ecological communities were characterized in wetlands for the proposed water supply improvements through a desktop review of USFWS NWI maps, State informational freshwater wetland maps, aerial imagery, and site-specific field data, where available. AKRF characterized ecological communities in wetlands for the proposed water supply improvements through a desktop review of USFWS NWI maps, State informational freshwater wetland maps, aerial imagery, and site-specific field data, where available. AKRF mapped upland communities not covered by wetland delineations or mapping data using aerial imagery and site-specific information, where available. For purposes of Section 3.4, characterizations of ecological communities in wetlands are based on the commonly used classification systems described in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and *Ecological Communities of New York State* (Edinger et al. 2014) where noted. For additional information on these wetland classifications, see Section 3.3 (Water Resources) and Appendix F.

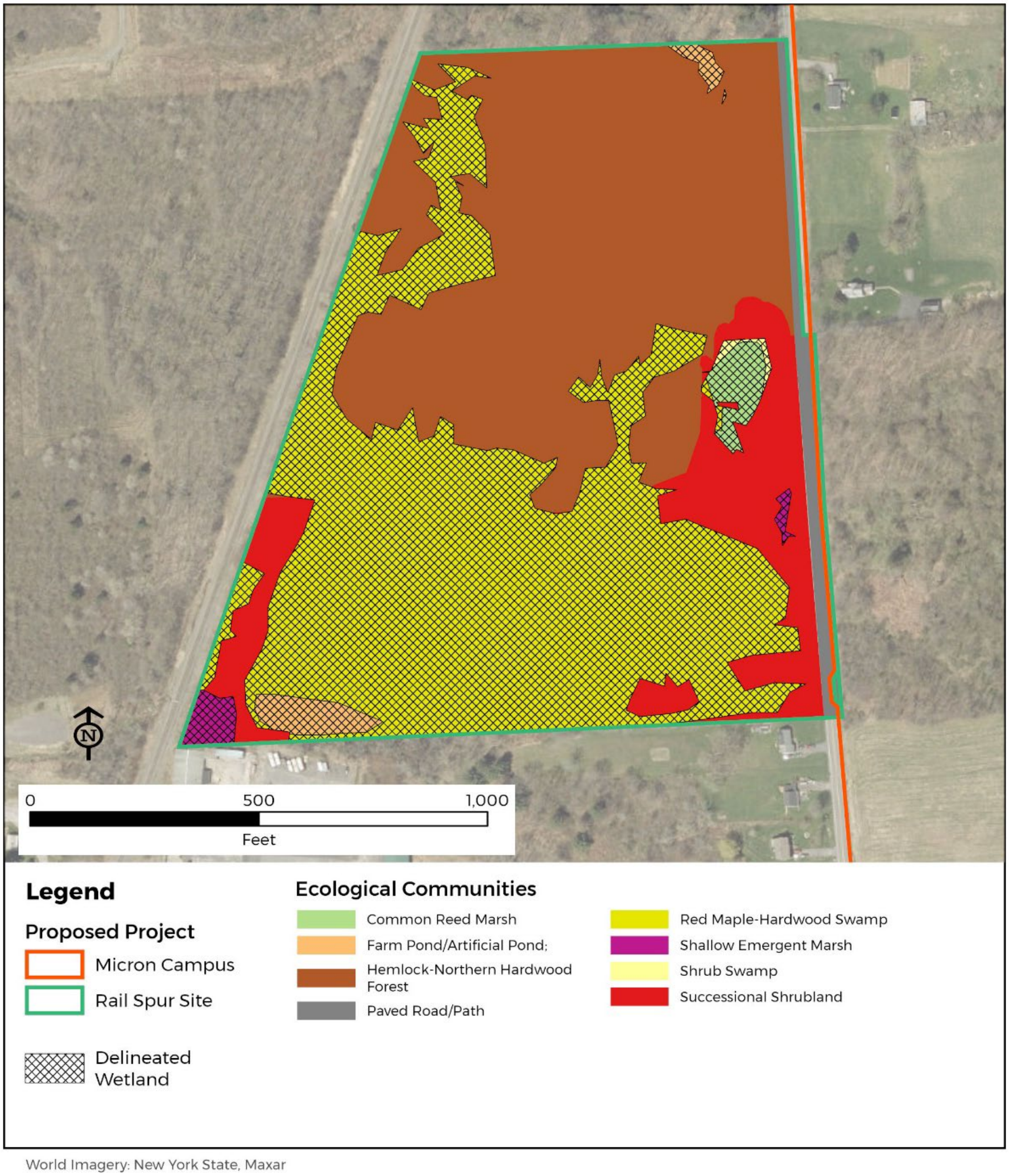
figures, Table 3.4-1 summarizes the ecological communities and dominant vegetation observed at the Proposed Project sites and the acreages for each community.

Figure 3.4-1 Micron Campus Ecological Communities



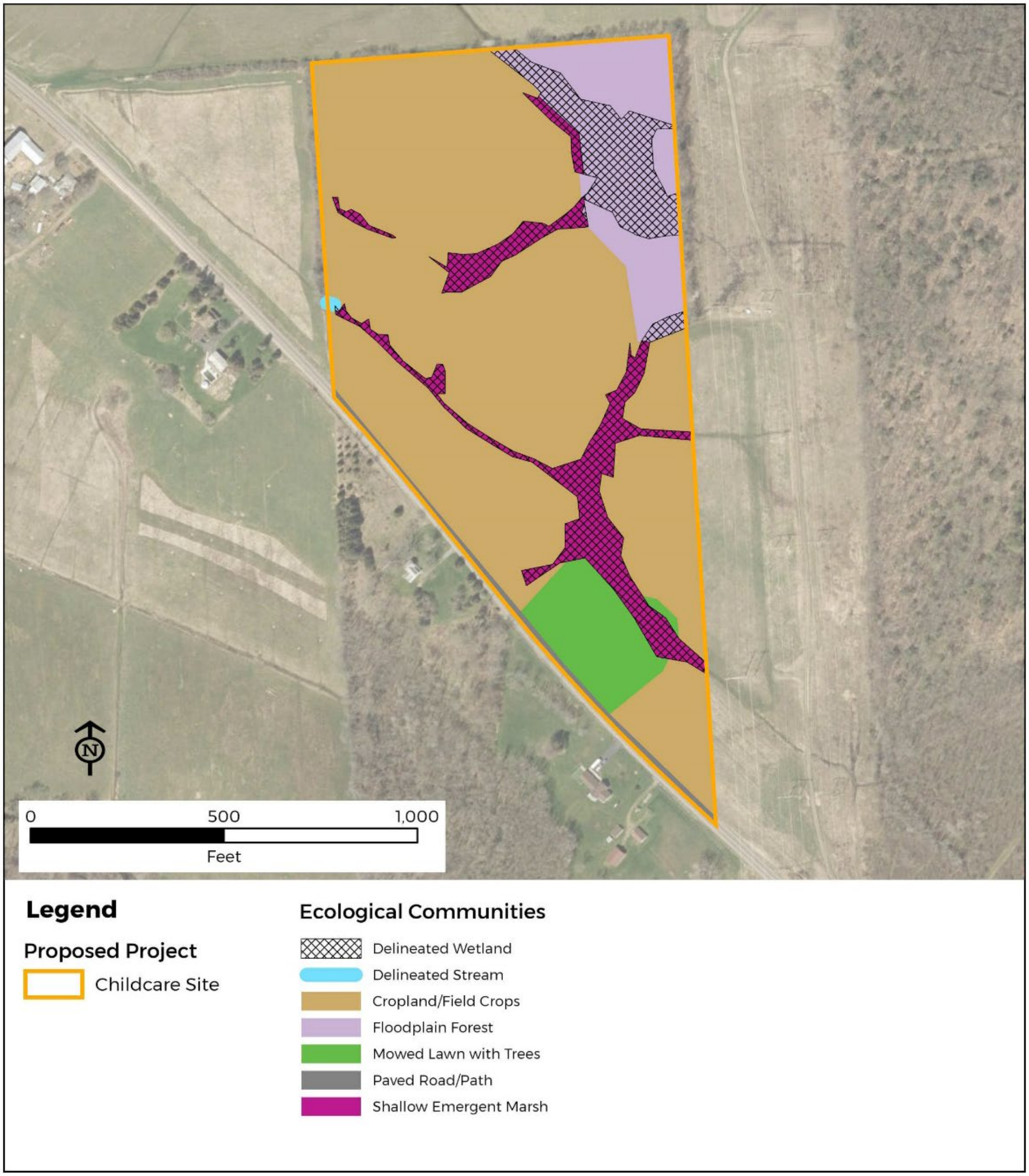
Sources: AKRF ecological communities field mapping (July 31-Aug. 2, 2023) (AKRF, 2023) and Ramboll wetland delineations (2021-2023) (Ramboll, 2023) based on State wetland classifications (Edinger et al. 2014).

Figure 3.4-2 Rail Spur Site Ecological Communities



Sources: AKRF ecological communities field mapping (July 31-Aug. 2, 2023) (AKRF, 2023) and Ramboll wetland delineations (2021-2023) (Ramboll, 2023) based on State wetland classifications (Edinger et al. 2014).

Figure 3.4-3 Childcare Site Ecological Communities



World Imagery: New York State, Maxar

Sources: AKRF ecological communities field mapping (July 31-Aug. 2, 2023) (AKRF, 2023) and Ramboll wetland delineations (2021-2023) (Ramboll, 2023) based on State wetland classifications (Edinger et al. 2014).

Table 3.4-1 Existing Ecological Communities and Dominant Vegetation (Proposed Project)

Community	Description	Dominant Vegetation Observed During Field Surveys	MC	RSS	CCS	Total^
Common reed marsh	A marsh that has been disturbed by draining, filling, road salts, etc. in which European common reed has become dominant. In extreme examples, common reed forms monotypic stands.	Common reed (*Phragmites australis*)*	< 0.1	(0.3)	-	< 1
Shallow emergent marsh	A marsh meadow community that occurs on mineral soil or deep muck soils (rather than true peat), that are permanently saturated and seasonally flooded.	Red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), narrowleaf cattail (*Typha angustifolia*), common reed,* goldenrod (*Solidago spp.*), purple loosestrife (*Lythrum salicaria*),* reed canary grass (*Phalaris arundinacea*)*	82.8 (79.4)	(0.2)	(2.7)	**86**
Deep emergent marsh	A marsh community that occurs on mineral soils or fine-grained organic soils (muck or well-decomposed peat); the substrate is flooded by waters that are not subject to violent wave action.	Spotted knapweed (*Centaurea stoebe*),* halberd-leaved tearthumb (*Persicaria arifolia*), reed canary grass,* moneywort (*Lysimachia nummularia*)*	(151.9)	-	-	**152**
Shrub swamp	A mostly inland wetland dominated by tall shrubs that occurs along the shore of a lake or river, in a wet depression or valley not associated with lakes, or as a transition zone between a marsh, fen, or bog and a swamp or upland community.	Silky dogwood (*Cornus amomum*), European buckthorn (*Rhamnus cathartica*),* wild raisin (*Viburnum nudum*), willow (*Salix spp.*)	(33.0)	(0.3)	-	**33**
Red maple-hardwood swamp	A hardwood swamp that occurs in poorly drained depressions or basins, usually on inorganic soil, but occasionally on muck or shallow peat, that is typically acidic to circumneutral.	Red maple, shagbark hickory (*Carya ovata*), green ash, northern spicebush (*Lindera benzoin*), Virginia knotweed (*Persicaria virginiana*), Virginia creeper (*Parthenocissus quinquefolia*)	111.1 (64.9)	(16.6)	-	**128**
Hemlock-hardwood swamp	A mixed swamp that occurs on mineral soils and deep muck in depressions which receive groundwater discharge, typically in areas with acidic substrate. These swamps usually have a fairly closed canopy (70 to 90% cover), sparse shrub layer, and low species diversity.	Eastern hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*), red maple	(3.4)	-	-	**3**
Floodplain forest	Typically, a hardwood forest that occurs on mineral soils on low terraces of river floodplains and river deltas. These sites are characterized by their flood regime; low areas are annually flooded in spring and high areas are flooded irregularly.	Red maple, green ash, silver maple (*Acer saccharinum*), shagbark hickory, American elm (*Ulmus americana*), northern spicebush, Virginia knotweed, sensitive fern (*Onoclea sensibilis*)	197.1 (86.1)	-	4.3 (1.9)	**201**
Farm pond / artificial pond	The aquatic community of a small pond constructed on agricultural or residential property. These ponds typically lack perennially flowing inlets and outlets.	Sensitive fern, dogbane (*Apocynum cannabinum*), white avens (*Geum canadense*)	(2.9)	(0.5)	-	**3**
Beech-maple mesic forest	A northern hardwood forest with sugar maple and American beech codominant. This is a broadly defined community type with several regional and edaphic variants. These forests occur on moist, well-drained, usually acid soils.	Sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), yellow birch, poison ivy (*Toxicodendron radicans*), Virginia creeper	40.9	-	-	**41**
Maple-basswood rich mesic forest	A species-rich northern hardwood forest that typically occurs on well-drained, moist soils of circumneutral pH.	Shagbark hickory, pignut hickory (*Carya glabra*), sugar maple, American basswood (*Tilia americana*), black cherry (*Prunus serotina*), European buckthorn,* green ash, goldenrod	1.9	-	-	**2**
Rich mesophytic forest	A hardwood or mixed forest that resembles the mixed mesophytic forests of the Allegheny Plateau south of New York (Braun 1950) but is less diverse. It occurs on mineral-rich, fine-textured, well-drained soils that are favorable for the dominance of a wide variety of tree species.	Shagbark hickory, American beech, American elm, red maple, poison ivy, Virginia creeper	41.8	-	-	**42**
Hemlock-northern hardwood forest	A mixed forest that typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps.	Sugar maple, shagbark hickory, eastern hemlock, green ash, goldenrod	-	15.2	-	**15**
Successional southern hardwoods	A hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed.	Green ash, black cherry, shagbark hickory, European buckthorn,* poison ivy	56.7	-	-	**57**
Successional northern hardwoods	A hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed.	Eastern cottonwood (*Populus deltoides*), black willow (*Salix nigra*), green ash, European buckthorn,* sensitive fern, poison ivy	11.3	-	-	**11**

Spruce / fir plantation	A stand of softwoods planted for the cultivation and harvest of timber products, or to provide wildlife habitat, soil erosion control, windbreaks, or landscaping.	Norway spruce (*Picea abies*), white spruce (*Picea glauca*), green ash, goldenrod	6.3	-	-	**6**
Successional shrubland	A shrubland that occurs on sites that have been cleared (for farming, logging, development, etc.) or otherwise disturbed. This community has at least 50 percent cover of shrubs.	Quaking aspen (*Populus tremuloides*), European buckthorn,* multiflora rose (*Rosa multiflora*),* gray dogwood (*Cornus racemosa*), blackberry (*Rubus allegheniensis*)	194.2	4.2	-	**198**
Successional old field	A meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development) and then abandoned.	Eastern cottonwood, European buckthorn,* gray dogwood, goldenrod, spotted knapweed,* arrowwood viburnum (*Viburnum dentatum*), joe-pye weed (*Eutrochium purpureum*)	278.7	-	-	**279**
Cropland / field crops	An agricultural field planted in field crops such as alfalfa, wheat, timothy grass, and oats. This community includes hayfields that are rotated to pasture.	Goldenrod, timothy grass (*Phleum pratense*),* orchard grass (*Dactylis glomerata*), spotted knapweed,* assorted grass species (*Festuca* spp.)	43.7	-	21.9	**66**
Mowed lawn with trees	Residential, recreational, or commercial land in which the groundcover is dominated by clipped grasses and forbs, and it is shaded by at least 30 percent cover of trees.	Red maple, goldenrod, assorted grass species	69.4	-	1.8	**71**
Mowed roadside / pathway	A narrow strip of mowed vegetation along the side of a road, or a mowed pathway through taller vegetation (e.g., meadows, old fields, woodlands, forests), or along utility ROW corridors (e.g., power lines, telephone lines, gas pipelines).	Green ash, European buckthorn,* gray dogwood, goldenrod, arrowwood viburnum	46.5	-	-	**47**
Paved road / path	A road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface.	Primarily unvegetated	3.5	1.1	0.5	**5**
		Totals^:	**1,377**	**38**	**31**	**1,446**

Notes: MC = Micron Campus site; RSS = Rail Spur Site; CCS = Childcare Site. Values in parentheses represent portions of acreages in wetlands field delineated by Ramboll using USACE wetland delineation field methodology. All other ecological communities were characterized by AKRF using field mapping based on *Ecological Communities of New York State* (Edinger et al. 2014) cover types. Floodplain forest acreage was classified in the context of Edinger et al. (2014), independent of FEMA floodplain mapping. Observed mowed roadside / pathway acreage varied in its level of succession from recently mowed to early successional with young trees and shrubs. *Denotes invasive species, identified in accordance with 6 NYCRR Part 575 and State and Finger Lake PRISM invasive species tier guides (NYNHP, 2025). ^ To account for rounding discrepancies, all totals have been rounded to the nearest whole number. The ecological communities identified for the Micron Campus site include the locations where the proposed telecommunications improvements would be built along existing road ROW immediately adjacent to the site.

Micron Campus

As shown in Figure 3.4-1 and Table 3.4-1, the dominant ecological communities at the proposed Micron Campus location are best characterized as successional old field, floodplain forest, and successional shrubland, followed by deep emergent marsh, red maple-hardwood swamp, shallow emergent marsh, and mowed lawn with trees. This collection of ecological communities reflects the site's general composition as complexes of wetlands and uplands, including previous farmland, in varying stages of succession, including ecological communities common to Onondaga County and the surrounding five-county region (Cornell, 2024; SOCPA, 2022; USGS NLCD, 2023). As described in Section 3.3 (Water Resources), the site includes approximately 422 acres of wetlands and 8,710 LF of streams. Many of the wetlands were once uplands in agricultural production. A National Grid utility transmission line ROW traverses the northern portion of the site and contains a gravel access road with at-grade and culverted crossings at several locations. The ecological communities on the site to the north of this ROW are primarily forested, swampland, and marshland habitat with varying species composition based on topography, hydrology, and former and current site uses. These communities also are present to a lesser extent on the site to the south of the transmission line ROW.

The wetland and upland ecological communities within the proposed Micron Campus site boundaries provide a variety of microclimates that can support a range of wildlife, including the types of terrestrial wildlife, aquatic life, and special status species that will be described in the following sections. These communities also provide ecosystem services associated with hydrology, water quality, sediment and nutrient retention, and floodwater storage. As identified in Section 3.3 (Water Resources), all of the wetlands on the site provide wildlife habitat as their principal and suitable function and service, with many of the wetlands providing additional services such as floodflow alteration, groundwater recharge and discharge, nutrient removal, sediment stabilization, sediment and toxicant retention, and fish habitat.

The proposed Micron Campus site is within the Youngs Creek ecosystem, which is part of a larger complex that includes low-gradient streams and freshwater wetlands. Based on a qualitative environmental survey that Ramboll conducted to establish a baseline for the conditions at and upstream and downstream from the site (Appendix G-6), the Youngs Creek complex on the site has been altered by channelization, agricultural and residential land uses, utility ROW, and ongoing beaver activity. The survey also indicates that fish and benthic macroinvertebrates (small, bottom-dwelling aquatic animals and the aquatic larval stages of insects) are present on the site and are indicative of low-energy and lentic habitats (still water environments such as ponds and swamps). Overall, the proposed Micron Campus site (as well as the Rail Spur and Childcare Sites, characterized further below) contain suitable breeding and wintering habitats for a variety of resident and migratory bird species, reptiles and amphibians, and mammals.

The most recent New York State Breeding Bird Atlas identified 99 bird species as confirmed or possible to probable breeders in the census blocks that contain the Micron Campus and the Rail Spur Site and 31 species as possible to probable breeders in the census blocks that contain the Childcare Site. A total of 67 species were documented during surveys of the sites spanning multiple seasons, indicating that several of the documented species are year-round residents. A grassland breeding bird survey conducted between May 15 and July 12, 2023, documented dense populations of breeding birds and a variety of bird species in the old field and shrubland portions of the Micron Campus site. Although grassland specialists were present, most birds observed during the survey were not grassland-obligate species and were instead generalists that can use a variety of other habitat types for breeding. The abundance of generalist species relative to grassland specialists observed in the fields at the site may be partly explained as a result of old fields transitioning to woody, early successional habitat. All except one of the 67 documented species are considered common and widespread globally by the New York Natural Heritage Program (NYNHP); the wood thrush (*Hylocichla mustelina*) is considered uncommon, but not rare. The majority of the species also are considered common and widespread within the State by NYNHP, with the remainder, except for the northern harrier (*Circus hudsonius*), considered uncommon but not rare within the State.

The NYSDEC Herp Atlas Project has recorded 15 reptile and amphibian species in the census blocks containing the Proposed Project sites. Seven reptile and amphibian species were observed during spring and summer surveys of the Micron Campus site and the Rail Spur Site, including American toad (*Bufo americanus*), gray treefrog (*Hyla versicolor*), bullfrog (*Rana catesbeiana*), green frog (*R. clamitans melanota*), northern leopard frog (*R. pipiens*), common snapping turtle (*Chelydra serpentina*), and common garter snake (*Thramnophis sirtalis*). The northern redback salamander (*Plethodon cinereus*) and northern brown snake (*Storeria dekayi*) also have the potential to occur at the Childcare Site, based on the presence of suitable habitat identified in the atlas. All of these species are considered common and widespread globally and within the State by NYNHP.

Lastly, 21 mammal species were observed during spring, summer, and winter surveys of the Micron Campus site and the Rail Spur Site, including eastern coyote (*Canis latrans*), red fox (*Vulpes vulpes*), white-tailed deer (*Odocoileus virginiansus*), eastern cottontail (*Sylvilagus floridanus*), and a variety of bats, mustelids, and rodents, including American beaver (*Castor canadensis*). A subset of these species also may occur on the Childcare Site.

For additional detail on the wildlife species observed or known to occur at the Proposed Project sites, see Appendix G-3.

Rail Spur Site

As shown in Figure 3.4-2 and Table 3.4-1, the dominant ecological communities at the Rail Spur Site are red maple-hardwood swamp, hemlock-northern hardwood forest, and successional shrubland, including approximately 18 acres of delineated wetlands, located primarily in the southern and eastern portions of the site. The site also includes approximately 0.5 acres of farm ponds and artificial ponds, 0.2 acres of shallow emergent marsh, 0.3 acres of shrub swamp, and 0.3 acres of common reed marsh. The site's wetlands provide wildlife habitat as a principal function and service, as well as floodflow alteration and sediment and toxicant retention. The upland areas in the northern and eastern portions of the site are primarily hemlock-northern hardwood forest, with average tree sizes of approximately 4 to 10 inches in diameter at breast height (dbh), indicating that this forested area is not yet fully mature. The upland areas in the southern part of the site are primarily successional shrubland due to recent tree mortality caused by the invasive emerald ash borer (*Agrilus planipennis*). Because there are no streams on the Rail Spur Site, no biotic surveys of the site were conducted.

Childcare Site

As shown in Figure 3.4-3 and Table 3.4-1, the dominant ecological communities at the Childcare Site are cropland and field crops, floodplain forest, shallow emergent marsh, and mowed lawn with trees. The cropland and field crop community predominates in the large central portion of the site, bisected by a narrow shallow emergent marsh. The forested area in the northeast corner of the site is primarily floodplain forest. The site includes approximately 4.6 acres of wetlands, including 2.7 acres of shallow emergent marsh and 1.9 acres of floodplain forest. As noted in Section 3.3 (Water Resources), the functions and services of these wetlands were not evaluated because construction and operation of the Childcare Site would avoid all jurisdictional wetlands. The uplands within 100 feet of the wetland boundaries are NYSDEC-regulated freshwater wetland adjacent areas. The functions and benefits of these areas will be evaluated in a separate analysis as part of the site permitting process. The area around the vacant single-family residence located in the southern portion of the site is primarily mowed lawn with trees. Although approximately 18 LF of an ephemeral stream feature were observed along the western boundary of the site, because this feature would not be affected by site construction, no biotic survey was conducted.

Connected Actions

Because the Connected Actions remain at various design stages, the ecological community acreages within the Connected Action LODs were estimated based on wetland delineations where available and were otherwise identified using field mapping and reviews of aerial imagery, under the conservative assumption that Connected Action construction effects would occur across all wetland and upland cover types within the LODs. Table 3.4-2 shows the estimated ecological community acreages within the Clay Substation expansion area, and Table 3.4-3 shows the estimated land cover acreages within the other Connected Action LODs.

Table 3.4-2 Existing Ecological Communities (Clay Substation Expansion Area)

Ecological Community	Acres
Shallow emergent marsh*	1.2
Shrub swamp*	6.9
Red maple-hardwood swamp*	0.3
Successional shrubland	9.9
Successional old field	5.6
Mowed lawn with trees	3.2
Mowed roadside / pathway	9.0
Unpaved road / path	2.3
Paved road / path	0.1
Total^	**39**

Notes: Acreages are estimates. *Acreages in wetlands are from wetland delineations by GZA (GZA, 2024) based on State wetland classifications (Edinger et al. 2014) and are subject to refinement based on NYSDEC review. Upland and developed acreages were characterized by AKRF using field mapping based on State wetland classifications, aerial imagery, and the ecological communities outlined in National Grid's Micron Electric Service Article VII application (National Grid, 2024a). ^ To account for rounding discrepancies, all totals have been rounded to the nearest whole number.

Table 3.4-3 Existing Land Cover Types (Other Connected Actions)

Land Cover Type	NG	WS	IWWTP	WWC	Total^
Developed	23.1	324.5	20.4	2.6	**371**
Forested	2.1	49.6	7.3	7.1	**66**
Shrubland	2.2	2	6.0	1.7	**12**
Active farmland	-	22.8	-	3.4	**26**
Open water	-	-	0.3	-	**< 1**
Palustrine emergent (PEM) wetlands	2.1	-	0.1	3.3	**6**
Palustrine scrub shrub (PSS) wetlands	4.3	3.6	0.7	0.2	**9**
Palustrine forested (PFO) wetlands	1.0	9	1.4	3.7	**15**
Palustrine unconsolidated bottom (PUB) wetlands	0.1	7.4	-	-	**8**
Riverine wetlands	-	2.4	-	-	**2**
Lacustrine wetlands	-	1.3	-	-	**1**
NYSDEC mapped wetlands*	-	39.8	-	-	**40**
Total^	**35**	**462**	**36**	**22**	**555**

Notes: NG = natural gas improvements; WS = water supply improvements; WWC = wastewater conveyance. Upland and developed land cover acreages are based on a review of aerial imagery data. Wetland acreages for the natural gas improvements, IWWTP, and wastewater conveyance are from wetland delineations by Fisher Associates (2021-2023), EDR (2024), and Ramboll (2024c), respectively. Wetland acreages for the water supply improvements are based on review of NWI and NYSDEC wetland maps, with NWI cover types used only where there was no overlap with NYSDEC wetland maps. *NYSDEC mapped wetland acreages are specific to State-mapped wetlands that do not overlap with NWI-mapped wetlands. All wetland acreages are subject to refinement based on applicable USACE and NYSDEC review. ^ To account for rounding discrepancies, all totals have been rounded to the nearest whole number.

The Connected Actions would be located within the broader Lake Ontario watershed. Youngs Creek and Shaver Creek join the Oneida River, which flows to the Oswego River and then Lake Ontario. The health of these waterbodies is influenced by local and regional conditions, including the conditions of upstream and adjacent wetlands and streams (USEPA, 2015). In general, the wildlife species identified at the Proposed Project sites also have the potential to occur within the Connected Action LODs. For additional detail on ecological communities and wildlife in the Connected Action LODs, see Appendix G-3.

3.4.3.2 Special Status Species

Special status species are those species for which Federal or State agencies afford an additional level of protection by law, regulation, or policy. Included in this category are species listed or proposed to be listed as threatened or endangered under the ESA; species that are currently candidates for Federal listing under the ESA; State-listed threatened or endangered species; and species otherwise granted special status at the Federal or State level.

Table 3.4-4 shows the special status species that may potentially occur in the vicinity of the Proposed Project and Connected Actions based on results from the USFWS Information for Planning and Consultation (IPaC) system, as identified by NYSDEC staff, or based on the

NYSDEC Environmental Assessment Form (EAF) mapper or the NYNHP database. For copies of these search results, see Appendices G-7 and G-8.

Table 3.4-4 Potentially Occurring Special Status Species Based on Search Results

Common Name	Scientific Name	Status	Project Component	Agency
Bats				
Indiana bat	*Myotis sodalis*	FE, SE	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	USFWS, NYSDEC
Northern long-eared bat	*Myotis septentrionalis*	FE, SE	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	USFWS, NYSDEC
Tricolored bat	*Perimyotis subflavus*	Proposed FE	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	USFWS
Birds				
Sedge wren	*Cistothorus stellaris*	ST	MC, RSS, CCS, CSEA, NGI, WWC	NYSDEC
Short-eared owl	*Asio flammeus*	SE	MC, RSS,	NYSDEC
Northern harrier*	*Circus hudsonius*	ST	MC, RSS, CCS	NYSDEC
Bald eagle	*Haliaeetus leucocephalus*	ST	WSI, IWWTP	NYSDEC
Black tern	*Chlidonias niger*	SE	WSI	NYSDEC
Pied-billed grebe	*Podilymbus podiceps*	ST	WSI, IWWTP, WWC	NYSDEC
Insects				
Monarch butterfly	*Danaus plexippus*	Proposed FT	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	USFWS
Bog buck moth	*Hemileuca maia menyanthevora*	FE, SE	WSI	USFWS, NYSDEC
Reptiles				
Eastern massassauga rattlesnake	*Sistrurus catenatus*	FT, SE	MC	USFWS, NYSDEC
Fish				
Lake sturgeon	*Acipenser fulvescens*	ST	WSI, IWWTP, WWC	NYSDEC

Plants				
Hairy small-leaved tick trefoil	*Desmodium ciliare*	ST	IWWTP	NYSDEC

Sources: USFWS IPaC system (2025); NYSDEC EAF mapper (NYSDEC, 2025b); NYNHP database (2023). Notes: FE = Federal listed endangered; FT = Federal listed threatened; SE = State listed endangered; ST = State listed threatened; MC = Micron Campus; RSS = Rail Spur Site; CCS = Childcare Site; CSEA = Clay Substation expansion area; NGI = natural gas improvements; WSI = water supply improvements; WWC = wastewater conveyance. *Northern harrier not identified by EAF mapper or NYNHP results as having potential to occur within CCS, but has been observed on MC and CCS.

Although the species in Table 3.4-4 appear in the IPaC, EAF mapper, or NYNHP results, or were noted in NYSDEC correspondence, there is not suitable habitat present for every species in Table 3.4-4 in the vicinity of the Proposed Project or Connected Actions. For additional information on these species, see Appendix G-3.

Table 3.4-5 on the following page shows the special status species potentially occurring in the vicinity of the Proposed Project and Connected Actions based on the presence of suitable habitat as identified in IPaC system, EAF mapper, or NYNHP database results, and as identified during visual encounter wildlife surveys and an 8-week grassland breeding bird survey. The potential for species to occur based on presence of suitable habitat is discussed below.[45]

Bats

The Micron Campus site and the Rail Spur Site include suitable habitat for the Indiana bat, northern long-eared bat, and tricolored bat. Each bat species was documented within the Micron Campus site and is presumed to be present within the Rail Spur Site. The Micron Campus site is within one mile of a previously documented Indiana bat maternity roost and three miles of other known Indiana bat roost trees and capture locations. Based on these findings, AKRF conducted an acoustic bat survey of the Micron Campus site (see Appendix G-4), which detected all three bat species, indicating that these bat species have the potential to roost or forage on the Micron Campus site and the Rail Spur Site. The acoustic survey also documented Indiana bat and northern long-eared bat activity at levels indicating that maternity roosts for one or both of those species may be present on the Micron Campus site. None of the three bat species would be expected to occur in the vicinity of the Childcare Site due to the site's smaller size and lack of appropriate habitat. The three bat species also have the potential to occur within the vicinity of the Connected Actions based on the presence of suitable habitat.

Birds

Northern harrier is a migratory bird of prey that breeds and winters in open habitats such as grasslands, old fields, pastures, croplands, and salt marshes (MacWhirter and Bildstein, 1996). Although NYSDEC generally considers 25 acres to be the minimum habitat size suitable for at-risk grassland birds (NYSDEC, 2024c), northern harriers typically require open habitats of 75 acres or greater for breeding; the species is sensitive to human disturbance during both the breeding season and the wintering period, and nest-site abandonment is common in response to minor levels of human activity (Smith et al. 2020). The species has been documented wintering and breeding on the Micron Campus site and was observed on the site during the grassland breeding bird survey in May 2023 and geotechnical investigations in April 2023 and May 2024. Northern harrier would not be expected to occur at the Rail Spur Site due to the lack of open habitat.

[45] As noted in Table 3.4-5, for various reasons, the eastern massassauga rattlesnake and bog buck moth have been screened from further review in Section 3.4. The sedge wren has been screened from further review in connection with the Proposed Project, but is reviewed based on habitat present in the vicinity of the Connected Actions.

Table 3.4-5 Potentially Occurring Special Status Species Based on Presence of Suitable Habitat

Common Name	Scientific Name	Status	CH	Project Component	Suitable Habitat (Proposed Project)	Suitable Habitat (Connected Actions)
Bats						
Indiana bat	*Myotis sodalis*	FE, SE	None in NY	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	Suitable habitat present. Species documented within MC and presumed to be present on RSS.	Suitable habitat present in unmaintained portions of existing utility corridors and new utility corridors for all Connected Actions, and forested areas of CSEA, IWWTP, and WWC.
Northern long-eared bat	*Myotis septentrionalis*	FE, SE	None in NY	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	Suitable habitat present. Species documented within MC and presumed to be present on RSS.	Suitable habitat present in unmaintained portions of existing utility corridors and new utility corridors for all Connected Actions, and forested areas of CSEA, IWWTP, and WWC.
Tricolored bat	*Perimyotis subflavus*	Proposed FE, S-NL	None in NY	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	Suitable habitat present. Species documented within MC and presumed to be present on RSS.	Suitable habitat present in unmaintained portions of existing utility corridors and new utility corridors for all Connected Actions, and forested areas of CSEA, IWWTP, and WWC.
Birds						
Northern harrier*	*Circus hudsonius*	ST	N/A	MC, CCS	Suitable habitat present. Species documented breeding and wintering within MC and wintering within CCS.	Suitable habitat present within 12 former or active agricultural fields adjacent to CSEA, NGI, WSI, WWC.
Short-eared owl*	*Asio flammeus*	SE	N/A	MC	Suitable habitat present. Species documented wintering within MC.	Suitable habitat present within 12 former or active agricultural fields adjacent to CSEA, NGI, WSI, WWC.
Sedge wren**	*Cistothorus stellaris*	ST	N/A	MC, RSS, CCS, CSEA, NGI, WWC	None (see note).	Suitable habitat present within NGI and WWC utility corridor alignments that pass through or adjacent to large open habitat (successional old fields). Suitable habitat not present in vicinity of CSEA due to proximity of forest edges and roads to available large open habitat.
Bald eagle	*Haliaeetus leucocephalus*	ST	N/A	WSI, IWWTP	None.	Suitable habitat present along WSI, IWWTP, and WWC in vicinity of Oneida and Oswego Rivers. Species documented nesting in vicinity of IWWTP.
Black tern	*Chlidonias niger*	SE	N/A	WSI	None.	Suitable habitat present within approximately 60-hectare wetland immediately adjacent to WSI in vicinity of Oneida River.
Pied-billed grebe	*Podilymbus podiceps*	ST	N/A	WSI, IWWTP, WWC	None.	Suitable habitat present in emergent wetland habitats and in vicinity of Oneida and Oswego Rivers adjacent WSI, IWWTP, and WWC. Species documented in vicinity of IWWTP.
Insects						
Monarch butterfly	*Danaus plexippus*	Proposed FT	None in NY	MC, RSS, CCS, CSEA, NGI, WSI, IWWTP, WWC	Suitable habitat present. Milkweed species documented within MC, RSS, and CCS.	Suitable habitat present in utility corridors, roadside habitats, and wetlands of all Connected Actions.
Bog buck moth***	*Hemileuca maia menyanthevora*	FE, SE	None in NY	WSI	None (see note).	None (see note).
Reptiles						
Eastern massassauga rattlesnake****	*Sistrurus catenatus*	FT, SE	None in NY	MC	None (see note).	None (see note).
Fish						
Lake sturgeon	*Acipenser fulvescens*	ST	N/A	WSI, IWWTP, WWC	None.	Suitable habitat present where WSI cross Oswego River and within IWWTP at OOWWTP outfall to Oneida River.
Plants						
Hairy small-leaved tick trefoil	*Desmodium ciliare*	ST	N/A	IWWTP	None.	Suitable habitat present within IWWTP. Species documented in vicinity of IWWTP.

Sources: USFWS IPaC system (2025); NYSDEC EAF mapper (NYSDEC, 2025b); NYNHP database (2023); AKRF acoustic bat survey (see Appendix G-4); AKRF grassland breeding bird survey (see Appendix G-5). Notes: FE = Federal listed endangered; FT = Federal listed threatened; SE = State listed endangered; ST = State listed threatened; S-NL = Not State listed; CH = designated critical habitat; N/A = not applicable; MC = Micron Campus; RSS = Rail Spur Site; CCS = Childcare Site; CSEA = Clay Substation expansion area; NGI = natural gas improvements; WSI = water supply improvements; WWC = wastewater conveyance. Presence of suitable habitat determined for Proposed Project (and telecommunications improvements to be built along existing road ROW immediately adjacent to MC) during visual encounter wildlife surveys conducted June 23, 2023, and Jan. 30-Feb. 1, 2024, and 8-week grassland breeding bird survey conducted on MC (May 15-18, 22-24; June 5-7, 13, 19-21, 28-30; July 3-5, 10-12, 2023) and approved by NYSDEC. Presence of suitable habitat determined for Connected Actions based on IPaC system and EAF mapper results. *Northern harrier not identified by EAF mapper or NYNHP results as having potential to occur within CCS, but has been observed on MC and CCS. A harrier egg was observed on ground in MC on Apr. 19, 2023, during geotechnical investigations, but was not in nest and appeared to be unviable and abandoned. Short-eared owl and northern harrier not listed in EAF mapper results for Connected Actions are being analyzed as having potential to occur for purposes of grassland bird incidental take permit application; therefore, both species are analyzed in Section 3.4. **Sedge wren previously recorded breeding within 0.25 miles of Proposed Project according to 1985 NYNHP record but was not found to be present during 8-week grassland breeding bird survey conducted on MC; preferred habitat not available on RSS; CCS field habitat is generally too small and too close to roads and shelterbelts to support grassland birds; for these reasons, these sites were not included as part of 8-week survey; therefore, species has been screened from further review in connected with Proposed Project, but suitable habitat for species is present in vicinity of Connected Actions. ***Bog Buck Moth listed in IPaC system results for WSI. However, bog buck moth is highly restricted to specific sites within known limited locations in Oswego County due to specialized habitat requirements (e.g., five known populations within Oswego County found in dunes along eastern shorelines of Lake Ontario and sixth population within wetland in southwest inland portion of the County (USFWS, 2023)). These locations are not in vicinity of Connected Actions (confirmed during informal consultation with USFWS); therefore, species has been screened from further review. ***Eastern massasauga rattlesnake listed in IPaC system results but does not have potential to be present within Proposed Project due to specialized habitat requirements and limited range; therefore, species has been screened from further review.

Birds (continued)

Northern harrier was documented at the Childcare Site during a visual survey in January 2024. However, because of the small size of the field on the site and its proximity to houses and a road, the site is unlikely to support breeding northern harriers. The presence of northern harriers at the Childcare Site is likely limited to winter, when grassland birds tend to have smaller area requirements and are far less sensitive to human disturbance. Northern harriers also may occur on the adjacent fields to the north and west of the site, but would not be expected to breed there due to active agricultural uses of those fields. Suitable habitat for the species is present within former or active agricultural fields in the vicinity of the Connected Actions.

Short-eared owls have much larger area requirements (Booms et al. 2014, Wiggins et al. 2020), with winter home-range sizes in New York State averaging 538 acres (Gahbauer et al. 2021), Short-eared owls were documented wintering in large open habitats at the Micron Campus site, though none were observed during field surveys, and the species is not known or expected to nest or breed on the site. The species would not be expected to occur at the Rail Spur Site or the Childcare Site due to the lack of sufficiently large open habitat. Suitable habitat for the species is present within former or active agricultural fields in the vicinity of the Connected Actions.

There is no suitable habitat present in the vicinity of the Proposed Project for the bald eagle, black tern, or pied-billed grebe, but suitable habitat for these species is present in the vicinity of the proposed water supply and wastewater improvement areas. Bald eagles and pied-billed grebes have been documented nesting in the vicinity of the Oak Orchard site.

For additional information on bird species in the vicinity of the Proposed Project and Connected Actions, see Appendix G-3.

Insects, Fish, and Plants

Monarch butterflies are dependent on milkweed (*Asclepias* spp.) as their larval host plant. Common milkweed (*Asclepias syriaca*) and butterfly milkweed (*Asclepias tuberosa*) were observed on the Micron Campus site during site reconnaissance investigations in the summer of 2023 and milkweed also has been documented at the Rail Spur Site and the Childcare Site. Based on its association with a variety of habitats and the observed presence of milkweed, monarch butterfly would be expected to occur at any time from spring through fall in the vicinity of any of the Proposed Project or Connected Action components, including in open habitats, along the edges of forest or wetlands, or in utility corridors, roadside habitats, and wetlands.

There is no suitable habitat present in the vicinity of the Proposed Project for the lake sturgeon, but suitable habitat for the fish is present where water transmission lines would cross the Oswego River and near the existing OOWWTP outfall to the Oneida River.

There is no suitable habitat present in the vicinity of the Proposed Project for the hairy small-leaved tick trefoil, but suitable habitat for the plant is present at and the species has been documented at and in the vicinity of the Oak Orchard site.

3.4.4 Environmental Consequences

3.4.4.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. Therefore, the No Action Alternative would not have any effects on biological resources.

3.4.4.2 Preferred Action Alternative

Construction Effects

Construction of the Micron Campus would occur within an approximately 1,377-acre site boundary in phases (Phases 1A, 1B, 2A, and 2B) over a 16-year period, as described in Chapter 2 (Proposed Action and Alternatives), beginning with construction of Phase 1A in the western portion of the site and advancing eastward, and would include approximately 997 acres of ground disturbance: 676 acres during Phase 1A, 61 acres during Phase 1B, 239 acres during Phase 2A, and 21 acres during Phase 2B. Construction activities would include tree clearing and grubbing, site grading, soil excavation, bedrock removal, drilled pier foundation laying, and import of fill material, as described in Section 3.2 (Geology, Soils, and Topography). Each construction phase would include interim grading during construction and final grading at completion of the construction phase. Construction of the Rail Spur Site would occur within a 38-acre site boundary and would include approximately 23 acres of ground disturbance. Construction of the Childcare Site would occur within a 31-acre site boundary and would include approximately 13.6 acres of ground disturbance. In total, the Proposed Project would include approximately 1,034 acres of ground disturbance. Construction of the Proposed Project also would include discharge of fill material into wetlands and streams, as described in Section 3.3 (Water Resources), which would result in the permanent loss of approximately 193.38 acres of jurisdictional wetlands and 6,283 LF of jurisdictional surface water features within the Youngs Creek basin. Site clearing and construction activities, including the establishment of construction staging areas, would not commence until Micron has obtained applicable permits and approvals.

Construction of the Connected Actions would be undertaken by National Grid, OCWA, and OCDWEP, as described in Chapter 2. The EIS conservatively assumes that ground disturbance would occur across all acres within the Connected Action LODs. These estimates would be refined as individual Connected Action designs and permitting processes progress. Construction of the Connected Actions would result in the permanent loss of 6.40 acres of jurisdictional wetlands and 1,545 LF of stream features and regulated ditches, and also would result in temporary effects on approximately 72 acres of wetlands and 3,491 LF of surface water features.

Ecological Communities

<u>Proposed Project</u>

Table 3.4-6 on the next page shows the effects on ecological communities (losses) that would occur during Proposed Project construction, and remaining community acreages.

Table 3.4-6 Effects on Ecological Communities (Proposed Project)

Ecological Community	Micron Campus			Rail Spur Site			Childcare Site		
	Current	Loss	Remaining	Current	Loss	Remaining	Current	Loss	Remaining
Common reed marsh	< 0.1	-	< 0.1	(0.3)	-	(0.3)	-	-	-
Shallow emergent marsh	82.8 (79.4)	60.3 (56.9)	22.5 (22.5)	(0.2)	(0.1)	(0.1)	(2.7)	(0.1)	(2.6)
Deep emergent marsh	(151.9)	(42.8)	(109.2)	-	-	-	-	-	-
Shrub swamp	(33.0)	(23.3)	(9.7)	(0.3)	(0.1)	(0.2)	-	-	-
Red maple-hardwood swamp	111.1 (64.9)	62.1 (47.2)	49.0 (17.8)	(16.6)	(8.4)	(8.2)	-	-	-
Hemlock-hardwood swamp	(3.4)	(3.3)	(0.1)	-	-	-	-	-	-
Floodplain forest	197.1 (86.1)	97.5 (19.8)	99.6 (66.3)	-	-	-	4.3 (1.9)	0.0	4.3 (1.9)
Farm pond / artificial pond	(2.9)	(1.7)	(1.2)	(0.5)	(0.4)	(0.1)	-	-	-
Beech-maple mesic forest	40.9	40.9	-	-	-	-	-	-	-
Maple-basswood rich mesic forest	1.9	1.9	-	-	-	-	-	-	-
Rich mesophytic forest	41.8	35.3	6.5	-	-	-	-	-	-
Hemlock-northern hardwood forest	-	-	-	15.2	13.6	1.6	-	-	-
Successional southern hardwoods	56.7	56.3	0.4	-	-	-	-	-	-
Successional northern hardwoods	11.3	9.4	1.9	-	-	-	-	-	-
Spruce / fir plantation	6.3	6.3	-	-	-	-	-	-	-
Successional shrubland	194.2	187.5	6.7	4.2	0.5	3.7	-	-	-
Successional old field	278.7	253.3	25.4	-	-	-	-	-	-
Cropland / field crops	43.7	43.7	-	-	-	-	21.9	13.3	8.7
Mowed lawn with trees	69.4	59.2	10.1	-	-	-	1.8	-	1.8
Mowed roadside / pathway	46.5	8.7	37.8	-	-	-	-	-	-
Paved road / path	3.5	3.0	0.5	1.1	0.9	0.2	0.5	-	0.5
Total^	**1,377**	**997**	**380**	**38**	**24**	**14**	**31**	**13**	**18**

Notes: Values in parentheses represent effects on portions of acreages in wetlands field delineated by Ramboll using USACE wetland delineation field methodology. All other ecological communities characterized by AKRF using field mapping based on Edinger et al. 2014 cover types. Current, loss, and remaining acreages have all been rounded to the nearest tenth-acre and represent true acreage totals. The summation of loss and remaining acreages may vary slightly from current acreages due to rounding. All totals have been rounded to the nearest whole acre.

Micron Campus

As shown in Table 3.4-7, construction of the Micron Campus would result in the loss of approximately 253.3 acres of successional old fields, 187.5 acres of successional shrublands, and approximately 194 acres of delineated wetlands, 10.5 acres of which are non-jurisdictional. Construction also would result in the loss of 6,283 LF of jurisdictional surface water features within the Youngs Creek basin.

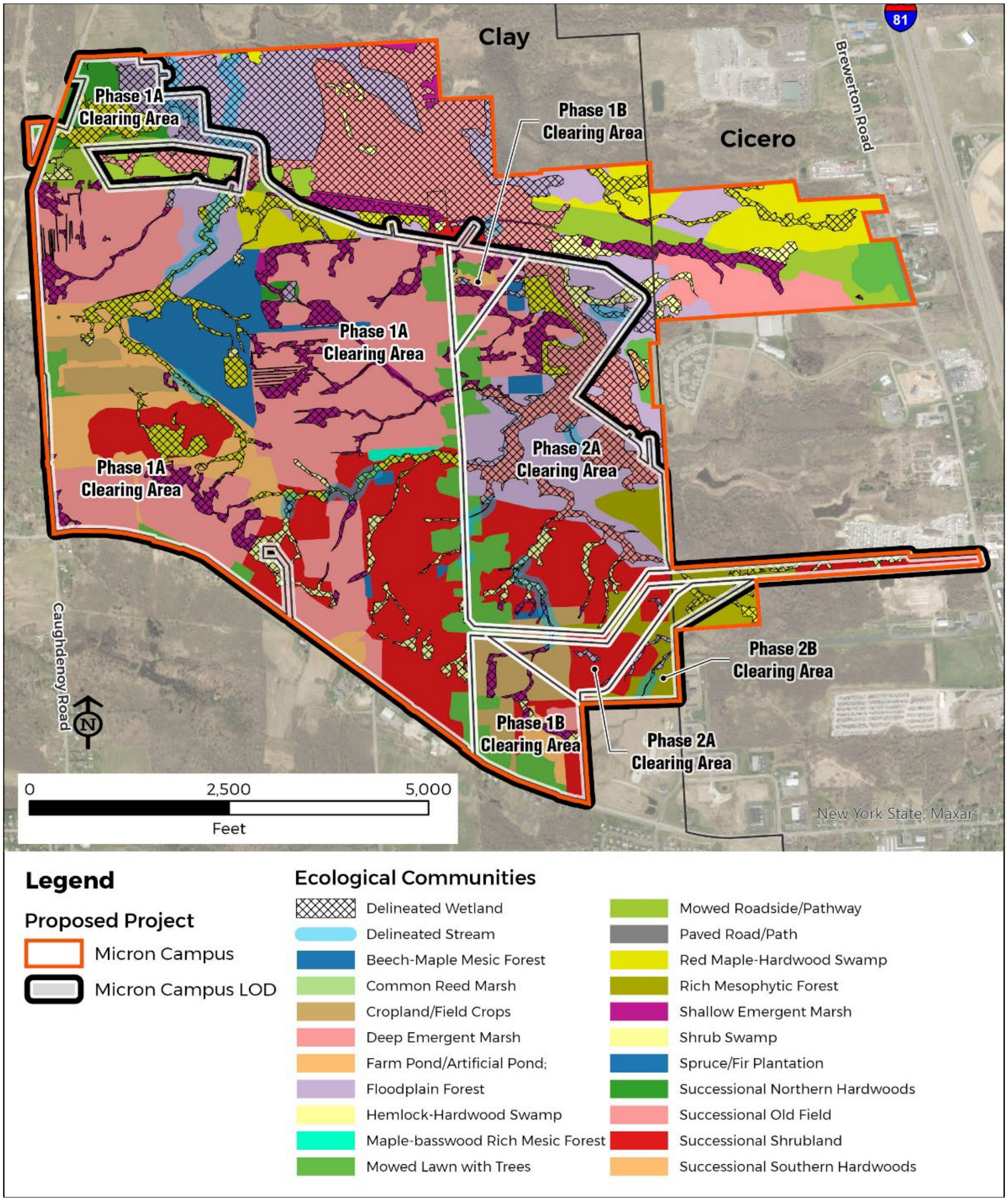
Table 3.4-7 Effects on Ecological Communities (Micron Campus)

Ecological Communities	1A	1B	2A	2B	Total
Shallow emergent marsh	44.7 (41.0)	6.9 (6.8)	9.8 (9.0)	-	60.3 (56.9)
Deep emergent marsh	(2.0)	-	(40.7)	-	(42.8)
Shrub swamp	(13.4)	(1.0)	(8.9)	-	(23.3)
Red maple-hardwood swamp	54.8 (39.8)	-	(6.1)	(1.2)	62.1 (47.2)
Hemlock-hardwood swamp	(3.3)	-	-	-	(3.3)
Floodplain forest	36.9 (13.0)	(0.5)	58.7 (5.0)	(1.3)	97.5 (19.8)
Farm pond / artificial pond	(0.8)	-	(0.9)	-	1.7
Beech-maple mesic forest	40.9	-	-	-	40.9
Maple-basswood rich mesic forest	1.9	-	-	-	1.9
Rich mesophytic forest	6.6	-	15.0	13.7	35.3
Successional southern hardwoods	49.2	7.1	-	-	56.3
Successional northern hardwoods	9.4	-	-	-	9.4
Spruce / fir plantation	1.8	-	4.5	-	6.3
Successional shrubland	122.6	7.6	52.9	4.3	187.5
Successional old field	234.6	7.7	11.0	-	253.3
Cropland / field crops	17.2	15.5	11.0	-	43.7
Mowed lawn with trees	27.4	13.8	18.0	-	59.2
Mowed roadside / pathway	8.7	-	-	-	8.7
Paved road / path	0.2	1.2	1.6	-	3.0
Total	**676**	**61**	**239**	**21**	**997**

Notes: Values in parentheses represent effects on portions of acreages in wetlands field delineated by Ramboll using USACE wetland delineation field methodology. All other ecological communities characterized by AKRF using field mapping based on Edinger et al. 2014 cover types. Affected acreages by phase have all been rounded to the nearest tenth-acre and represent true acreage totals. The summation of ecological community acreages varies slightly from total values due to rounding.

Figure 3.4-4 on the following page shows the effects on ecological communities by construction phase, with most of the effects occurring during Phases 1A and 2A.

Figure 3.4-4 Effects on Ecological Communities at Micron Campus



Source: AKRF ecological community field mapping (July 31 to Aug. 2, 2023) (AKRF, 2023); Ramboll wetland delineations (2021-2023) (Ramboll, 2023); Jacobs and Micron project design information (2024).

Table 3.4-8 describes the types of effects construction would have on the ecological communities at the site and the measures Micron would take to minimize those effects.

Table 3.4-8 Construction Effects on Ecological Communities (Micron Campus)

Types of Construction Effects and Minimization Measures	
Fragmentation	
Effects	Adverse changes in existing ecological community cohesion due to conversion of vegetated and terrestrial habitats to developed land, fragmentation associated with site clearing, and subsequent transformation of interior communities to edge communities, in particular during clearing of 676 acres during Phase 1A.
Measures	Measures would be implemented to leave vegetated buffer habitats intact near sensitive ecological communities (e.g., remaining wetlands and surface waters) where feasible. Micron also would implement an Erosion and Sediment Control Plan (ESCP) as part of its SWPPP to immediately stabilize areas along new edge communities.
Invasive Plant Species	
Effects	Influx of invasive and successional species may compromise the biotic integrity of remaining ecological communities over the course of construction.
Measures	Micron would implement an Invasive Species Management Plan (ISMP) (see draft plan in Appendix G-9) governing each construction phase, including measures to manage soil and debris to reduce invasive species transport on-site. Biological surveys would be conducted in coordination with construction contractors prior to commencing each phase. Efforts to eliminate invasive species would continue throughout the construction period as needed and the ISMP would be amended to address site-specific invasive species and other issues as they arise.
Altered Composition	
Effects	Adverse changes in microclimatic characteristics (e.g., wind, light, air flow, temperature), which would alter ecological community composition over time, change community structures, and potentially reduce plant species richness, which could indirectly affect wildlife habitat and species.
Measures	Micron would implement a Landscape Management Plan (LMP) to incorporate landscaped areas in the vicinity of new buildings, parking lots, and stormwater management areas with the completion of each fab (and at the Childcare Site), using native species to the maximum extent practicable. Micron also would plant native vegetated buffers along the perimeter of the Micron Campus to the maximum extent practicable, particularly in areas near sensitive habitats (including wetlands), to develop a transition zone between developed and undeveloped habitats and offer a degree of protection to the undeveloped habitats from the effects of fragmentation and invasive species. Forested areas that would remain undisturbed would be monitored by a construction monitor for invasive plant species encroachment and establishment. Preliminary landscape drawings are included in Appendix G-10.
Hydrology and Water Quality	
Effects	Changes in water quantity and quality due to wetland and surface water losses (e.g., increased sedimentation, nutrients, salinity, and temperatures) may compromise the integrity of remaining wetlands, riparian habitats, and terrestrial communities.

Measures	Micron would implement stormwater BMPs and SMPs (discussed in Section 3.3, Water Resources) to minimize direct and indirect effects from stormwater runoff and monitor effects on remaining wetlands, surface water, and groundwater.

Overall, construction of the Micron Campus would result in substantial losses of successional old fields and shrublands, and approximately 194 acres of delineated wetlands and 6,283 LF of delineated stream channels. Although the upland communities that would be lost are common throughout Onondaga County and the surrounding region (Cornell, 2024; SOCPA, 2022; NLCD, 2023), the loss of the wetlands and riparian stream channels and their conversion to developed land cover types would likely fragment and alter the composition of wetland, forested, and grassland habitat at the site where terrestrial wildlife, aquatic life, and special status species would potentially occur or are known to occur. Therefore, the loss of these ecological communities would likely result in significant adverse effects on biological resources.

Effects on Mammals

Highly mobile mammals, such as white-tailed deer and coyote, and semiaquatic mammals with the ability to relocate, such as American beaver, North American river otter, mink, and muskrat, would likely retreat to remaining undisturbed portions of the site or abandon the site in search of other habitat not already at carrying capacity. However, these highly mobile mammals may be challenged to find habitat elsewhere that is suitable and not already at carrying capacity. Some mortality of small mammals unable to relocate, such as those trapped in dens or burrows or unable to avoid the paths of site clearing and earthmoving activities, would be expected to occur. Mammals sensitive to noise and lighting disturbances would be expected to relocate to similar habitats off-site, leaving only synanthropic species (i.e., species accustomed to humans), including generalist species (e.g., rabbits and squirrels), on-site and in immediately adjacent areas. Construction effects on special status species are described under Special Status Species below.

Effects on Birds

Tree clearing would not occur during the primary breeding season for most bird species (April through July). Therefore, construction would avoid direct effects on actively breeding woodland birds protected under the MBTA. Consistent with NYSDEC guidance, to avoid effects on grassland birds, construction in open fields would be limited to late summer and early fall, after the breeding period but before the wintering period. However, most bird species that currently occupy the Micron Campus site, aside from highly synanthropic, disturbance-tolerant species, would likely retreat to remaining undisturbed portions of the site or abandon the site in search of other habitat not already at carrying capacity over the course of construction. Noise and lighting disturbances would potentially affect birds in immediately adjacent areas. Overall, many bird populations at the site would be expected to experience reduced fitness and survival, and steep declines of populations in the immediate area around the site would be expected to occur. Construction effects on special status species are described under Special Status Species below.

Effects on Reptiles and Amphibians

Mass mortality of reptiles and amphibians, including salamanders, frogs, turtles, and snakes, would be expected to occur during construction as a result of site clearing, grubbing, and grading, as these taxa are not mobile enough to avoid the paths of most site clearing and earthmoving activities. Noise and lighting disturbances also would potentially affect reptiles and amphibians in immediately adjacent areas. In addition, construction could indirectly affect amphibians and aquatic reptiles by altering the water balance and water quality of the Youngs Creek basin. However, as described in Section 3.3 (Water Resources), Micron would implement stormwater BMPs and would be required to undertake SMPs that would be documented in a SWPPP as part of its SPDES CGP (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP). Micron also would implement the ESCP described above. Together, these measures would help minimize adverse effects on reptiles and amphibians. Construction effects on special status species are described under Special Status Species below.

Effects on Aquatic Life

The filling of wetlands and surface waters during construction of the Micron Campus would reduce the Youngs Creek wetland complex on the site and associated aquatic habitat. The elimination of wetlands and headwater streams, as described in Section 3.3 (Water Resources), could permanently alter the transport of sediment, organic matter, nutrients, and macroinvertebrates that are critical to downstream physical, chemical, and biological attributes and processes, including species composition and food web dynamics (Gomi et al. 2002, Meyer et al. 2007). Vegetation clearing and other construction effects may elevate stream temperatures, which could cause temperatures to exceed the tolerance levels of sensitive species, including many cold-water fish and macroinvertebrates (Nelson and Palmer 2007). Changes in topography and soil exposure may temporarily increase soil erosion, which could increase sediment, turbidity, and nutrient loading in receiving waterbodies. This could lead to harmful algal blooms and decreased dissolved oxygen levels, which could lead to fish kills, increased establishment and spread of invasive plants, or other adverse effects on aquatic biota (Driscoll et al., 2003, Fleming and Dibble 2015). As described in Section 3.3 (Water Resources), Micron would conduct water level and flow monitoring during construction to assess surface water and groundwater inflow and outflow in response to seasonal variations and precipitation events. In addition, Micron would implement the stormwater BMPs and SMPs and the ESCP described above to prevent discharge of sediment into wetlands and waterbodies during construction. These measures would help minimize adverse effects on the Youngs Creek complex downstream of areas of disturbance and on aquatic life in the complex. Construction effects on special status species are described under Special Status Species below.

Rail Spur Site

Construction of the Rail Spur Site would include approximately 22 acres of tree clearing and approximately 24 acres of ground disturbance. Construction at the site would result in the loss of approximately 9 acres of wetlands (8.4 acres of red-maple hardwood swamp, 0.1 acres of shallow emergent marsh, 0.1 acres of shrub swamp, and 0.4 acres of farm ponds / artificial ponds) and 13.6 acres of hemlock northern hardwood forest. The effects on ecological communities at the Rail Spur Site as a result of these changes would be anticipated to be similar to those that would occur at the Micron Campus as described above.

Childcare Site

Construction of the Childcare Site would include approximately 13 acres of ground disturbance. Effects on wetlands would be limited to the loss of 0.06 acres of non-forested, non-jurisdictional wetlands. Construction would avoid disturbance of approximately 18 acres of undeveloped land at the site, including shelterbelts (i.e., linear barriers of growth that buffer cropland from wind, erosion, and flooding), forested habitat currently functioning as edge communities, and a small floodplain forest in the northeast portion of the site. Construction would not be anticipated to cause abrupt microclimatic changes within these forested communities or create “sharp edges” around them (i.e., expose the edges of the communities to light, wind, temperature shifts, or moisture). Micron would implement the ESCP, ISMP, and LMP at the site to manage temporary erosion and sediment effects, prevent the introduction of invasive species, and incorporate landscaped areas using native species where feasible around the new site buildings, parking lots, pollinator gardens, and stormwater management areas.

The conversion of approximately 13.3 acres of cropland / field crop cover type would not significantly decrease the presence of that cover type in the area, given that more than two thirds (150,000 acres) of Onondaga County’s land area is made up of agricultural fields (Cornell, 2024; SOCPA, 2022). However, the conversion of approximately 13 acres of open habitat (including the cropland cover and the small portion of non-jurisdictional shallow emergent marsh) to developed areas would adversely affect the site’s grassland habitats. In addition, portions of the Childcare Site are within NYSDEC-regulated freshwater wetland adjacent areas; temporary effects on these areas would be subject to NYSDEC permitting and mitigation requirements.

Construction of the Childcare Site would displace most of the mammals, birds, reptiles, and amphibians within the approximately 13-acre ground disturbance area. Highly mobile wildlife sensitive to construction noise would be expected to relocate to the undeveloped 18 acres on the site or in search of other off-site habitat. Most species in the disturbance area would be expected to experience reduced fitness and survival. Some mortality of small mammals, reptiles, and amphibians unable to relocate to suitable alternative habitats not already at carrying capacity would occur. Wildlife expected to occur at the site, including the undeveloped 18 acres, during the early construction period would generally be limited to generalist species tolerant of human activity, but no suitable habitat would remain in the area of disturbance after clearing and construction of site facilities.

Connected Actions

As described in Chapter 2, National Grid, OCWA, and OCDWEP would undertake construction of the Connected Actions at various times over the course of the Proposed Project’s 16-year construction period. As noted in Section 3.4.3.1, because the Connected Actions remain at various design stages, the ecological community acreages within the Connected Action LODs were estimated based on wetland delineations where available and were otherwise identified using field mapping and reviews of aerial imagery, under the conservative assumption that Connected Action construction effects would occur across all wetland and upland cover types within the LODs. Therefore, this section assumes that construction of the Connected Actions would disturb the ecological communities in all 594 acres across the Connected Action LODs as identified in Table 3.4-2 and Table 3.4-3, although actual disturbance to existing ecological communities and land cover types would likely be less than the full extent of all the LODs, given that actual construction activity would not be anticipated to occur across the entire footprints of existing utility properties or the entire widths of existing utility easements.

As described in Section 3.2 (Geology, Soils, and Topography), construction methods for the natural gas line, water supply lines, and wastewater conveyance would include cut-and-cover (i.e., excavating trenches, laying pipe, and re-covering the trenches), jack and bore drilling, and HDD. The use of HDD to construct the natural gas line would help avoid effects on stream features within the natural gas line LOD. In addition, work in or near wetlands would require the use of temporary mats and mat bridges to support heavy machinery; the mats also would be used to protect wetlands and sensitive areas from equipment and compression. In general, areas disturbed by construction of the utility lines, including wetlands, would be returned to grade and appropriately seeded or allowed to naturally re-vegetate with straw mulch.

In general, the land cover types in the Connected Action LODs range from wetlands to a mix of farmland, shrubland, forested areas, and developed areas common to Onondaga County and the surrounding five-county region (Cornell, 2024; SOCPA, 2022; NLCD, 2023). As described in Section 3.3 (Water Resources), construction of the Connected Actions would result in the permanent loss of 6.40 acres of jurisdictional wetlands and 1,545 LF of jurisdictional ditches, and temporary effects on 72.30 acres of wetlands and 3,491 LF of jurisdictional rivers and streams. For additional detail on the permanent and temporary effects on wetland cover types within the Connected Action LODs, see Section 3.3 and Appendix F. Most construction disturbance within the LODs would occur in previously disturbed areas (roughly 385 acres of developed land, mowed lawn, mowed roadside / pathway, and paved and unpaved road / path cover types) and areas associated with various levels of human activity (roughly 26 acres of active cropland), with the remaining disturbance occurring in forested uplands, shrubland, old fields, and wetlands (roughly 182 acres of upland forests shrubland, old fields, forested and non-forested wetlands, and scrub-shrub wetlands).

As noted in Section 3.4.3.1, the Connected Actions would be located in the Youngs Creek and Shaver Creek basins, which empty into the Oneida River, which flows to the Oswego River and then to Lake Ontario. The health of these waterbodies is influenced by local and regional conditions, including the conditions of upstream and adjacent wetlands and streams. In general, the wildlife species identified at the Proposed Project sites also have the potential to occur in this environment, including within the terrestrial and wetland habitats within the Connected Action LODs. Wildlife with the ability to relocate would be expected to abandon the LODs in search of other habitat. Some mortality of smaller or less mobile wildlife may occur. Disturbances to wildlife in immediately adjacent areas from human activity and construction noise and lighting also may occur. Wildlife sensitive to these disturbances would be expected to move away from these adjacent areas, leaving primarily synanthropic generalist species in the vicinity.

The permitting processes for the Connected Actions would be expected to incorporate conditions relating to wildlife, including restrictions on work in wetlands and time of year restrictions, as applicable. National Grid, OCWA, and OCDWEP would be responsible for coordinating with permitting agencies on these restrictions. Installation of utility lines under mapped rivers and streams and construction of other Connected Actions in the vicinity of surface waters would be conducted in accordance with applicable permits, including erosion and sediment control measures in SWPPPs to minimize potential adverse effects on aquatic resources due to increased stormwater runoff, sediment, and nutrients from these activities. OCDWEP would coordinate with USACE, NYSDEC, and NYSDOS on conditions to protect water quality during construction as part of the permitting process.

Based on the above, construction of the Connected Actions would not result in significant adverse effects on biological resources.

Special Status Species

As the lead agency for purposes of Section 7 consultation under the ESA, CPO determined early in the consultation process that the Proposed Project would be expected to have effects on two Federal listed endangered species, the Indiana bat and the northern long-eared bat. Because the Proposed Project is a major construction activity, USFWS regulations require the preparation of a BA (50 C.F.R. § 402.12).

Although the ultimate responsibility for compliance with Section 7 remains with CPO, CPO designated Micron as a non-Federal representative to prepare the BA (50 C.F.R. § 402.08). Accordingly, AKRF prepared a BA (Appendix G-4), which CPO and USFWS have reviewed to evaluate the potential effects of the Proposed Project on Federal listed species and determine whether they are likely to be adversely affected by the action.[46]

Following review of the BA, USFWS will be responsible for issuing a BO concerning the incidental take of Federal listed species in connection with the Proposed Project. The BO will include reasonable and prudent measures necessary or appropriate to minimize the impact of the incidental take of such species.

In addition to the BO to be issued by USFWS, NYSDEC will be responsible for issuing an ECL Article 11 Endangered and Threatened Animal Species Incidental Take Permit for the Proposed Project.

Based on the BA and information reviewed to date, CPO anticipates making the effect determinations shown in Table 3.4-9.

Table 3.4-9 Anticipated CPO Effect Determinations (Proposed Project)

Species	**ESA Status**	**Anticipated** CPO Effect Determination
Indiana bat	FE	May Affect, Likely to Adversely Affect
Northern long-eared bat	FE	May Affect, Likely to Adversely Affect
Tricolored bat	Proposed FE	Not Likely to Jeopardize; May Affect, Likely to Adversely Affect
Northern harrier	N/A	N/A (State-listed only)
Short-eared owl	N/A	N/A (State-listed only)
Sedge wren	N/A	N/A (State-listed only)
Bald eagle	N/A	N/A (but protected under MBTA and BGEPA)
Black tern	N/A	N/A (State-listed only)
Pied-billed grebe	N/A	N/A (State-listed only)

[46] There is no designated critical habitat present in the vicinity of the Proposed Project or Connected Actions. Therefore, CPO does not anticipate making an effect determination with respect to any designated critical habitat.

Monarch butterfly	Proposed FT	Not Likely to Jeopardize
Lake sturgeon	N/A	N/A (State-listed only)
Hairy small-leaved tick trefoil	N/A	N/A (State-listed only)

Notes: FE = Federal listed endangered; FT = Federal listed threatened. The ESA Section 7 determinations are based on the BA (Appendix G-4). As noted in Table 3.4-5, the bog buck moth and eastern massassauga rattlesnake do not occur in the vicinity of the Proposed Project or Connected Actions. Therefore, CPO made "no effect" determinations for these species, and no Section 7 consultation for them is required.

The following discussions evaluate the potential effects of construction of the Proposed Project and Connected Actions on the species listed in Table 3.4-9. However, CPO's anticipated ESA Section 7 effect determinations and NYSDEC's ECL Article 11 take determinations are subject to ongoing coordination with USFWS and NYSDEC, including review of the BA, BO, and the Grassland Bird Incidental Take Permit Application. The Connected Actions would be subject to separate permitting processes. As part of those processes, National Grid, OCWA, and OCDWEP would be responsible for any required coordination or consultation with Federal and State agencies concerning potential effects on and incidental take of listed special status species.[47]

Bats

The Indiana bat and the northern long-eared bat are both Federal and State listed endangered species, and the tricolored bat is proposed to be listed as a Federal endangered species. Suitable habitat for each of these three bat species is present at and in the vicinity of the Proposed Project and Connected Action sites. The acoustic bat survey conducted by AKRF (see Appendix G-4) documented the presence of the three species at the Micron Campus site. Based on those results, the bat species also are presumed to be present at the Rail Spur Site. However, the lack of sizable forest habitat at the Childcare Site makes that site unlikely to be used as foraging habitat by Indiana or tricolored bats, and even less so by northern long-eared bats.

The three bat species generally occupy trees in forested areas at and in the vicinity of the Proposed Project and Connected Actions during the spring, summer, and early fall, from April 1 through October 31, but hibernate in caves in winter, from November 1 through March 31. To avoid direct take of Indiana bats, northern long-eared bats, and tricolored bats, all tree clearing for the Proposed Project and Connected Action sites shall only occur within the winter hibernation window from November 1 through March 31.

However, tree clearing and construction of the Proposed Project and Connected Actions would eliminate potential foraging and roosting habitat for the bat species by converting the forested ecological communities at the sites through development. This would include the permanent loss of approximately 467 acres of potential roosting habitat, based on the anticipated effects on forested ecological communities at the Micron Campus site and the Rail Spur Site (see Table 3.4-10). These changes would leave no foraging or roosting habitat of sufficient size or sufficiently free of high levels of disturbance to support the species.

[47] National Grid has submitted an Article VII application for the electricity improvements to NYSPSC, which is currently under review (National Grid, 2024a), and has submitted a joint permit application for the natural gas improvements to USACE and NYSDEC (National Grid, 2024a).

Upon returning to the Micron Campus and the Rail Spur Site during the first spring following tree removal and other site construction, Indiana bats and northern long-eared bats would need to find suitable alternate foraging, roosting, and maternity habitat beyond the construction area in the event their roosts would be lost. In addition, during the roosting period from April 1 to October 31, any bats present in suitable habitat adjacent to construction areas would potentially experience construction noise and lighting disturbance.

Table 3.4-10 Pre- and Post-Construction Roosting Habitat Acreage by Project Component

Project Component	Total Acreage	Total Forest/Roosting Habitat Acreage	Total Forest/Roosting Habitat Acreage to be Removed	Total Forest/Roosting Habitat Remaining
Micron Campus	1377	717	445	272
Childcare Site	31	4	0	4
Rail spur	38	35	22	13
Total Proposed Project	**1446**	**756**	**467**	**289**
Connected Actions				
Clay Substation Expansion	39	0	0	0
Natural Gas Line	35	8	8	0
Water Supply Infrastructure	462	199	199	0
Industrial Wastewater Infrastructure	99	39	21	18
Total Connected Actions	**635**	**246**	**229**	**18**
Grand Total	**2081**	**1002**	**696**	**307**

Note: Roosting habitat defined as the combined acreage of all 2021 NLCD woodland cover types (Deciduous Forest, Evergreen Forest, Mixed Forest, Woody Wetlands). All acreages rounded to the nearest whole number. Due to rounding, total area sizes are subject to differ from the sum of their NLCD components.

Construction effects on bat habitat would begin with Micron Campus Phase 1A, which would include approximately 676 acres of ground disturbance, and construction of the Rail Spur Site, which would include 24 acres of ground disturbance. Suitable bat foraging and roosting habitat would initially remain in undisturbed areas and adjacent areas, particularly to the north and east. However, as construction of the Micron Campus progresses from west to east, the amount of habitat loss would eventually exceed the tolerance thresholds of Indiana and northern long-eared bats, leading to social network and colony dissolution. Any displaced reproductive females would need to promptly locate alternate maternity habitat, which could lead to reduced birth rates, juvenile survival, and recruitment beginning with the first year following displacement. Overall, reductions in Indiana and northern long-eared bat fitness and survival would potentially affect longer-term population size and viability in the vicinity of the Proposed Project.[48]

[48] Construction of the Childcare Site would be limited to ground disturbance within an existing agricultural field,

The acoustic bat survey of the Micron Campus site identified tricolored bats only during two of 478 nights of observation, indicating that the presence of tricolored bats is limited to the occasional passage of solitary males and that the species is not using the site as core foraging habitat, though high-flying individuals may have avoided detection. Due to their high mobility and adaptability to a variety of forest types and conditions, tricolored bats are relatively tolerant of local habitat loss and capable of relocation (USFWS, 2022). Although reproductive females may have more limited capacity for long-distance relocation (USFWS, 2022), the extremely low tricolored bat acoustic activity detected during the survey indicates that the site is not being used as maternity habitat. Further, habitat loss is not considered a significant threat currently facing tricolored bat populations (USFWS, 2021, 2022).

Based on the above, construction of the Proposed Project would have a significant adverse effect on Indiana bats, northern long-eared bats, and tricolored bats. CPO anticipates making a "may affect, likely to adversely affect" determination for the Indiana bat and the northern long-eared bat, and a "not likely to jeopardize; may affect, likely to adversely affect" determination for the tricolored bat. Take determinations for the two State-listed bat species are subject to ongoing NYSDEC review.

Based on information available to date, construction of the Connected Actions would be conservatively estimated to disturb approximately 82 acres of potential roosting habitat for Indiana, northern long-eared, and tricolored bats, based on the acreage of all forested land cover types and ecological communities in the Connected Action LODs (see Table 3.4-2 and Table 3.4-3). This conservative estimate assumes full tree clearing across all existing utility ROW would be needed for cut-and-cover trenching and other construction activities, though actual clearing would likely be more limited in extent. However, upon returning to Connected Action LODs during the first spring following tree removal and other site construction, Indiana bats and northern long-eared bats would need to find suitable alternate foraging, roosting, and maternity habitat beyond the construction area in the event their roosts would be lost. In addition, during the roosting period from April 1 to October 31, any bats present in suitable habitat adjacent to construction areas would potentially experience construction noise and lighting disturbance. Effect and take determinations for the Connected Actions are subject to ongoing coordination and consultation.

Northern Harrier

The northern harrier is a State listed threatened species and a migratory bird of prey that breeds and winters in open habitats such as grasslands, old fields, pastures, croplands, and salt marshes. Based on the grassland breeding bird survey conducted by AKRF (Appendix G-5), suitable habitat for the species is present at the Micron Campus site and Childcare Site and within 12 former or active agricultural fields adjacent to the electricity, natural gas, water supply, and wastewater improvements. No suitable open habitat is present at the Rail Spur Site. AKRF documented northern harrier breeding and wintering at the Micron Campus site and wintering at the Childcare Site. As noted in Section 3.4.3.2, the presence of the species at the Childcare Site is likely limited to winter, and the 24.6 acres of open habitat at the site (21.9 acres of cropland / field

would not involve any tree clearing, and would preserve the existing shelterbelts along the western edge of the property and the undeveloped floodplain forest area in the northeastern corner of the site. Therefore, construction of the Childcare Site would not be expected to reduce potential bat foraging or roosting habitat, though indirect effects from construction noise and lighting disturbance may occur.

crops and 2.7 acres of shallow emergent marsh) is likely too small to support nesting of northern harriers. Northern harriers also may occur in adjacent fields to the north and west of the Childcare Site, but would not be expected to breed there due to active agricultural uses of those fields.

The Proposed Project would likely result in take of northern harriers under NYSDEC regulations due to habitat loss from site clearing and due to displacement in response to human activity, noise, and lighting disturbances from construction. Construction of the Micron Campus would potentially result in the northern harrier no longer using the site and being displaced from the area. Northern harrier wintering at the Childcare Site and in its adjacent fields also would likely experience noise and lighting disturbances, although the shelterbelts and floodplain forest segment on the Childcare Site would potentially partially shield individuals in the adjacent fields from some of the effects of noise and lighting disturbance.

Based on the above, construction of the Proposed Project would have a significant adverse effect on northern harriers. NYSDEC anticipates making a take determination for the species due to construction of the Proposed Project.

Based on information available to date, construction of the Connected Actions would be conservatively estimated to disturb approximately 54 noncontiguous acres of active cropland, shrubland, and successional old field and shrubland. Because northern harriers typically require open habitats of 75 acres or greater for breeding, construction of the Clay Substation expansion area would not be expected to result in direct or indirect effects on the species due to the lack of sufficient open habitat in or adjacent to the area. The natural gas, water supply, and wastewater lines would run through or adjacent to large agricultural fields with the potential to support northern harriers. Construction of those utility improvements would potentially displace northern harriers from selecting these fields as nesting or wintering habitat during one nesting and wintering season. However, such displacement would represent a spatially and temporally minor reduction in potential northern harrier habitat. Effect and take determinations for the Connected Actions are subject to ongoing coordination and consultation.

Short-eared Owl

The short-eared owl is a State listed endangered species and a migratory bird of prey that breeds and winters in large open habitats. Suitable habitat is present at the Micron Campus site and Childcare Site and within 12 former or active agricultural fields adjacent to the electricity, natural gas, water supply, and wastewater improvements. No suitable open habitat is present at the Rail Spur Site. AKRF documented the species wintering at the Micron Campus site.

The Proposed Project would likely result in take of short-eared owls under NYSDEC regulations due to habitat loss from site clearing and due to displacement in response to human activity, noise, and lighting disturbances. Construction of the Micron Campus would potentially result in the short-eared owl no longer using the site and being displaced from the area.

Based on the above, construction of the Proposed Project would have a significant adverse effect on short-eared owls. NYSDEC anticipates making a take determination for the species due to construction of the Proposed Project.

The natural gas, water supply, and wastewater lines would run through or adjacent to large agricultural fields with the potential to support short-eared owls. Construction of those utility improvements would potentially displace short-eared owls from selecting these fields as nesting or wintering habitat for a maximum of one nesting and wintering season. However, such displacement would represent a spatially and temporally minor reduction in potential short-eared owl habitat. Effect and take determinations for the Connected Actions are subject to ongoing coordination and consultation.

Sedge Wren

The sedge wren is a State listed threatened species. Suitable habitat is not present in the vicinity of the Proposed Project or the Clay Substation expansion area, but is present within or adjacent to segments of the natural gas line and wastewater conveyance that pass through successional old fields. Construction of these improvements could temporarily displace sedge wrens from selecting the associated habitat, but such displacements would represent a spatially and temporally minor reduction in potential sedge wren habitat. Effect and take determinations for the Connected Actions are subject to ongoing coordination and consultation.

Bald Eagle

The bald eagle is not currently listed under the ESA but is protected under the MBTA and the BGEPA, and is a State listed threatened species. Suitable bald eagle habitat is not present in the vicinity of the Proposed Project, but is present in the vicinity of the water supply and wastewater improvements, and the species has been documented nesting in the vicinity of the Oak Orchard site. OCWA and OCDWEP would coordinate with USFWS and NYSDEC as part of the permitting processes for their improvements on measures to protect bald eagles. Construction activities would adhere to the distance-specific criteria in the USFWS National Bald Eagle Management Guidelines and other conditions imposed by USFWS and NYSDEC.

Black Tern

The black tern is a State listed endangered species. Suitable habitat is not present in the vicinity of the Proposed Project, but is present near the water supply improvement LOD within approximately 60 hectares of large emergent wetlands in the vicinity of the Oneida River near Country Route 12 and Peter Scott Road. OCWA would coordinate with NYSDEC as part of the permitting process. Construction activities would adhere to time-of-year restrictions, wetland matting requirements, and other conditions imposed by NYSDEC.

Pied-billed Grebe

The pied-billed grebe is a State listed threatened species. Suitable habitat is not present in the vicinity of the Proposed Project, but is present in emergent wetland habitats adjacent to the water supply and wastewater improvements, in the vicinity of the Oneida and Oswego Rivers. The species has been documented in the vicinity of the Oak Orchard site. OCWA and OCDWEP would coordinate with NYSDEC as part of the permitting processes for their respective improvements. Construction activities would adhere to time-of-year restrictions, wetland matting requirements, and other conditions imposed by NYSDEC.

Monarch Butterfly

The monarch butterfly is proposed to be listed as a Federal threatened species. Based on the availability of flowering plants and milkweed, suitable habitat is present at all Proposed Project sites and in utility corridors, roadside habitats, and wetlands in the vicinity of all Connected Action LODs. Construction of the Proposed Project would result in substantial losses of suitable habitat, including successional shrublands and old fields at the Micron Campus and Rail Spur Site and agricultural fields at the Childcare Site. Direct mortality from site clearing would not occur during winter months when monarch butterflies are not present, but some mortality may occur at the latter end of the winter season when monarch butterflies begin to emerge. However, given the abundant suitable habitat throughout the region, overall adverse effects on the species in the area from construction of the Proposed Project and Connected Actions would be limited. Therefore, CPO anticipates making a “not likely to jeopardize” determination for the monarch butterfly.

Lake Sturgeon

Lake sturgeon is a State listed threatened species. Suitable habitat is present where the water supply improvements would cross the Oswego River and in the Oneida River near the outfall from the OOWWTP at the Oak Orchard site. Construction of the IWWTP would not involve construction in the Oneida River. OCWA would coordinate with NYSDEC as part of the permitting process for the construction of the proposed water supply improvements, which would include installation of water transmission lines using HDD under the Oswego River. Construction activities would adhere to applicable NYSDEC permit restrictions to avoid disturbing sturgeon during sensitive periods. In addition, the utilities would prepare SPCC/SPR Plans to avoid or minimize effects on sturgeon habitat water quality.

Hairy Small-leaved Tick Trefoil

Hairy small-leaved tick trefoil is a State listed threatened plant species. Suitable habitat is present at the Oak Orchard site and the species has been documented in the vicinity of the site.

OCDWEP would coordinate with NYSDEC to ensure that any individuals found at the site would be identified for on-site protection (through avoidance) or off-site protection (e.g., through transplanting or seed collection and propagation).

Operational Effects

Ecological Communities

Proposed Project

Construction of Phase 1A of the Micron Campus would include 676 acres of ground disturbance by 2028. Eventually, the Micron Campus LOD, including the fabs, all supporting buildings, and parking areas and driveways, would occupy 997 acres at full build-out in 2041, leaving approximately 380 acres of undeveloped land, primarily in the northern portion of the property. As described in Section 3.3 (Water Resources), the campus would create approximately 645 acres of impervious surface coverage, with the undeveloped areas covered mainly by manicured lawns, landscaped areas, and stormwater management areas. In general, the effects on ecological communities at the operational stage of the build-out would be similar to those described under Construction Effects, including fragmentation and altered composition of ecological communities, pressures from invasive plant species, and potential hydrological and water quality effects (see Table 3.4-8). The measures that Micron would implement to minimize those effects (in particular, the ISMP, LMP, and stormwater BMPs and SMPs) would also serve to help minimize the persistence of those effects during longer-term operations. Wildlife tolerant of fragmented habitats, anthropogenic noise, and lighting would be expected to occupy the remaining undeveloped portion of the Micron Campus north of the electric transmission corridor and east of Fab 4.

The Rail Spur Site would serve a longer-term industrial use and therefore would not have landscaped spaces. The site would create 4.3 acres of impervious surface coverage. During longer-term operations, the biotic integrity of the approximately 14 undeveloped acres on the site would be expected to decline due to changing microclimatic conditions from fragmentation, dust and soot deposition from aggregate material transported through the site during the 16-year construction window and changed hydrology from filling of wetlands. Micron would implement the stormwater BMPs and SMPs described above at the Rail Spur Site to minimize changes in downgradient hydrology through retention and filtering of stormwater runoff.

The Childcare Site would create 2.6 acres of impervious surface coverage, but would leave approximately 18 acres undeveloped, including the shelterbelts at the site boundary and the floodplain forest area in the northeastern portion of the site. The site would include stormwater management areas, a pollinator garden, vegetative screenings, a tree island, and shade trees. Micron would maintain this landscaping through maturity during longer-term operations, and the stormwater BMPs and SMPs would be used to manage and filter stormwater runoff. Operation of the Childcare Site would lead to an increase in existing daytime noise levels due to increased vehicle traffic, human activity, and operation of rooftop air handling units and other external building maintenance equipment. Wildlife tolerant of fragmented habitats, anthropogenic noise, and lighting would be expected to occupy the remaining undeveloped 18 acres of the site. Lighting effects from operation of the site would be reduced through the use of downward-directional lighting and extinguishing of larger light sources at night.

Connected Actions

Although the EIS conservatively assumes full ground disturbance across all Connected Action LODs, and there would be new impervious surfaces in the Clay Substation expansion area, OCWA LOWTP and Terminal Campus, and OCDWEP Oak Orchard site, total actual disturbance is likely to be more limited. For the linear utility improvements, areas disturbed by trenching will be covered and appropriately seeded or mulched for re-vegetation. Portions of the linear improvement alignments would be periodically mowed and maintained as herbaceous or low shrubland communities, but unmaintained corridor edges would be allowed to re-vegetate and eventually revert to forested cover.

Wildlife would be expected to occupy undeveloped parts of Connected Action LODs, utility ROW, and adjacent areas during longer-term operations. Wildlife remaining in the Clay Substation expansion area would largely be limited to synanthropic generalist species. Wildlife occurring at and adjacent to the Oak Orchard site is already largely limited to common generalist species, and that composition would be expected to continue during operations.

Connected Action stormwater management measures are subject to ongoing design and coordination with permitting agencies, but the Clay Substation expansion area and the Oak Orchard site, at minimum, would be anticipated to require implementation of stormwater management systems, to help reduce potential effects.

OCDWEP would be responsible for ensuring that operation of the IWWTP complies with SPDES industrial wastewater permit conditions, including effluent limitations and water quality standards under ECL Article 17 and 6 NYCRR Part 703. The effects of the IWWTP may vary depending on final design of the treatment plant. Although anticipated effluent volumes would not be likely to change river flow conditions, IWWTP effluent discharges would be subject to applicable SPDES industrial wastewater permit pretreatment standards and toxic effluent limitations under Section 307 of the CWA. OCDWEP would coordinate with NYSDEC to perform regular analytical and surface water samples and would comply with ongoing monitoring, reporting and sampling requirements.

With the implementation of planting to stabilize soil, allowance for natural plant succession, and adherence to permits that authorize stormwater and industrial wastewater discharges, operation of the Connected Actions would not result in significant adverse effects on biological resources.

Special Status Species

The following discussions evaluate the potential operational effects of the Proposed Project and Connected Actions on the species listed in Table 3.4-8. However, as noted above, CPO's anticipated ESA Section 7 effect determinations and NYSDEC's ECL Article 11 take determinations are subject to ongoing coordination with USFWS and review of the BA, BO, and the Grassland Bird Incidental Take Permit Application, and the Connected Actions would be subject to separate permitting processes, during which National Grid, OCWA, and OCDWEP would be responsible for any required coordination or consultation with Federal and State agencies concerning potential effects on and incidental take of listed special status species.

Bats

Following Proposed Project construction and anticipated fragmentation of Indiana bat, northern long-eared bat, and tricolored bat habitat, bat activity would be significantly reduced during operations, and the species generally would not be expected to roost or forage at the Proposed Project sites. Site operations would result in increased regular human activity and noise and lighting disturbance. Each of the three bat species exhibits a degree of tolerance of anthropogenic noise while roosting, but the species are likely to avoid foraging in areas with increased noise, which could limit potential foraging habitat to the edges of forested areas.

Indiana and northern long-eared bats are generally averse to artificial light. To help minimize adverse lighting effects, all nighttime exterior lighting at the Micron Campus would be designed to minimize light spillage or "trespass" beyond intended areas of illumination. Micron plans to design campus lighting fixtures where feasible to achieve the highest LEED standards for minimizing backlight, uplight, and glare,[49] with a focus on achieving near-zero uplighting, including by maximizing the use of warm white LEDs and cut-off optics to reduce uplight and trespass. Micron also would use alternate lights with quality optic controls on shorter poles where feasible for added functionality to control lighting effects.

Following disturbances during construction of the Connected Actions, to the extent that suitable forested areas for the bat species remain in the Connected Action LODs, returning bats would potentially be able to inhabit remaining suitable habitat, and generally would be expected to experience a lesser degree of noise and lighting disturbance compared to Proposed Project site operations. Suitable bat habitat in the Clay Substation expansion area and at the Oak Orchard site would largely remain similar to the suitable habitat present on those sites today. Some of the utility corridors would be allowed to re-vegetate and eventually revert to forested areas, which could potentially improve foraging and commuting conditions for Indiana bats and tricolored bats over time and compensate for initial losses in tree cover. The 70-foot-wide permanent corridors that would be maintained during operations would likely be narrow and vegetated enough to avoid fragmentation effects on northern long-eared bats.

Northern Harrier and Short-eared Owl

Following Proposed Project construction and anticipated fragmentation of northern harrier and short-eared owl habitat, northern harrier and short-eared owl activity would be comparatively limited during operations, and individuals would not be expected to winter at the Micron Campus or the Childcare Site. Large fields in or adjacent to the natural gas and wastewater improvement LODs would continue to provide suitable habitat to these species during operations.

Sedge Wren

Large fields in or adjacent to the natural gas and wastewater improvement LODs would continue to provide suitable habitat to sedge wrens during operations.

[49] Backlight creates light trespass onto adjacent sites by directing light in the opposite direction of the area intended to be lighted, uplight causes artificial sky glow, and glare is caused by high-angle front light (USGBC, 2025).

Bald Eagle

Suitable bald eagle habitat would remain in the vicinity of the Oak Orchard site. OCDWEP would be responsible for operating the IWWTP in compliance with SDPES industrial wastewater permit conditions, including conditions to protect water quality in adjacent bald eagle habitat.

Black Tern

Operation of the water supply improvements would not affect the black tern's emergent wetland habitat in the vicinity of the Oneida River.

Pied-billed Grebe

Emergent wetlands adjacent to the water supply and wastewater improvements in the vicinity of the Oswego and Oneida Rivers would continue to provide suitable habitat to pied-billed grebes during operations.

Monarch Butterfly

Proposed Project and Connected Action operations would not be expected to adversely affect monarch butterflies or suitable monarch butterfly habitat, which would continue to be abundantly present in the surrounding areas and would potentially regrow in utility corridor areas. Micron's LMP would promote flowering species used by monarch butterflies.

Lake Sturgeon

OCDWEP would be responsible for operating the IWWTP in compliance with SDPES industrial wastewater permit conditions, including conditions to protect water quality in adjacent lake sturgeon habitat in the Oneida River.

Hairy Small-Leaved Tick Trefoil

OCDWEP would continue to coordinate with NYSDEC during operations to ensure that any hairy small-leaved tick trefoils discovered at the Oak Orchard site would be identified for on-site protection (through avoidance) or off-site protection (e.g., through transplanting or seed collection and propagation).

Growth Inducing Effects

The Preferred Action Alternative would potentially result in growth inducing effects on biological resources primarily to the extent that increased demand for housing and business services in the five-county region, including supply chain growth, would lead to further development in the ecological communities and species habitat described in Section 3.4, including the water resources described in Section 3.3 (Water Resources).

The loss of at least some additional biological habitat would be expected within the five-county region due to site excavation, filling, and grading activities that would be required for construction of other residential or commercial development, including expansion of semiconductor supply chain business in the region. This induced build-out could pose risks to ecological communities due to fragmentation and the resulting quantity and quality of suitable habitat in the region. As described in Section 3.1 (Land Use, Zoning, and Public Policy), the Proposed Project would likely induce substantial new residential and commercial growth in the five-county region resulting in gradual changes to land use over an extended period as Micron builds the Proposed Project and as job opportunities attract new populations to the region. The locations and scale of this induced residential and commercial development cannot be predicted at this time, but because at least some of this induced growth would potentially result in significant changes to land use, those changes could potentially spur significant changes to biological resources as described above, subject to applicable environmental laws and regulations and permits and approvals.

To provide additional context, Table 3.4-11 below estimates potential land cover losses from induced growth based on applying historic patterns in land cover changes in the five-county region from 2001 to 2021 to projected induced household growth by 2041, using NLCD land cover types and U.S. Census Bureau (USCB) household data.

Table 3.4-11 Projected Land Cover Loss Due to Induced Growth by 2041

NLCD Cover Type	Onondaga County	Oswego County	Madison County	Cayuga County	Cortland County
Cultivated Crops	135 (259)	117 (239)	0 (254)	0 (676)	0 (406)
Deciduous Forest	573 (763)	633 (820)	0 (49)	0 (24)	0 (19)
Emergent Herbaceous Wetlands	23 (27)	18 (23)	0 (3)	0 (1)	0 (2)
Evergreen Forest	6 (104)	5 (101)	0 (37)	0 (4)	0 (20)
Grassland / Herbaceous	2 (8)	5 (9)	0 (8)	0 (0)	0 (2)
Mixed Forest	15 (17)	18 (19)	0 (0)	0 (0)	0 (1)
Open Water	4 (59)	3 (8)	0 (1)	0 (4)	0 (13)
Pasture / Hay	613 (688)	588 (662)	0 (51)	0 (49)	0 (149)
Shrub / Scrub	5 (43)	4 (7)	0 (2)	0 (2)	0 (1)
Woody Wetlands	255 (347)	268 (273)	0 (2)	0 (1)	0 (1)
Total	1,631 (2,315)	1,659 (2,161)	0 (407)	0 (757)	0 (614)

Sources: USGS NLCD (USGS, 2021) and USCB American Community Survey 2022 5-year estimate data (USCB, 2022a). Notes: Projected losses are in parentheses. Existing losses include areas that would be developed by the Proposed Project and Connected Actions. The BA includes a cumulative analysis of changes in forested area (including based on induced growth) that provides roosting habitat for Federal listed bats (see Appendix G-4). The grassland bird incidental take permit application will include a cumulative analysis of changes in grasslands. These analyses of changes in forested and grassland areas also apply to other wildlife species that rely on these habitats.

Overall, the projected losses of forested habitats due to induced growth by 2041 range from approximately 41 acres in Cortland County (a 0.0002 percent loss in habitat compared to 2021 acreage) to approximately 1,231 acres in Onondaga County (a 0.006 percent loss in habitat compared to 2021 acreage). Although Onondaga County supports listed bat species in the highest numbers among the five counties, projected forest loss in the County would only reduce bat roosting habitat from 39.9 percent to 39.7 percent of its total land cover in 2041. This 0.2 percent change in forest cover would not be expected to significantly limit bat population sizes.

Across the entire five-county region, induced growth is predicted to result in a loss of approximately 2,602 acres (1.26 percent) of existing forest by 2041. This relatively moderate loss of existing forest is due to the abundance of farmland in the region and the ongoing decline of agriculture, with abandoned farmland rather than forested land anticipated to absorb a large proportion of future development and the succession of other abandoned farmland adding forest to the landscape. To the extent recent historic trends continue, 50,567 acres of land currently classified as a grassland cover type in the five-county region could become classified as forested by 2041. This succession of former farmland to forest could offset some of the forest losses from induced growth, resulting in a lower net loss of forest by 2041. Projected losses of grassland habitats due to induced growth are also proportionately low, resulting in a loss of approximately 3,700 acres of grassland habitat in the five-county region by 2041 (less than one half of one percent of existing grassland habitat in 2021). Most of the loss is expected to occur in Madison County, followed by Oswego County, Onondaga County, Cayuga County, and Cortland County.

Because these projected losses of forestland and grassland habitats due to induced growth are contingent on the specific locations, extent, and nature of future development, it is not feasible to project specific future losses of forest- and grassland-dependent wildlife, including protected bats or grassland birds. Although the projected habitat losses described above may serve as proximate indications of future species losses, the projected net habitat losses are relatively low, and may be offset by land cover succession rates. Therefore, the Preferred Action Alternative has low potential to result in significant growth inducing effects on biological resources.

Summary of Effects

Overall, under the Preferred Action Alternative, construction of the Proposed Project and Connected Actions would result in significant adverse effects on biological resources. This would include significant adverse effects on Federal and State listed threatened and endangered species, or species proposed for listing, including the Indiana bat, northern long-eared bat, tricolored bat, northern harrier, and short-eared owl. Post-construction operation of the Proposed Project and Connected Actions would not result in significant adverse effects on biological resources. The Preferred Action Alternative has a low potential to result in significant growth inducing effects on biological resources in the five-county region over time.

3.4.5 BMPs and Mitigation Measures

3.4.5.1 BMPs

Micron would implement the following BMPs to help minimize the effects of the Proposed Project on biological resources, as described in Section 3.4 and summarized in Table 3.4-12.

Table 3.4-12 Best Management Practices

Activity	BMP Description
Retention of On-site Roosting and Foraging Habitat	The Micron Campus site plan has been designed to economize space and reduce the manufacturing facility LOD to the maximum extent practicable. Based on the site plan, construction of the campus would leave approximately 380 acres on the site undisturbed, including approximately 272 nearly contiguous acres of forested roosting habitat, approximately 84 acres of former cropland (mostly successional old field and

	shrubland), and approximately 11 acres of non-forested wetlands. These avoidance measures would reduce the scale of habitat loss from the Proposed Project and preserve some suitable on-site roosting and foraging habitat for Indiana bats, northern long-eared bats, and tricolored bats, which would also be connected to adjacent habitat areas off-site. The approximately 272 acres of forested area within the campus but outside of the manufacturing facility LOD would be permanently protected for bats via conservation easement. These acreages are also based on analyses provided in the BA (Appendix G-4) and developed in consultation with USFWS and NYSDEC. Mitigation measures for protected bats are presented in Table 3.4-13.
Landscape Management	Micron would implement the LMP at the Micron Campus and the Childcare Site using native plant species to the maximum extent practicable to help offset losses to suitable habitat. Micron also would plant native vegetated buffers along the perimeter of the campus where feasible, particularly in areas near sensitive habitats (including wetlands), to develop a transition zone between developed and undeveloped habitats and offer a degree of protection to the undeveloped habitats from the effects of fragmentation and invasive species.
Noise Reduction	Operation of the Micron Campus and Childcare Site would employ noise mitigation measures (e.g., sound attenuators, acoustical louvers, sound walls) to reduce noises generated by outdoor equipment such as rooftop air handlers and cooling fans. Operation of the Rail Spur conveyor would include equipment upgrades to reduce noise, including upgraded pulleys and return idlers, and 1-inch rubber flashing on the hoppers. These measures would reduce the potential for disturbance of bats in adjacent areas of habitat.
Lighting Reduction	All nighttime exterior lighting at the Micron Campus would be designed to minimize light spillage or trespass beyond intended areas of illumination. Micron would design campus lighting fixtures where feasible to achieve the highest LEED standards for minimizing backlight, uplight, and glare, with a focus on achieving near-zero uplighting, including by maximizing the use of warm white LEDs and cut-off optics to reduce uplight and trespass. Micron also would use alternate lights with quality optic controls on shorter poles where feasible for added functionality to control lighting effects. These measures would greatly reduce the potential for lighting disturbance of bats in adjacent areas.
Water Quality Protection	Micron would avoid use of dyes, pesticides, and fertilizers near any wetlands and surface waters over which bats may forage (e.g., Youngs Creek complex east of Fab 4).
Biological Monitoring	Micron would employ a biological monitor to oversee implementation of BMPs and other measures intended to minimize effects on biological resources.

3.4.5.2 Mitigation Measures

Mitigation would be required to reduce unavoidable significant adverse effects of the Proposed Project on Federal and State listed bat species and State listed grassland birds. The specifics of these mitigation measures are included in the BA (Appendix G-4) and the grassland bird incidental take permit application. As part of the ESA Section 7 consultation process, USFWS will be responsible for issuing a BO concerning the incidental take of Federal listed species in connection with the Proposed Project. The BO (Appendix G-4) will include reasonable and prudent measures necessary or appropriate to minimize the impact of the incidental take of such species. In addition to the BO to be issued by USFWS, NYSDEC will be responsible for issuing an ECL Article 11 Endangered and Threatened Animal Species Incidental Take Permit for the Proposed Project. The sections below discuss preliminary measures that Micron has proposed to mitigate the effects of the Proposed Project on listed bat and grassland bird species.

Bats

Micron has proposed several mitigation measures to compensate for unavoidable effects from the Proposed Project on the Indiana bat, northern long-eared bat, and tricolored bat, including the purchase and permanent protection of twice the amount of roosting habitat that would be lost due to Proposed Project and Connected Action construction, and funding for research and monitoring efforts to benefit science-based bat species conservation and management programs in New York State. Micron will be responsible for developing a mitigation plan in coordination with USFWS and NYSDEC that will detail all final agreed-to mitigation measures that CPO and USFWS determine to be necessary to complete the Section 7 consultation process, which Micron would be required to implement prior to the start of construction under the terms of the BO issued by USFWS. Micron also would be required to conduct acoustic bat monitoring on the Micron Campus during each year of the construction period and for the first two years after full build-out in accordance with USFWS survey guidelines and approved study plans. Table 3.4-13 lists the currently proposed bat species mitigation measures.

Table 3.4-13 Mitigation Measures for Protected Bat Species

Activity	Mitigation Measure Description
Offsite Habitat Protection	Micron would offset lost roosting habitat by purchasing and permanently protecting (via conservative easement) two acres of suitable roosting habitat for every one acre of forest lost to construct the Micron Campus. This 2:1 ratio amounts to a minimum of approximately 1,182 acres of protected roosting habitat that would be protected via conservation easement on the Micron Campus following full buildout, resulting in a total of at least 1,454 permanently protected acres of roosting habitat for Indiana, northern long-eared, and tricolored bats (see Appendix G-4). In exceedance of the 1,182 offsite acres needed to achieve a ratio of two protected acres for every one acre lost, 1,367 total acres of forested roosting habitat across 9 parcels has been reviewed by USFWS and NYSDEC and acquired for permanent protection via conservation easement by the Wetland Trust Inc. (Attachment 4 of Appendix G-4). This includes a nearby hibernaculum and its approximately 300 surrounding acres of forested fall swarming and suitable roosting habitat. A management plan will be developed for each site, and trespassing, ATV use, timber harvesting, and other such impactful uses would be prohibited. In consultation with USFWS and NYSDEC, sites with or near previous records of these species have been selected for protection, with priority given to sites that have or are within 2.5 miles of a known roost tree.
Artificial Roost Sites	To further offset the loss of roosting habitat on the Micron Campus, Micron would fund the purchase and installation of 10 roost boxes of appropriate styles and designs selected by USFWS and NYSDEC for Indiana, northern long-eared, and tricolored bats in undisturbed portions of the Micron Campus. The boxes would be installed prior to the completion of Fab 1. Occupancy of these roost boxes would be monitored once per maternity season for the first five years following their installation along with

	annual cleaning and maintenance procedures that follow manufacturer recommendations and best management practices.
Research and Monitoring	Micron would sponsor research and monitoring projects recommended by and designed in consultation with USFWS and NYSDEC to help improve the science-based management and conservation of Indiana, northern long-eared, and tricolored bats in New York. They include studies of the movement, summer ranges, and distribution of bats on the Syracuse-area landscape, the sensitivity of bats to noise and light, and the response of bats to the Micron Campus' development over time. A request for proposals (RFP) for each project would be disseminated to universities, conservation organizations, and environmental consultants, and advertised online. All details regarding study design, site selection, timing, and other methods to be described in the RFPs would be determined in coordination with USFWS and NYSDEC. Additional details on conceptual projects are discussed in Appendix G-4.
Micron-Funded Grant Program	To further support the conservation and management of the Indiana bat, northern long-eared bat, and tricolored bat, and to help compensate for future cumulative impacts that could result from Micron-induced economic growth in the region, Micron would establish a fund from which grants would be awarded for projects that benefit these species. Research, education/outreach, surveys, and habitat protection and enhancement projects would be eligible, with those in New York State being most competitive for funding. Up to $100,000 in grants would be made available and disbursed each year for the first 10 years of the Micron Campus's construction. Any unused funds in a given year would be carried over to the following year until a total of $1,000,000 has been awarded over the life of the program. Micron would partner with a non-governmental conservation organization or university to administer the program, and input from USFWS and NYSDEC would be sought during yearly review of received proposals and the selection of awardees.
Hibernaculum Gating	Micron would contribute up to $50,000 towards the fabrication and installation of gates to prevent people from entering and disturbing the Glen Park bat hibernaculum or another hibernaculum of USFWS' and NYSDEC's choosing.
Acoustic Bat Monitoring	Micron would conduct acoustic bat monitoring on the Micron Campus during each year of its construction and for the first two years after full build-out in accordance with USFWS survey guidelines and approved study plans.

Note: The protected bat roosting habitat acreages are based on the analyses presented in the BA (Appendix G-4). The BA defines ecological communities using NLCD data, whereas Section 3.4 defines ecological communities in the context of Ecological Communities of New York State (Edinger et al. 2014) and Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979) classifications. NLCD data was used to determine BMPs for biological resources in consultation with USFWS and NYSDEC.

Birds

To achieve a net conservation benefit for northern harriers and short-eared owls lost due to Proposed Project construction, NYSDEC would require that either three acres of new or improved habitat be protected for every acre lost, or one acre of new or improved habitat be protected for every one acre lost along with a commitment to manage that habitat in a grassland state for 15 years. Micron and The Wetland Trust (TWT), a 501(c)(3) nonprofit organization, have proposed to purchase 650 acres of sufficiently high-quality habitat for permanent protection and to restore and manage the habitat as grassland for 15 years (in 3-year cycles) to achieve the required net conservation benefit. These 650 acres would be located across seven properties, with all restored fields to exceed at least 25 contiguous acres each. These properties are located in Oswego, Chenango, Yates, Cortland, Broome, Tompkins, and Tioga Counties at distances of approximately 10-60 miles from the Micron Campus site. A final grassland protection plan would be developed in coordination with NYSDEC to achieve a net conservation benefit for listed grassland birds, including northern harriers and short-eared owls, based on technologically, economically, and biologically practicable measures, and would be subject to NYSDEC review and approval.

3.5 HISTORIC AND CULTURAL RESOURCES

3.5.1 Legal and Regulatory Setting

3.5.1.1 Federal

Section 106 of the NHPA (54 U.S.C. § 306108; 36 C.F.R. Part 800) requires federal agencies to take into account the effects of its undertakings (including the issuance of Federal financial assistance) on properties listed in or eligible for listing in the National Register of Historic Places (NRHP) and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. The Section 106 regulations provide the framework for CPO to fulfill its NHPA obligations for projects it funds. The Section 106 process includes four steps: (1) initiating the process; (2) identifying historic properties; (3) assessing adverse effects on historic properties; and (4) resolving adverse effects by developing measures to avoid, minimize, or mitigate such effects.

CPO is responsible for identifying whether projects it funds could potentially affect historic properties, including historic period and Indigenous precontact period resources, archaeological sites, districts, buildings, structures, and objects, and properties of traditional religious and cultural importance to Indigenous Nations or other groups. Historic properties are eligible for the New York State Register of Historic Places (SR) and the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the NRHP eligibility criteria (36 C.F.R. § 60.4). In general, a property less than 50 years old is not eligible for inclusion in the SR or the NRHP unless it is of exceptional importance.

CPO is serving as the lead Federal agency for Section 106 consultation for the Proposed Project and Connected Actions. NYSHPO, ACHP, OCIDA, Micron, National Grid, OCWA, OCDWEP, USACE,[50] and NYSDEC are participating in the Section 106 process. In addition, CPO is engaging in government-to-government consultation with the Oneida Indian Nation, the Oneida Nation of Wisconsin, the Onondaga Nation, the Cayuga Nation, the Seneca-Cayuga Nation, the Tuscarora Nation, and the Wyandotte Nation for the Proposed Project and Connected Actions, in accordance with 36 C.F.R. § 800.2(c)(2)(ii). Micron, as a non-Federal party, is helping CPO fulfill its Section 106 obligations by preparing necessary information and analyses as authorized by 36 C.F.R. § 800.2(a)(3).

CPO is in the process of preparing a Programmatic Agreement (PA) in coordination with the Onondaga Nation, NYSHPO, and other Section 106 consulting parties for the Proposed Project and Connected Actions.[51] Per 36 C.F.R. § 800.14(b), agencies may implement PAs for complex undertakings or when the agency cannot fully determine how a particular undertaking may affect historic properties prior to approval of the project. The PA provides a framework for identifying historic properties and assessing effects through a phased survey approach. CPO, in coordination with the Onondaga Nation, NYSHPO, and other consulting parties, have determined that

[50] USACE is a participant in the Section 106 process for the Proposed Project and Connected Actions, and is the lead agency for the Section 106 process for the proposed wetland and stream mitigation sites described in Section 3.3 (Water Resources).

[51] The PA includes the proposed wetland and stream mitigation sites described in section 3.3. USACE is the lead agency for the Section 106 process for the proposed wetland and stream mitigation sites.

Indigenous Nation monitoring is warranted during archaeological surveys conducted prior to construction and during ground-disturbing construction activities. The PA provides a series of protocols and procedures for ensuring that CPO's Section 106 commitments are fulfilled while archaeological investigations are ongoing and during ground-disturbing construction activities. The PA allows for portions of construction to commence after the Area of Potential Effects (APE) has been thoroughly investigated, Indigenous Nation monitors are in place, and a determination of no adverse effect or no historic properties affected has been made after the findings have been reviewed by CPO in coordination with Section 106 consulting parties. In the event that historic properties are adversely affected, the PA provides a series of protocols and procedures to mitigate adverse effects.

3.5.1.2 State

Section 14.09 of the New York State Historic Preservation Act (NYSHPA), codified in the New York State Parks, Recreation and Historic Preservation Law, was established as a counterpart to the NHPA and requires State agencies to consider the effects of their actions on properties listed in or determined to be eligible for listing in the SR, including by consulting with NYSHPO regarding actions that may cause any beneficial or adverse change in the character of an SR-listed or eligible property. However, the Section 14.09 procedures do not apply to projects that are being reviewed under Section 106 of the NHPA (9 NYCRR § 428.2(a)).

3.5.2 Affected Environment

The affected environment for historic and cultural resources includes the APEs for the Proposed Project and Connected Actions. The APE is the geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties. Both direct and indirect (where relevant) APEs were defined for these undertakings. This section describes the affected environment for historic and cultural resources and also describes the architectural surveys and archaeological investigations that were conducted in the APEs and the historic properties identified.

3.5.2.1 Area of Potential Effects

To identify historic properties, CPO, in consultation with NYSHPO, and taking into consideration the views of other consulting parties, developed the direct APEs for the Proposed Project and Connected Actions, which corresponds to the project boundaries of the Proposed Project and Connected Actions and the areas potentially subject to direct ground disturbance and construction activity. The purpose of the direct APEs is to identify areas where historic properties may be directly affected by ground-disturbance and construction activities.

In addition, CPO developed indirect APEs for the Proposed Project and for certain Connected Actions where relevant.[52] The indirect APE for the Proposed Project includes an area extending approximately one-quarter mile outward from the proposed Micron Campus, Rail Spur Site, and Childcare Site boundaries. Indirect APEs also were developed around the OCWA

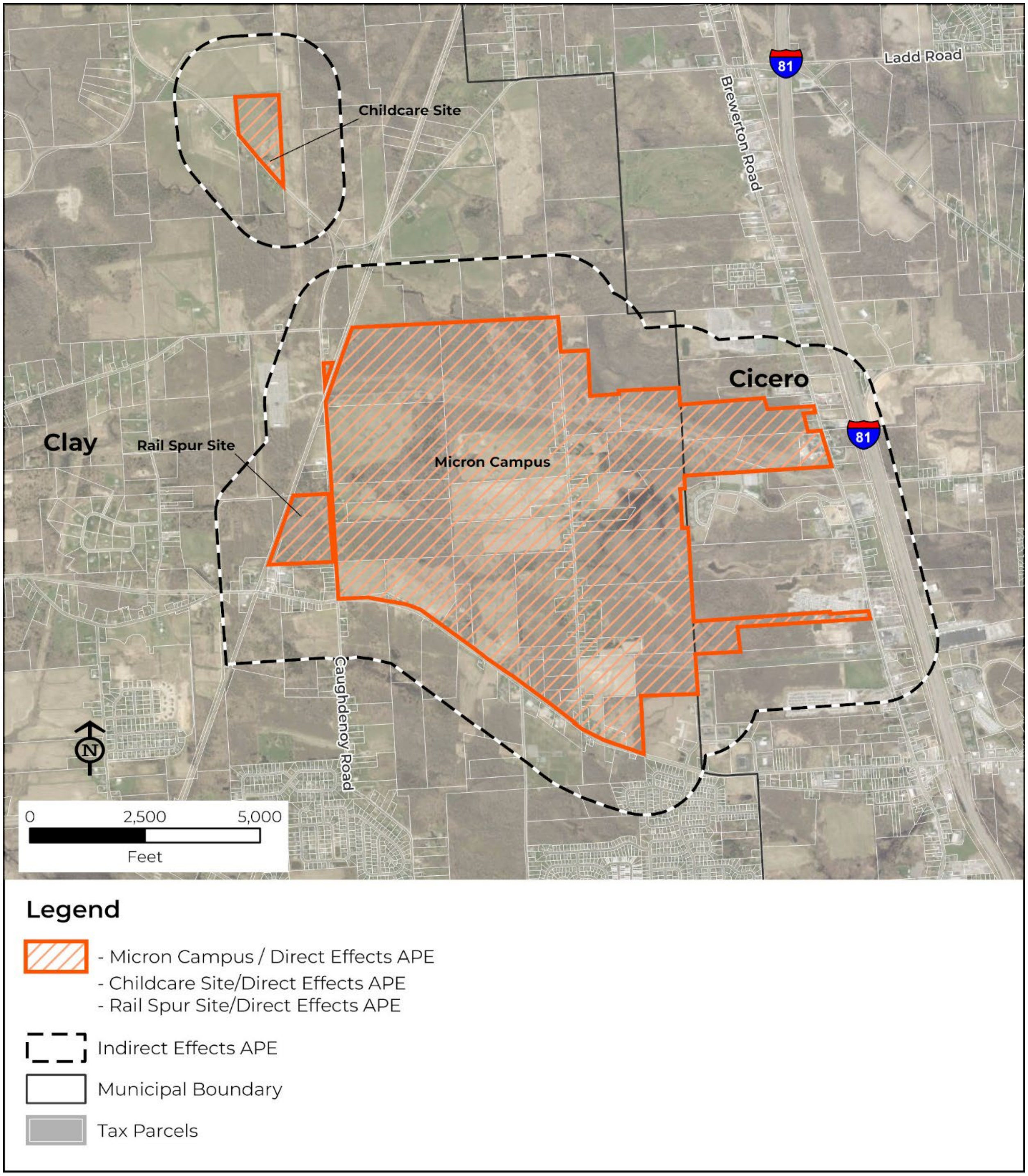
[52] The Telecommunications Connected Action APE has not been established. The Section 106 investigation of the Telecommunications Connected Action will be subject to the protocols and procedures of the PA once it has been signed and executed.

LOWTP and Terminal Campus and the OCDWEP Oak Orchard site. The purpose of the indirect APEs is to identify areas with proposed permanent above-ground features that could potentially result in indirect effects (e.g., visual effects) on historic properties in the vicinity of those above-ground features.[53]

Figure 3.5-1 through Figure 3.5-4 on the following pages show the direct and indirect APEs for the Proposed Project, LOWTP, Terminal Campus, and Oak Orchard site. For figures of all APEs, see Appendix H-1.

[53] Above-ground equipment improvements at GRS 147 are not anticipated to be more visible than existing equipment of comparable appearance and height; therefore, an indirect APE was not developed for the natural gas improvements.

Figure 3.5-1 Proposed Project Direct and Indirect APEs

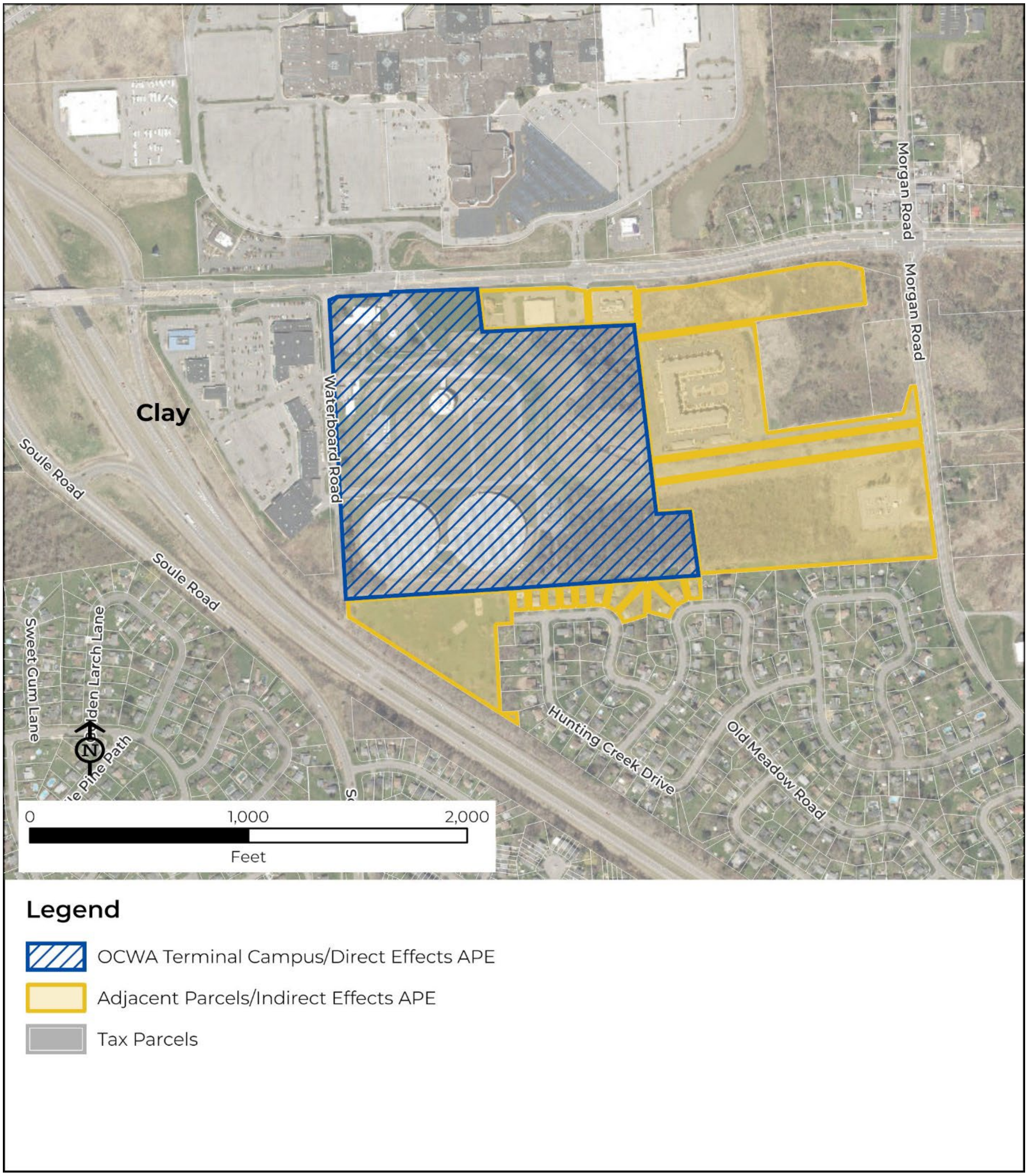


Source: World Imagery (Esri, 2025c): Esri, Maxar, New York State.

Figure 3.5-2 Direct and Indirect APE (OCWA LOWTP)

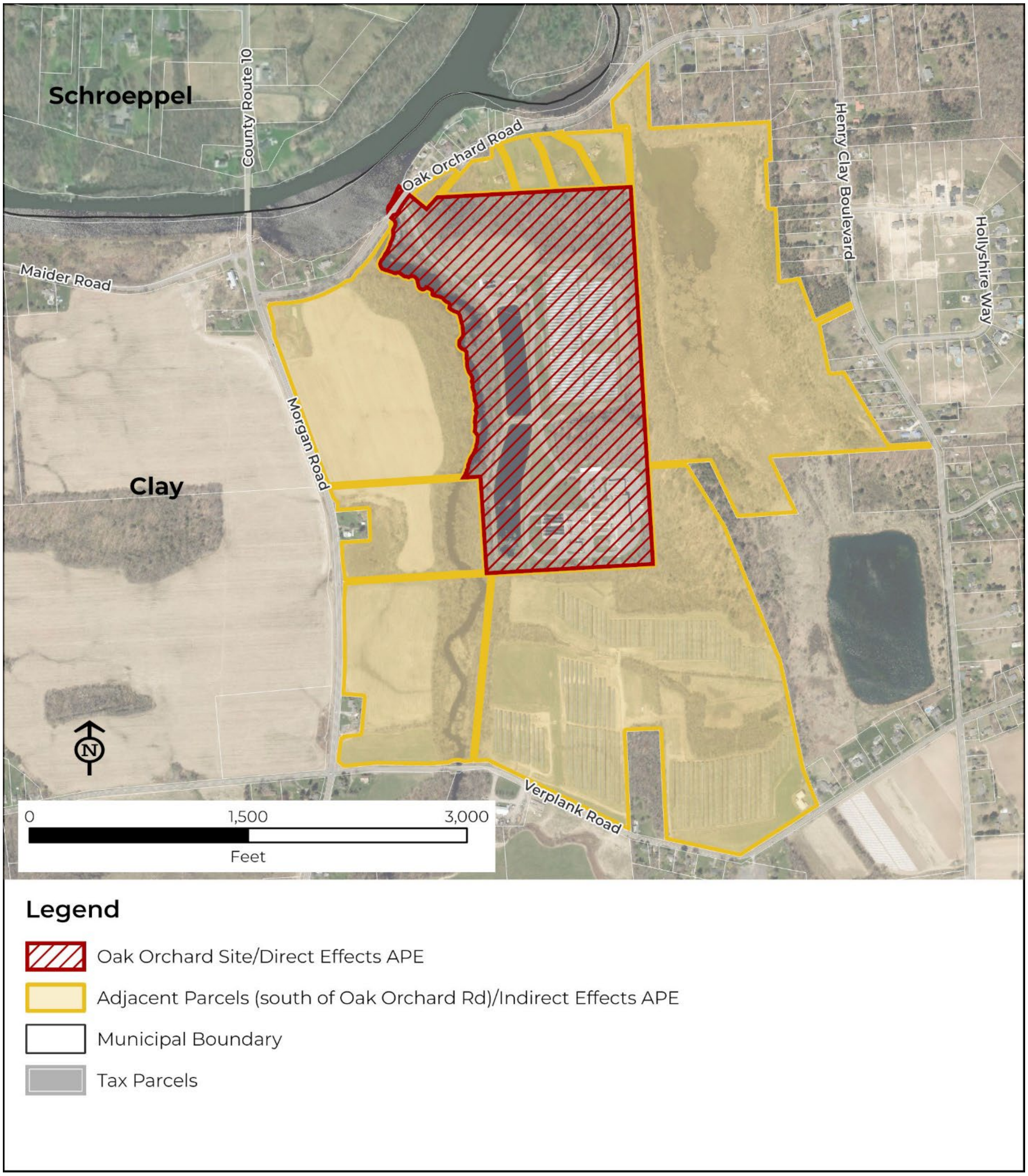
Source: World Imagery (Esri, 2025c): Esri, Maxar, New York State.

Figure 3.5-3 Direct and Indirect APE (OCWA Terminal Campus)



Source: World Imagery (Esri, 2025c): Esri, Maxar, New York State.

Figure 3.5-4 Direct and Indirect APE (IWWTP)



Source: World Imagery (Esri, 2025c): Esri, Maxar, New York State.

3.5.2.2 Background Research and Field Investigations of the APE

Historic above-ground resources within the direct and indirect APEs were identified based on background research, which included a review of NYSHPO's online Cultural Resource Information System (CRIS) database, and architectural field surveys conducted for the Proposed Project and Connected Actions in Spring and Summer 2023 by architectural historians who meet the Secretary of the Interior's Professional Qualification Standards for Architectural History (36 C.F.R. Part 61). NYSHPO has reviewed and provided comments and concurrence on these architectural surveys.

To identify archaeological resources, CPO, in consultation with NYSHPO, and taking into consideration the views of other consulting parties, developed the direct APEs around the Proposed Project, Connected Actions which includes the areas that would be affected by ground disturbing activities. Professional archaeologists who meet the Secretary of the Interior's Professional Qualification Standards for Archaeology (36 C.F.R. Part 61) prepared Phase 1A Archaeological Documentary Studies of the APEs to identify known archaeological resources and provide an assessment of archaeological sensitivity for the APEs. CPO reviewed and approved six Phase 1A Archaeological Documentary Studies of the Proposed Project and Connected Actions (Electric Service, Natural Gas Line, Water Supply Improvements, Industrial Wastewater Treatment Plant, Industrial Wastewater Conveyance).

These Phase 1A Studies concluded that undisturbed portions of the APEs have moderate to high sensitivity for precontact period archaeological resources and certain limited portions of the APEs have low, low-to-moderate, or moderate sensitivity for historic period archaeological resources. The Phase 1A Studies recommended further archaeological analysis in the form of Phase 1B Archaeological Investigations for areas of the APEs identified as archaeologically sensitive and that would be disturbed by Proposed Project, Connected Actions.

Professional archaeologists have prepared Phase 1A archaeological investigations for the Proposed Project and Connected Actions identifying areas of archaeological sensitivity within the APEs. Archaeologists subsequently prepared Phase 1B work plans for the Proposed Project and each Connected Action. Both the Phase 1A archaeological investigations and Phase 1B work plans were shared by CPO with NYSHPO, Onondaga Nation, and other consulting parties for review and comment. Phase 1B archaeological testing in the APEs for the Micron Campus (Phase 1A construction area), Rail Spur Site, Childcare Site, Industrial Wastewater Treatment Plant, Industrial Wastewater Conveyance, Natural Gas Line, and Electric Service has been completed. Phase 1B archaeological testing is ongoing for the Water Supply Connected Action and Micron Campus Phase 1B, 2A, and 2B construction areas).

Two archaeological sites, a precontact period site and historic period site, were identified in the Micron Campus APE during the Phase 1B archaeological investigation and were recommended for Phase 2 site evaluations. The Phase 2 site evaluation for the precontact period site has been completed and the Phase 2 site evaluation work plan for the historic period site is under review by CPO. A Phase 2 site evaluation has also been completed for the Electric Service Connected Action.

As indicated above, archaeological testing for several APEs is either awaiting approval or ongoing and may continue to be conducted during the Federal and State agency reviews of the

Proposed Project and Connected Actions. CPO, in coordination with the Onondaga Nation, NYSHPO, and other consulting parties have determined that Indigenous Nation monitoring is warranted during archaeological investigations conducted prior to construction and during ground-disturbing construction activities. Indigenous Nation monitors from the Onondaga Nation were utilized during archaeological field surveys and will continue to be present for any future archaeological investigations and during ground-disturbing construction activities pending approval of the PA.

In the event that a future or ongoing Phase 1B Archaeological Investigation confirms the presence of archaeological resources requiring further archaeological analysis, a Phase 2 Archaeological Survey and Evaluation would be conducted. If any identified archaeological resources are determined to be SR- or NRHP-eligible, and those sites cannot be avoided, Phase 3 Data Recovery for the identified sites and resources would be completed in consultation with NYSHPO, the Onondaga Nation, and other consulting parties. The PA also allows for further archaeological investigations in the event of inadvertent discoveries during ground-disturbing construction activities. In such cases, all construction in the area would be stopped and the protocols and procedures for inadvertent discoveries that are outlined in the PA would commence.

3.5.2.3 Identification of Historic Properties

Proposed Project (Micron Campus, Rail Spur Site, Childcare Site)

CPO identified one historic property within the indirect APE of the Micron Campus, a two-story residence with a detached garage built circa 1875 located on the east side of Brewerton Road in the Town of Cicero, a little over a half mile from the easternmost buildings proposed on the Micron Campus and a little over one-quarter mile from the proposed access road for the Micron Campus on Brewerton Road (NYSHPO USN 06702.000228).

Phase 1B archaeological testing for the Proposed Project identified one precontact period archaeological site and one historic period archaeological site within the Micron Campus construction Phase 1A direct APE that were recommended for further Phase 2 testing. A draft report summarizing the Phase 1B and Phase 2 investigations of the Micron Campus Construction Phase 1A limits of disturbance and the Micron Campus Precontact Site 1 is currently being prepared by archaeologists for review by CPO. A Phase 2 Work Plan for the W. Anderson Historic Site is under review by CPO. CPO will review the Phase 2 Work Plans and reports, make determinations of eligibility, and distribute the reports to consulting parties as they become available.

Phase 1B archaeological testing identified one historic period archaeological site, the Weller Canning/Fremont Kraut Company Site (Micron RS-01 Historic Site, USN 06703.000475) within the direct APE of the Rail Spur Site. Due to lack of integrity and the poor condition of the site, CPO determined that the site is not eligible for listing in the SR or the NRHP. NYSHPO concurred with CPO’s finding for the Rail Spur Site. Phase 1B archaeological testing for the Childcare Site did not result in the identification of any historic properties, and the NYSHPO concurred with the survey recommendation that no additional archaeological investigations are necessary for this site.

Connected Actions

With the exception of the Telecommunications Connected Action, above-ground architectural surveys were conducted for each of the Connected Action APEs. The architectural survey of the proposed Water Supply Connected Action identified one historic property within the Direct APE, the New York State Barge Canal Historic District, a previously recorded historic property that is listed in the SR and the NRHP and is a National Historic Landmark. CPO also identified one historic property within the indirect APE of the Water Supply Connected Action, a two-story Gothic Revival-style house on NYS Route 31 in the Town of Clay built circa 1860 and incorporated as part of a commercial parcel that contains a retail store (SHPO USN 06703.000411). The house is located approximately 150 feet northeast of where a proposed small flow control structure would be installed on the Terminal Campus and approximately 300 feet north of the proposed construction of a pumping station to be built east of the existing Farrell Pumping Station on the Terminal Campus. Additional proposed improvements at the Terminal Campus, including installation of up to two new 15 MG tanks and expansion of its existing substation, would all occur at greater distances from the house.

Based on the results of Phase 1B archaeological testing, CPO did not identify any additional historic properties within the direct APEs of the IWWTP, Industrial Wastewater Conveyance, and Natural Gas Connected Actions. The Phase 1B reports for the IWWTP, Industrial Wastewater Conveyance and Natural Gas Connected Actions are currently under review by CPO and will be distributed to consulting parties pending CPO's determinations of eligibility and finding of effects. Phase 1B testing is ongoing for the Water Supply Connected Action. CPO will review the Phase 1B and any subsequent reports, make determinations of eligibility, and distribute the reports to consulting parties as they become available.

Phase 1B and Phase 2 archaeological testing was completed for the direct APE of the Electric Service Connected Action. CPO identified two historic properties, the J. Young historic archaeological site (USN 06703.000428) and the J. Somers historic archaeological site (USN 06703.000429). CPO's determination of eligibility for the two historic properties was provided to consulting parties for review and comment. NYSHPO concurred with CPO's determination that the two sites are eligible for listing in the NRHP.

3.5.3 Environmental Consequences

Proposed Project (Micron Campus, Rail Spur Site, Childcare Site)

CPO, in consultation with NYSHPO, the Onondaga Nation, and other consulting parties has determined that effects on historic properties cannot be fully determined prior to CPO's issuance of a Federal funding award to Micron. The proposed PA will allow for archaeological investigations to continue subsequent to the issuance of Federal funding and allow CPO to fulfill their Section 106 commitments.

As mentioned in the Affected Environment, CPO identified one historic property within the indirect APE of the Micron Campus, a two-story residence with a detached garage built circa 1875. In a December 13, 2024, letter to CPO, NYSHPO provided an opinion that the Proposed Project would have no effect on this historic property (OPRHP, 2024). On June 18, 2025, CPO provided a finding of no adverse effect (36 C.F.R. § 800.5(b)) on the historic property to consulting parties. In a letter dated June 23, 2025, NYSHPO concurred with CPO's finding of no adverse effect to historic properties.

As noted in the Affected Environment section, no historic properties were identified within the APEs of the Rail Spur and Childcare Sites. On August 29, 2025, CPO provided a finding of no historic properties affected (36 C.F.R. § 800.4(d)(1)) for the Rail Spur Site for review and comment with consulting parties. On September 10, 2025, CPO provided a finding of no historic properties affected (36 C.F.R. § 800.4(d)(1)) for the Childcare Site for review and comment with consulting parties. NYSHPO concurred with CPO's finding of no historic properties affected on September 5, 2025, for the Rail Spur Site and September 15, 2025, for the Childcare Site. Consultation for the entire Proposed Project APE is ongoing. Phase 2 testing of one precontact site within the Construction Phase 1A portion of the direct APE of the Micron Campus is completed. Phase 2 testing of a historical period site within the Construction Phase 1A portion of the direct APE of the Micron Campus is currently awaiting approval. After testing has been completed for the historic period site, CPO will evaluate the two sites against the NRHP criteria and provide a finding of effect to consulting parties for review and comment. Archaeological testing on Micron Campus Construction Phases 1B, 2A, and 2B will be completed in the future pursuant to the terms of the PA.

Connected Actions

In a May 16, 2025, letter to CPO, NYSHPO concurred with CPO's determinations of eligibility for one newly identified historic property in the Water Supply Connected Action, a circa 1860 Gothic-Revival two-story house within the indirect APE of the OCWA Terminal Campus. As archaeological investigations are ongoing, a determination of effect cannot yet be made for the Water Supply Connected Action. Consultation for this Connected Action is ongoing and CPO will provide a determination of effect to consulting parties for review and comment when it is available.

On June 20, 2025, CPO proposed a finding of no adverse effect (36 C.F.R. § 800.5(b)) to the two historic properties that were identified in the Electric Service Connected Action direct APE, the J. Young (USN 06703.000428) and the J. Somers (USN 06703.000429) historic properties. In a letter to CPO dated June 23, 2025, NYSHPO concurred with CPO's finding of no adverse effect. Consultation for the remaining Connected Actions is ongoing and CPO will provide findings of effect as the archaeological investigations are completed and information becomes available.

Growth Inducing Effects

Induced growth throughout the five-county region has the potential to affect historic properties. Although it cannot be predicted exactly when, or to what degree, induced growth would affect historic properties; any future development requiring discretionary approvals that would be undertakings under the NHPA or NYSHPA would be required to comply with Section 106 of the NHPA or Section 14.09 of the NYSHPA.

Summary of Effects

Table 3.5-1 below summarizes the effects to historic properties identified within the direct and indirect APEs of the Proposed Project and Connected Actions.

Table 3.5-1 Summary of Effects to Historic Properties

Project Component	Historic Properties Identified	Location	Listed or Eligible for inclusion in the NRHP?	Determination of Effects
Proposed Project				
Micron Campus	Two-story residence with a detached garage c. 1875	Indirect APE	Eligible for inclusion	No adverse effect
	Micron Campus Precontact Site 1 (potential)	Direct APE	TBD	Consultation is ongoing
	W. Anderson Historic Site (potential)	Direct APE	TBD	Consultation is ongoing
Rail Spur Site	Weller Canning/Fremont Kraut Company Site (Micron RS-01 Historic Site, USN 06703.000475)	Direct APE	Not eligible for inclusion	No Historic Properties affected
Childcare Site	None identified	n/a	n/a	No Historic Properties affected
Connected Actions				
Water Supply	New York State Barge Canal Historic District	Direct APE	Listed in the NRHP	Consultation is ongoing
	Two-story Gothic Revival-style house c. 1860	Indirect APE	Eligible for inclusion	Consultation is ongoing
Industrial Wastewater Conveyance (IWWC)	None identified	TBD	TBD	Consultation is ongoing
Industrial Wastewater Treatment Plant (IWWTP)	None identified	n/a	n/a	Consultation is ongoing
Natural Gas	None identified	TBD	TBD	Consultation is ongoing
Electricity	J. Young historic archaeological site (USN 06703.000428)	Direct APE	Eligible for inclusion	No adverse effect

	J. Somers historic archaeological site (USN 06703.000429)	Direct APE	Eligible for inclusion	No adverse effect

3.5.4 Status of Section 106 Consultation

CPO initiated Section 106 consultation with NYSHPO, the New York State Department of Environmental Conservation (NYSDEC), Onondaga Nation, and Oneida Indian Nation on November 18, 2024, for potential effects of the Proposed Project and Connected Actions on historic properties. On March 10, 2025, CPO initiated Section 106 consultation with additional consulting parties including Oneida Nation of Wisconsin, Seneca-Cayuga Nation, Tuscarora Nation, Wyandotte Nation, OCIDA, and USACE.

As of the publication of this Final EIS, compliance with Section 106 of the NHPA for the Proposed Project and Connected Actions is ongoing and will be completed per the stipulations outlined in the PA. Archaeological investigation and testing of portions of the Proposed Project and Connected Actions, and consultation with NYSHPO, Onondaga Nation, and other consulting parties, has not yet been completed for all areas of archaeological sensitivity identified within the APEs. A summary of Section 106 consultation conducted to date is included within Appendix H-2.

CPO, in coordination with the Section 106 consulting parties, is currently in the process of drafting the PA. Due to the size and complexity of the undertaking, the scale of the APE, and existing conditions within the geographic setting, CPO, in consultation with NYSHPO, Onondaga Nation, and other consulting parties is implementing a phased identification and evaluation process for historic properties within the boundaries of the Proposed Project and Connected Actions.

To ensure that CPO's responsibilities under the NHPA and its implementing regulations are met, Micron will not be authorized to begin construction of the Proposed Project or commence use of staging, storage, or temporary work areas or new or to-be-improved access roads until Section 106 obligations have been met as defined under the PA, even if Micron receives funding and all other permits are obtained.

In accordance with Section 304 of the NHPA, sensitive information concerning the location, character, or ownership of cultural resources will be treated as confidential and may be withheld from public disclosure (54 U.S.C. § 307103).

3.5.5 Mitigation Measures

The PA describes the mitigation measures that CPO, in coordination with all other signatories of the PA, would implement to avoid or minimize adverse effects to historic properties and to ensure that any potential historic properties discovered during archaeological investigations and ground-disturbing construction activities are thoroughly investigated. The mitigation measures proposed for discoveries during archaeological investigations and construction are listed below. Table 3.5-2 below summarizes Section 106 mitigation measures.

Table 3.5-2 Section 106 Mitigation Measures

Activity	Mitigation Measure Description
Indigenous Nation Monitoring	Indigenous Nation monitoring has been utilized for all phased archaeological investigations and will be utilized for any future archaeological investigations and ground-disturbing construction activities. Indigenous Nation monitors will be provided by the Onondaga Nation, and other consulting Indigenous Nations should they choose to participate.
Discoveries during Archaeological Investigation	In the event that artifacts or other materials of historic, cultural, or spiritual importance to an Indigenous Nation consulting party, as determined by such Indigenous Nation consulting party, are encountered in the course of archaeological investigations in the APEs for the undertakings, the archaeologists shall immediately notify CPO or USACE, as appropriate, of the discovery. In the event that evidence of burials, human remains, or potential human remains are discovered in the APE of an undertaking during archaeological investigations, the project sponsor shall immediately suspend all work in the immediate vicinity, protect the artifacts or remains from further disturbance, and immediately contact CPO or USACE, as appropriate, as well as NYSHPO, the Onondaga Nation, and other consulting Nations, as appropriate. All graves, funerary objects, and soils surrounding graves will be protected and treated with the utmost dignity and respect, and CPO will work with the consulting Indigenous Nations to repatriate any human remains, funerary artifacts, or other objects of cultural patrimony that may be encountered during archaeological testing or later construction.
Discoveries during Construction	In the event that artifacts or other materials of historic, cultural, or spiritual importance to a consulting Indigenous Nation, evidence of burials, human remains, or potential human remains are discovered in the APE of an undertaking after CPO or USACE has approved the undertaking and construction has commenced, the project sponsor shall immediately suspend all work in the immediate vicinity, protect the artifacts or human remains from further disturbance, and immediately contact CPO or USACE, as appropriate, as well as NYSHPO, the Onondaga Nation, and other consulting Indigenous Nations. In the event of any discovery described above, the project sponsor will establish a protective buffer around the discovery. CPO or USACE, as appropriate, shall consult with NYSHPO, the Onondaga Nation, other consulting Indigenous Nations, and the project sponsor to determine an agreed-upon course of action in response to the discovery, including additional archaeological investigations to determine whether the material is an isolated find or is part of a larger archaeological site and any potential need to expand the protective buffer to adequately investigate and protect the area from ongoing construction. If CPO or USACE, as appropriate, finds that an undertaking would result in adverse effects on previously unidentified historic properties, CPO or USACE shall consult further with NYSHPO, the Onondaga Nation, and other relevant consulting parties to resolve the adverse effects in accordance with 36 C.F.R. § 800.6.

3.6 AIR QUALITY

Air quality is a measure of various pollutant concentrations in the atmosphere in a specific location and their associated potential for effects. This section on air quality effects associated with the Proposed Project includes an assessment of sources of criteria pollutants, hazardous air pollutants (HAPs), regulatory standards, and permitting. Sources of air pollution include both anthropogenic and natural sources. Anthropogenic sources of air pollution may include stationary sources (e.g., manufacturing plants) and mobile sources (e.g., passenger cars and trucks). Natural sources of air pollution can include forest fires, pollen, organic compounds released by plants, and other airborne gases or particles produced by weather events or geological activity. Greenhouse gases (GHG) and climate change are discussed in Section 3.7 (Greenhouse Gas Emissions, Climate Change, and Climate Resiliency).

3.6.1 Legal and Regulatory Setting

This section lists the Federal, State, and local regulatory settings applicable to the review of air quality resources for the Proposed Project. The legal framework for air quality includes both Federal and State laws and regulations including those promulgated by the USEPA and delegated to and implemented by the NYSDEC. USEPA Region 2 provides an oversight role.

3.6.1.1 Federal

Criteria Pollutants and National Ambient Air Quality Standards (NAAQS)

On a Federal level, the CAA sets the framework and goals for controlling and improving the nation’s air quality to protect public health and the environment. It requires the USEPA to establish primary and secondary NAAQS for the following criteria pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter smaller than or equal to 10 micrometers (PM_{10}), particulate matter with an aerodynamic diameter smaller than or equal to 2.5 micrometers ($PM_{2.5}$), and lead (Pb). The NAAQS specify the ambient concentrations of criteria pollutants to which the public can be exposed without adverse health effects and are designed to protect those segments of the public most susceptible to respiratory distress, including people with asthma, chronic obstructive pulmonary disease, or other lung diseases, as well as very young people, elderly people, and people engaged in strenuous work or exercise. The NAAQS are divided into two types of standards: primary standards, which are intended to protect public health with an adequate margin of safety; and secondary standards, which are intended to protect public welfare from any known or anticipated adverse effect of a pollutant (e.g., ecological effects such as damage to vegetation) (USEPA, 2024b; Table 3.6-1).

Table 3.6-1 National Ambient Air Quality Standards

Pollutant		Primary / Secondary	Averaging Time	Level	Form
Carbon Monoxide		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		Primary and secondary	Rolling 3-month average	0.15 µg/m³ (1)	Not to be exceeded
Nitrogen Dioxide		Primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and secondary	Annual	53 ppb (2)	Annual Mean
Ozone		Primary and secondary	8-hour	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particulate Matter	$PM_{2.5}$ (4)	Primary	Annual	9 µg/m³	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m³	Annual mean, averaged over 3 years
		Primary and secondary	24-hour	35 µg/m³	98th percentile, averaged over 3 years
	PM_{10} (4)	Primary and secondary	24-hour	150 µg/m³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		Primary	1-hour	75 ppb (5)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	Annual	10 ppb	Annual mean, averaged over 3 years

Sources: USEPA (2024c), NYSDEC (2024d).

1. In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.
2. The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
3. Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O_3 standards.
4. $PM_{2.5}$ is particulate matter that is 2.5 micrometers or less in diameter. PM_{10} is particulate matter that is 10 micrometers or less in diameter.
5. The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP

call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Pursuant to the CAA, USEPA has developed classifications for distinct geographical regions that have atmospheric pollutant concentrations above or below the NAAQS. USEPA designates whole or partial counties as attainment, nonattainment, maintenance or unclassifiable for each criteria pollutant. Regions classified as attainment are areas in which the pollutant concentrations are below the NAAQS. A nonattainment classification represents an area in which the pollutant exceeds the NAAQS. The maintenance designation is used when monitored pollutants have been reduced from the nonattainment to the attainment levels and a maintenance plan is approved. Areas in which USEPA is not able to determine an attainment status are designated unclassifiable.

Finally, under the CAA, General Conformity prohibits Federal approvals, authorization or funding of a Federal action "which does not conform to an applicable implementation plan" (40 CFR 93.150(a)). The requirements apply in nonattainment areas as designated per 40 CFR Part 81 and defined in 40 CFR 93.153(b)(1), and maintenance areas (which have been redesignated as maintenance less than 20 years ago) as defined in 40 CFR 93.153(b)(2). The Proposed Project is subject to permit review that would ensure conformance with New York's State Implementation Plan (SIP) and that it does not cause or contribute to violations of the NAAQS, increase the frequency or severity of an area's existing NAAQS violation, or delay timely attainment or maintenance of the NAAQS in an area.

New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP)

NSPS, codified in 40 CFR Part 60, are stationary source standards for various air pollutants that set emissions limits for specific equipment at new and modified industrial facilities. The primary purpose of the NSPS is to attain and maintain ambient air quality by ensuring that the best demonstrated emission control technologies are installed as industrial infrastructure is modernized. NESHAP, codified in 40 CFR Parts 61 and 63, establishes a regulatory framework to reduce emissions, and thus, reduce public exposure to HAPs from both general and specific stationary source categories.

The Semiconductor Manufacturing NESHAP, codified in 40 CFR 63 Subpart BBBBB, regulates major semiconductor manufacturing sources with a potential to emit 10 tons per year (tpy) or more of any individual HAP, or 25 tpy or more of combined HAPs. The most prevalent HAPs emitted from the semiconductor industry include HCI, hydrogen fluoride (HF), glycol ethers, methanol, and xylene.

Both NSPS and NESHAP must be evaluated for applicability to operations of the Proposed Project. Collectively, these rules would dictate required HAP control and/or emission limitations, monitoring, notification, recordkeeping and reporting requirements.

Mobile Source Air Toxics (MSATs)

MSATs are HAPs emitted from highway and off-road vehicles and equipment that are known to or suspected to cause serious health and environmental effects. MSATs include 1,3 butadiene, acetaldehyde, acrolein, benzene, ethyl benzene, formaldehyde, naphthalene, and polycyclic organic matter (POM). USEPA regulates MSATs pursuant to the CAA codified in 40 CFR Parts 59, 80, 85 and 86. MSATs will be evaluated for applicability to mobile sources from the Proposed Project.

3.6.1.2 State

Stationary Sources

The CAA requires states to develop SIPs that outline how the state will attain and maintain the NAAQS. States may develop additional requirements provided they are at least as stringent as USEPA's. NYSDEC's applicable regulations must be met in addition to the USEPA requirements that apply to the Proposed Project.

New York State has adopted the Federal air quality standards (both primary and secondary NAAQS) as its State standards. Governing regulations for air quality standards and requisite permitting primarily include Title 6 of the New York Codes, Rules, and Regulations (NYCRR) Part 201: Permits and Registrations, Part 212: Process Operations, Part 231: New Source Review, and Part 257: Air Quality Standards. NYSDEC has established additional State air quality standards that would apply to the Proposed Project and address non-criteria pollutants from process operations, including relevant potential emissions like fluoride and hydrogen sulfide. NYSDEC has also established air quality guideline concentrations (both annual guideline concentrations (AGC) and short-term guideline concentrations (SGC)) for several non-criteria pollutants and requires these non-criteria pollutant emissions to be controlled adequately based on their potential health effects (6 NYCRR Part 212). When NYSDEC has not established air quality standards for a compound that may be emitted from an industrial facility, it follows a process published in the Division of Air Resources guidance DAR-1: "Guidelines for the Evaluation and Control of Ambient Air Contaminants Under 6 NYCRR Part 212" to derive an AGC and/or SGC for that compound that informs the levels of emissions control needed to protect public health.

Several other applicable State rules in 6 NYCRR Part 202: Emissions Verification, Part 211: General Prohibitions, Part 225: Fuel Composition and Use, Part 227: Stationary Combustion Installations, Part 229: Petroleum and Volatile Organic Liquid Storage and Transfer, and others set the general framework for source-specific air pollution controls and best practices.

National Emissions Inventory

USEPA has delegated authority to New York State to implement the CAA program and maintains stationary source emissions inventories as part of the USEPA National Emissions Inventory (NEI). The NEI is a comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and HAPs from stationary air emissions sources. Stationary or point sources in the NEI primarily include large industrial facilities and electric power plants, airports, and smaller industrial, non-industrial and commercial facilities. The emissions potential of each facility determines whether that facility should be reported as a point source according to emissions thresholds set in the Air Emissions Reporting Rule (AERR) and are all included in the Emissions Inventory System Point Data Category. The NEI is released every three years based primarily upon data provided by State, local, and tribal air agencies for sources in their jurisdictions and supplemented by data developed by the USEPA. The Proposed Project would be subject to reporting requirements under the NEI.

Mobile Sources

In addition to stationary source emissions inventories, New York State maintains nonpoint, on-road, and non-road sources, including mobile source, emission inventories as part of the USEPA NEI.

3.6.1.3 Local

There are no local air emission regulations applicable to the Proposed Project.

3.6.1.4 Permitting

An industrial stationary source exceeding certain emissions thresholds must apply for and receive an air permit from the NYSDEC prior to construction, modification or operation. The process of approving an air permit application includes evaluating atmospheric emissions from individual sources, determining applicable State and Federal regulations, evaluating appropriate level and types of emissions control, including Best Available Control Technology (BACT) and/or Lowest Achievable Emissions Rate (LAER), detailed further below, and assessing the possible ambient air quality impact from the facility within the study area. The NYSDEC air pollution control regulations additionally include requirements to meet Reasonably Achievable Control Technology (RACT) for common air emission sources. Once the NYSDEC confirms regulatory requirements are met and offsite air quality standards or guideline concentrations would be met, the air permit for the facility may be issued.

Federal

Under the CAA, permits are required for the construction and operation of certain new air emission sources. The New Source Review (NSR) program covers preconstruction requirements under the Nonattainment NSR (NNSR) and Prevention of Significant Deterioration (PSD) permitting programs by comparing a new major source to its area's NAAQS attainment status. Operating permits, or Title V operating permits, under Title V of the CAA are required for all sources that emit ambient emissions in excess of 100 tpy of a criteria pollutant, for major sources under NNSR and PSD regulations, or in excess of 10 tpy of single HAP or 25 tpy of all combined HAPs.

State

With few exceptions,[54] the USEPA has delegated NYSDEC authority to implement CAA regulations within New York State. This includes the issuance of air pollution control permits under New York State's Federally-approved permitting program under 6 NYCRR Part 201, including pre-construction and Title V operating permits. The CAA NSR program requirements for major sources are implemented by New York State through its NNSR and PSD air quality regulations contained in 6 NYCRR Part 231. The requirements of the NSR permitting program are

[54] Certain authorities are not delegated by USEPA to state or local agencies that are likely to be nationally significant or alter the stringency of the underlying standard. Certain provisions of the CAA (e.g. 40 CFR Part 60 Subpart A, 40 CFR Part 61 Subpart A, and 40 CFR Part 63 Subpart A) are not delegated to state and local agencies.

administered by the NYSDEC Division of Air Resources (DAR) and are incorporated into a single Title V operational permit.

New Source Review (Pre-construction)

The NSR program is a preconstruction permitting program that requires certain industrial facilities to acquire an NNSR or PSD pre-construction permit specifying what construction is allowed, certain emissions limits and requirements during operation.

Under NSR, NNSR permits are required for new major sources in nonattainment areas (areas that do not meet one or more of the NAAQS) or are located in the Ozone Transport Region (OTR).[55] As ozone is typically not directly emitted from stationary sources, but is formed by precursor pollutants VOC and NO_X, NNSR permitting thresholds are set based on these two pollutants. The major source threshold for NNSR permits is 50 tpy for ozone (50 tpy VOC and 100 tpy NO_X).

Additionally, PSD is a type of NSR permitting program that requires permits for new major sources in attainment or unclassifiable areas, which, except for VOC and NO_X, is the case for the Proposed Project. The major source threshold for PSD permits is 250 tpy of a regulated pollutant for sources that are not named source categories, including semiconductor manufacturing. As a condition for permit approval based on the provisions of 6 NYCRR 231-5, Micron would additionally be required to obtain Emission Reduction Credits (ERCs) for emission reductions that occurred in the vicinity of the facility as defined in 6 NYCRR 231-10 and 6 NYCRR 231-13 for operation of all four fabs.

PSD is further designed to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value. PSD does not prohibit new emission sources but ensures that economic growth occurs while protecting public health, national parks, wilderness areas, and other significant areas. PSD permitting also applies to new major stationary sources or major modifications constructed within 62 miles of a Class I area. USEPA's Regional Haze Program additionally calls on State and Federal agencies to improve air quality and visibility in 156 high-priority, or Class I, national parks and wilderness areas. While no Class I areas exist in New York State, the Federal Land Manager (FLM) for Lye Brook Wilderness area in Vermont, as the closest Class I area to the Proposed Project, is required to be notified as part of the state permitting process to determine if assessments of impacts to Class I areas would be required. A copy of the FLM correspondence will be submitted to NYSDEC with the air dispersion modeling protocol and report.

Certain additional impact analyses are required as part of the PSD review as described in 6 NYCRR 231-7.3. These include modeling to assess potential impacts to soils and vegetation, visibility, and include emissions from associated industrial, commercial, and residential growth as

[55] The OTR, in which New York State resides, was formed by Section 184 of the CAA to address cross-state ozone pollution in the northeast and mid-Atlantic and requires additional pollution control measures separate from the NSR program.

well as the emissions from the Proposed Project. A detailed analysis of these items has been submitted in the modeling report appended to Micron's Air Permit Application 2.

Best Available Control Technology and Lowest Achievable Emission Rate

Sources subject to PSD require utilization of Best Available Control Technology (BACT), an air quality analysis, additional impacts analysis, and public involvement. As defined in 6 NYCRR 231-4.1(b)(9), BACT refers to an emissions limitation based on the maximum degree of reduction for each air pollutant subject to regulation under the CAA that NYSDEC determines is achievable for the facility. PSD increments limit the amount of new pollution permissible above baseline levels, preventing clean air from deteriorating beyond the NAAQS limit.

NNSR applies to new major sources of pollutants in areas designated as in nonattainment with the NAAQS or are located within the OTR. Sources subject to NNSR requirements must implement the Lowest Achievable Emission Rate (LAER), which, as defined in 6 NYCRR 200.1(ak), enforces the most stringent emission control technology available, regardless of cost consideration, emission offsets, and public involvement. LAER requirements are at least as stringent as BACT.

The requirements for the utilization of BACT and LAER are defined on a pollutant-by-pollutant basis (depending on NAAQS pollutant attainment status) and are assessed for each emission source by source category.

Additional Required Permits

Additional registrations or permits for construction phase stationary sources on the Micron Campus and construction and operations permits for the Rail Spur Site are anticipated to be submitted separately by the contracted operators of those Proposed Project components. No air quality permitting is anticipated to be required for the Childcare Site. Additional construction and operating permits may also be required for the Connected Actions. If required, permit applications would be submitted by the appropriate operating entity for each Connected Action facility.

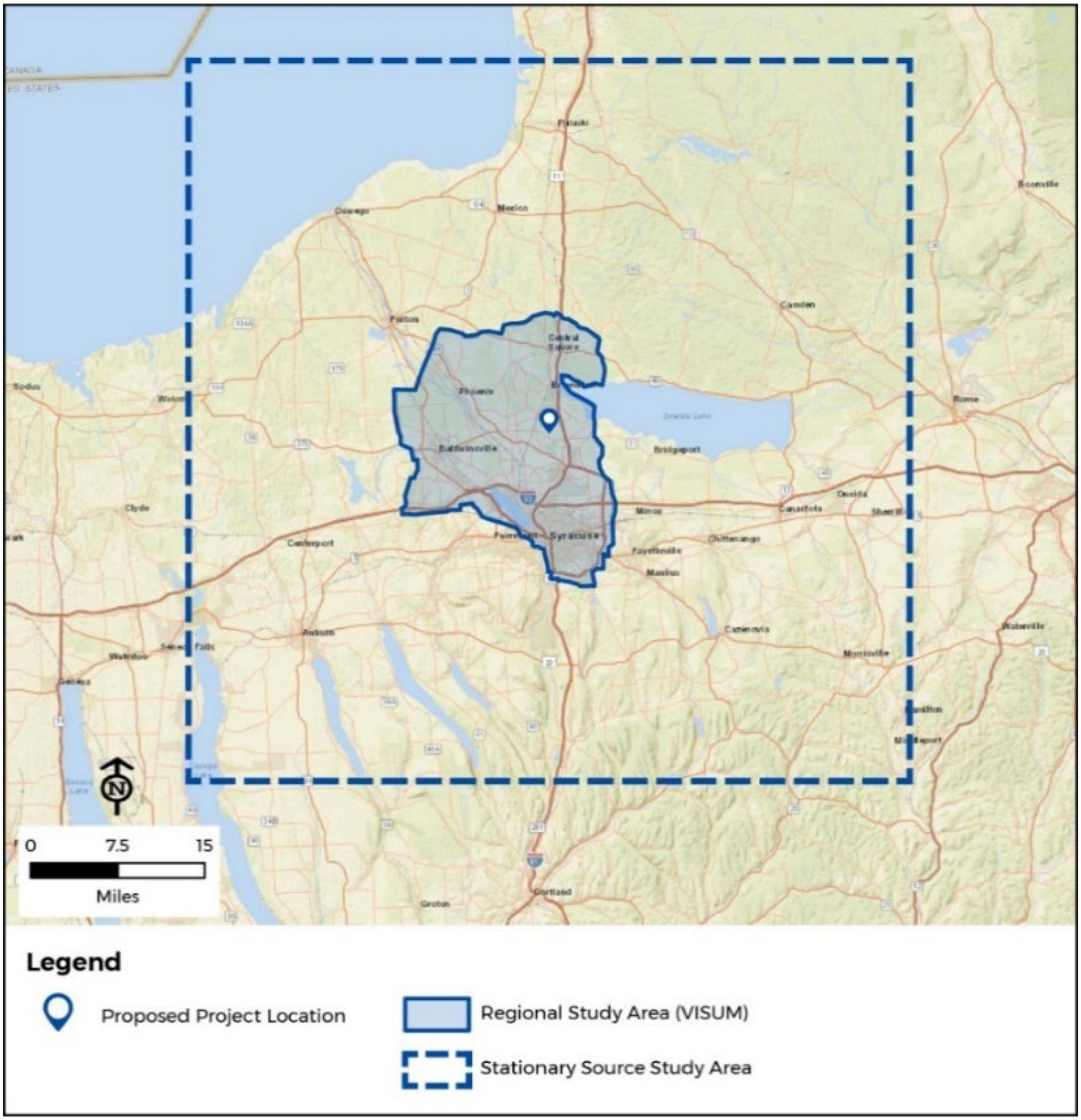
3.6.2 Affected Environment

Described below is the affected environment for air resources. This section defines the study area for stationary sources and the regional study area for mobile sources and explains the methodology, data, and sources of information used to describe the affected environment.

The stationary source study area was selected to match the area defined by the USEPA user guides for the USEPA Regulatory AERMOD Modeling System, USEPA's Guideline on Air Quality Models (40 CFR Part 51 - Appendix W) and DAR-10: NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis. A Cartesian receptor grid extended to 31 miles (50 km) with the Proposed Project location at the center was selected based on this guidance.

The traffic analysis as described in Section 3.11 (Transportation and Traffic) determines the area in which traffic patterns are affected by the Proposed Project. Due to a direct relationship between regional traffic patterns and mobile source emissions, the mobile source regional study area was selected to match the area in which traffic patterns are affected by the Proposed Project. The stationary source air quality study area, being a larger area, encompasses the smaller mobile air quality regional study area. Both study areas generally have the same affected environment characteristics such as ambient air quality standards and county emission inventories. The air quality study area (stationary and mobile combined) encompasses Onondaga County, surrounding counties including Oswego, Oneida, Lewis, Madison, Cortland, Chenango, Cayuga, Seneca, and Wayne Counties, and a portion of Lake Ontario. For reference and comparison, the stationary source study area and regional study area for mobile sources are included in Figure 3.6-1.

Figure 3.6-1 Stationary and Regional (Mobile) Air Quality Study Area



Source: World Street Map (Esri, 2025b): Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, USEPA, NPS, USDA, NYSDEC.

3.6.2.1 Ambient Air Quality

Based on review of the USEPA's Greenbook, Onondaga County and surrounding counties within the stationary source study area, including Oswego, Oneida, Lewis, Madison, Cortland, Chenango, Cayuga, Seneca, and Wayne Counties, are defined as Attainment/Unclassifiable or Maintenance for all NAAQS. These determinations are based on ambient monitoring data and designated per 40 CFR Part 81 as defined in 40 CFR 93.152. Onondaga County is treated as Unclassifiable and/or Attainment for ozone review for general conformity but as non-attainment for permitting purposes as detailed below. In addition, the USEPA's Greenbook notes that Onondaga County was formerly considered nonattainment for CO but was approved for redesignation as a maintenance area in 1993 and is currently designated as a maintenance area for CO (USEPA, 2024d). Based on guidance received from the NYSDEC, counties that currently achieve the NAAQS for CO but are designated as maintenance for CO are considered to be in attainment.

In addition to the 40 CFR Part 81 determinations, all of New York State is located within an OTR, which results in Onondaga County and surrounding counties being treated as nonattainment by New York State (6 NYCRR 200.1(bd) and 201-2.1(b)(21)(iv)(c)) for permitting purposes. As such, Onondaga County is treated as moderate nonattainment for ozone and its precursors (NOx and VOC) for New York State air quality permitting. Therefore, the Study Area, located within Onondaga County and part of the Central New York Intrastate Air Quality Control Region (AQCR), is designated as in attainment for all criteria pollutants except for NOx and VOC.[56] Thus, major source thresholds for VOC would be lowered to 50 tpy for the Proposed Project area (NYSDEC, 2024d).

On February 7, 2024, the USEPA announced a final rule to reduce the annual NAAQS for $PM_{2.5}$ to 9.0 µg/m^3. Onondaga County was previously designated as attainment with the 12 µg/m^3 NAAQS, not accounting for its location within an OTR. Data collected from the monitor in East Syracuse indicates that Onondaga County is likely to be classified as attainment following implementation of the updated NAAQS.[57] In addition, the USEPA's website announcing the Final Reconsideration of the NAAQS for $PM_{2.5}$ included a map of counties which already meet the new $PM_{2.5}$ standard, including Onondaga County (USEPA, 2024e).

Monitoring data from the East Syracuse and Rochester locations, as reported on the USEPA AirData database, are shown in Table 3.6-2 for the three-year period of 2021 through 2023.

[56] As ozone is not directly emitted, the NSR program only directly regulates ozone precursors, NO_X and VOC.

[57] Additional context on selection of monitor locations for background concentrations can be found in the modeling executive summary in Appendix I-1.

Table 3.6-2 East Syracuse and Rochester Background Air Quality Concentrations

Pollutant	Averaging Period	Statistic	2021	2022	2023	NAAQS Level	Measurement Units
Ozone (East Syracuse)	8-hour	1st Maximum	0.069	0.060	0.076	0.070	ppm
		2nd Maximum	0.069	0.057	0.074		
		3rd Maximum	0.068	0.057	0.070		
		4th Maximum	0.067	0.056	0.070		
		# Days> Std	0	0	2		
$PM_{2.5}$ (East Syracuse)	Annual	Mean	6.9	6.1	8.4	9 (1)	µg/m^3
	24-hour	98th percentile	18	13	34	35	
PM_{10} (Rochester)	24-hour	1st Maximum	26	42	69	150	µg/m^3
		2nd Maximum	24	24	50		
		3rd Maximum	22	23	38		
		# Days> Std	0	0	0		
SO_2 (Rochester)	1-hour	99th percentile	1.70	1.63	1.67	75	ppb
NO_2 (Rochester)	1-hour	98th percentile	21.23	31.23	30.10	100	ppb
	Annual	Mean	6.52	6.82	6.80	53	ppb
CO (Rochester)	8-hour	1st Maximum	0.7	0.6	0.7	9	ppm
		2nd Maximum	0.7	0.6	0.7		
		# Days> Std	0	0	0		
	1-hour	1st Maximum	1.15	0.84	0.83	35	
		2nd Maximum	1.07	0.82	0.83		
		3rd Maximum	1.04	0.82	0.82		
		# Days> Std	0	0	0		

Source: NYSDEC (2022); NYSDEC (2023a); NYSDEC (2024e).
1. Primary NAAQS for PM2.5 depicted here for comparison.

3.6.2.2 Emissions Inventory for Counties in Study Area

Consistent with the stationary source study area, the affected environment is characterized by current emissions from existing sources located in Onondaga, Oswego, Oneida, Lewis, Madison, Cortland, Chenango, Cayuga, Seneca, and Wayne Counties, and is characterized using information from the National Emissions Inventory (NEI). The analysis also includes characterization of existing mobile sources and emissions for the regional study area.

Manufacturing Operations – Point and Non-Point Existing Emissions Sources

Below is an assessment of existing Point and Non-Point source emissions for counties in the stationary source study area from the 2020 NEI Data Summary of Point and Non-Point Sources (USEPA, 2023b).

Table 3.6-3 Summary Existing Emission Totals in Study Area in 2020 (Tons)[1]

Pollutant	Existing Stationary Source Area Emissions (tons)
Total PM[2]	5,733
PM_{10}	5,733
$PM_{2.5}$	1,812
VOC	20,356
CO	8,277
NO_X	4,824
SO_X	599
Total HAP	1,907
Fluorides	--
Lead	1.24

Source: USEPA NEI 2020 Data Summary (USEPA, 2023b).
1. The 2023 NEI inventory year is in progress and will not be published until March 2026. Stationary sources include point and nonpoint source emissions.
2. NEI does not collect data separately for total PM. For purposes of comparison with emissions analysis later in this section, it is assumed Total PM = PM10.

Mobile Sources

Mobile sources consist of two categories – the on-road emissions from roadway vehicles, and the off-road emissions from construction and construction equipment. Below is a summary of New York's statewide criteria air pollutant emissions from the 2020 NEI Data Summary (Table 3.6-4).

Table 3.6-4 Summary of Mobile On-Road & Off-Road Emissions in New York State in 2020 (Tons)[1]

Pollutant	On-Road (Highway) Emissions	Off-Road (Construction Equipment + Dust) Emissions
PM_{10}	7,237	44,622
$PM_{2.5}$	2,376	7,215
VOC	27,688	45,940
CO	342,121	578,314
NO_X	56,401	32,249
SO_2	338	33

Source: USEPA NEI 2020 Data Summary (USEPA, 2023b).
1. The 2020 NEI data is the most recent data set that includes on-road and off-road emissions for comparison.

3.6.3 Environmental Consequences

3.6.3.1 No Action Alternative

Manufacturing Operations

Although OCIDA would continue to seek to develop the WPCP for an economic development use, under the No Action Alternative, the Proposed Project and components of Connected Actions would not be constructed and no NYSDEC-permitted stationary sources of air emissions would be constructed on the Micron Campus, the Rail Spur Site, nor the Childcare Site at this time. This would result in no reasonably foreseeable effects on air quality from the No Action Alternative.

Mobile Sources

As detailed in the methodologies in Appendix I-2, MOVES4 model runs were performed for the No Action Alternative for each traffic analysis year (2027, 2031 and 2041), with results summed to produce annual emissions of the regional roadway network. Table 3.6-5 presents emissions of the criteria pollutants for the regional roadway network and emissions of the nine-priority MSAT for the regional roadway network under No Action Alternative conditions.

As shown in Table 3.6-5, even with increases in vehicle miles traveled (VMT) in future years due to population growth, emissions of criteria pollutants and MSAT are projected to stay roughly the same or decrease, due to USEPA-mandated emissions regulations for vehicles in future years (USEPA, n.d.).

Table 3.6-5 Regional Mobile Source Pollutant Burdens and Mobile Source Air Toxics Burdens (Tons Per Year) – No Action

	2027	2031	2041
Annual Vehicle Miles Travelled (VMT)	3,042,335,865	3,161,373,598	3,497,868,635
Regional Pollutant Emission Burdens (tpy)			
CO	4,656.91	4,046.09	2,819.94
NO_x	322.57	197.81	98.10
SO_2	6.53	6.02	5.35
VOC	86.73	79.42	74.60
PM_{10}	97.93	100.19	108.68
$PM_{2.5}$	20.46	18.83	17.19
Regional Mobile Source Air Toxic Emission Burdens (tpy)			
1,3-Butadiene	0.07	0.01	0.00
Acetaldehyde	0.81	0.57	0.37
Acrolein	0.08	0.05	0.02
Benzene	2.05	1.70	1.45
Diesel PM	3.66	2.02	0.50
Ethylbenzene	1.36	1.27	1.24
Formaldehyde	1.41	0.99	0.59
Naphthalene	0.14	0.09	0.05
Polycyclic Organic Matter (POM)	0.06	0.04	0.02

Effects Determination

Based on the regulatory requirements for preconstruction and operational air quality permitting and compliance, the emissions controls inherent to the Proposed Project operations, and the confirmation through atmospheric dispersion modeling that stationary sources associated with the Proposed Project would not cause or contribute to an exceedance of any applicable NAAQS, AGC or SGC, the stationary and mobile source emissions from construction and long-term operation of the Proposed Project would not have a significant adverse effect on air quality.

3.6.3.2 Preferred Action Alternative

Under the Preferred Action Alternative, construction and operation of the Micron Campus, Childcare Site, Rail Spur Site, and Connected Actions would result in generating new air pollutant emissions. The analysis that follows includes stationary and mobile source air emissions quantified from these activities. For the purposes of the analysis and based on the regulatory differences between each source type, the discussion of the stationary emissions sources have been described under the Manufacturing Operations heading and non-stationary sources have been described under the Mobile Sources heading. The description of emissions generating processes have also been separated into construction and long-term operational activities to clarify when the emissions would occur during the Preferred Action Alternative.

Manufacturing Operations

Construction Effects

Construction emissions were quantified for the Proposed Project based on a preliminary assessment of anticipated stationary source construction emissions sources that would be operated on the Micron Campus, the Childcare Site and Rail Spur Site during construction. The construction emissions also include emissions associated with operations of the Rail Spur Site in support of construction on the Micron Campus. Mobile source construction emissions including emissions from all three sites are quantified in “Mobile Sources Construction Effects” below.

The emissions detailed below were calculated using preliminary information regarding the Proposed Project on-site emission sources.

The stationary source emissions estimates for the Micron Campus construction activities include fugitive dust from operation of a concrete batch plant[58], material handling, aggregate processing, and storage piles, along with combustion associated with the conveyance system generator and heaters, boilers, steam generators, and diesel generator in support of the concrete batch plant, assuming the sources operate at 6,000 hours per year based on operations during daytime hours.[59]

The stationary source emissions estimates from operation of the Rail Spur Site include fugitive dust from material handling and storage piles and combustion associated with the conveyance system generator, assuming the sources operate at 6,000 hours per year based on operations during daytime hours. The emissions were generated using emission factors developed by the USEPA’s AP-42 (USEPA, 2024f) Compilation of Emission Factors based on anticipated equipment quantity and type.

The potential emissions estimates for construction of the Micron Campus, Childcare Site, and Rail Spur Site (Micron Campus Construction) and Rail Spur Site operation in support of construction activities are presented in Table 3.6-6 below. Based on the emission quantities presented, stationary source construction emissions associated with the Proposed Project would have a temporary adverse, direct impact on air quality.

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[58] The operation of a single concrete batch plant is included in the analysis for construction needs as reasonably foreseeable. Multiple batch plants will be located onsite to ensure operational redundancy. Short periods during the construction process may necessitate concurrent operation, however, the reasonably foreseeable effects would be most appropriately represented by operation of one batch plant at a time.

[59] As discussed in Section 3.12 (Noise and Vibration), construction is anticipated to occur 16 hours per day. While stationary sources are likely not to operate the entire duration or for 365 days per year, the rail spur operation is conservatively assumed to operate 6,000 hours per year in support of construction the Micron Campus components as a worst-case scenario.

Table 3.6-6 Stationary Source Construction Potential Emissions Summary (tpy)

Air Contaminant	Micron Campus Construction (Max per Pollutant)[1]	Rail Spur Site Operation	Total PTE
PM [(2)]	49.30	13.01	62.31
PM_{10}	19.80	6.43	26.23
$PM_{2.5}$	12.11	1.59	13.70
VOC	1.25	0.66	1.90
CO	12.40	7.18	19.58
NO_X	24.97	12.47	37.44
SO_X	2.65	2.56	5.20
Total HAP	0.23	1.22E-02	0.24

1. While the type of activity or equipment operation will necessarily vary for the duration of the construction schedule, the maximum emissions per pollutant in a given construction year are shown to represent the worst-case scenario.
2. PM is defined as total particulate matter, which includes PM_{10} and $PM_{2.5}$. Micron Campus Construction PM assumed to be equal to PM_{10} based on available MOVES4 data.

As noted previously, air quality permits for the operation of the Rail Spur Site and the Micron Campus construction stationary sources are anticipated to be obtained separately by the contracted operators. These contracted operators would also be required to maintain compliance with air quality requirements separate from Micron. For the purposes of this analysis, it is also assumed that operation of the Rail Spur Site aggregate handling and conveyance operations would be limited to the periods of construction associated with the Micron Campus and these systems would not operate once all four fabs are operational.

Operational Effects

Stationary Source Air Emission Inventory

The analysis of the air quality impact of the stationary air emission sources of the Micron Campus, Childcare Site, and Connected Actions includes quantifying the air emissions of criteria pollutants, HAPs, and other air contaminants regulated by NYSDEC, using emission factors developed by the USEPA in AP-42 (USEPA, 2024f) Compilation of Emission Factors for common air emission sources (e.g., generators, boilers) and engineering experience with facilities similar to Micron's operations. Although there are no specific federal and state air quality standards for PFAS individually or as a group, air pollutants anticipated to be generated from the Micron Campus, including PFAS, have been evaluated to the extent practicable for the Proposed Project. Appendix L-1 includes additional detail on the regulatory context for PFAS.

Semiconductor process tools and miscellaneous fab cleaning with isopropanol would be the principal sources of VOC emissions from the Micron Campus. Some VOC emissions from process tools would be routed to tool-level thermal oxidation systems, including metal etch point-of-use (POU) destruction, and thin films Process Equipment Exhaust Conditioners (PEECs), which are inherent safety equipment necessary to safely operate a modern fab.[60] Centralized rotor-concentrator thermal oxidizers (RCTOs) would be required for certain other VOC-emitting processes to achieve at least a 97 percent reduction of the VOC emissions from the process exhaust as required by the applicable proposed LAER limitations. The gas yard water bath vaporizers (WBV)s, boilers, fire pump engines, and emergency generators also contribute to VOC emissions from fuel burning activity. VOCs are also emitted from wastewater treatment, lab operations, storage tank venting, and solvent waste processing. As part of proposed LAER requirements, VOC emissions from storage tanks are required to be reduced by at least 95 percent.

HAPs are emitted similarly through these VOC-emitting process activities. NESHAP Subpart BBBBB requires inorganic and organic HAP emissions from process vents and storage tanks comply with either a minimum control efficiency or a minimum outlet concentration. The applicable standards vary depending on the process. Centralized wet scrubbers would be the primary control mechanism for inorganic HAP emissions, including HCl and HF, while centralized RCTOs would be the primary control mechanism for organic HAP, such as methanol.

The primary source of PM emissions from manufacturing is gas to particle conversion. This may occur after oxidation of gases in control devices or as evaporated materials from heated liquids undergo condensation. The majority of the manufacturing PM emissions would be exhausted through acid, VOC, and ammonia scrubbers. PM would also potentially be emitted from gas yard WBVs, boilers, fire pump engines, and emergency generators. PM is the only pollutant emitted from the cooling towers and results from dissolved solids in the water carried with drift loss. Drift eliminators certified to < 0.0005% drift rate would be installed as PM BACT to control emissions. PM is additionally emitted from wastewater treatment operations, roadway vehicle operation, waste processing, and from storage silos.

Acid scrubbers, VOC oxidizers, and fuel burning equipment (such as gas yard WBVs, boilers, fire pump engines, and the emergency generators) would be sources of NO_X emissions. NO_X can also be generated from manufacturing processes and exhaust from these tools would be emitted through acid scrubbers. For example, nitrogen trifluoride would be converted to NO_X during the cleaning of oxygenated chambers and nitrous oxide would be converted to NO_X downstream of vapor deposition tools.

Sulfur dioxide is used on a limited basis in wafer processing and finishing. Exhaust from these tools would be routed to acid scrubbers where SO_2 would be emitted. Fuel burning equipment such as the gas yard WBVs, fire pump engines, and emergency generators would also contribute to SO_2 emissions.

Finally, it is anticipated that any stationary sources at the Childcare Site would have minor or trivial amounts of air emissions; as such, emissions have not been quantified for this component of the analysis. Any proposed stationary sources would be subject to review for applicability under 6 NYCRR 201-3: Permit Exempt and Trivial Activities. Mobile source emissions associated with the construction of the Childcare Site and Rail Spur Site have been included in "Mobile Sources Construction Effects" below.

[60] The control of fluorinated GHGs (F-GHGs) are further discussed in Micron's Draft CLCPA Analysis as included in Appendix J-2.

Emissions from the Micron Campus' production equipment are based on mass balances of raw material usage, changes to raw materials in each type of production tool using knowledge of the semiconductor manufacturing process, and the type of localized and facility-wide emissions abatement devices. These emissions estimates include the installation and operation of process tools, fab support materials, acid scrubbers, VOC oxidizers, ammonia scrubbers, cooling towers, water bath vaporizers (WBVs), lab operations, and emergency generators and represent preliminary, conservative, worst-case estimates of emissions, assuming Micron operation of 24 hours per day and 7 days per week at its maximum production capacity.

Operation of the Micron Campus would result in new air emission sources being constructed in the study area. The preliminary emissions estimates for criteria pollutants and other pollutants of concern, accounting for emissions controls as required by Federal and State regulatory frameworks operation, for all four fabs in 2045 at full operations are presented in Table 3.6-7.[61]

Table 3.6-7 Estimated Micron Campus Post-Control Emissions Summary (tpy)[1]

Air Contaminant	Process Tools	Fab Support Materials	Thermal Oxidation Systems	Boilers, Emergency Generators, Fire Pump, WBVs[2]	Other Sources[3]	Total PTE (accounting for emission control)
PM [(1)]	70.38	--	27.93	11.91	45.10	155.32
PM_{10}	70.38	--	27.93	11.89	23.83	134.03
$PM_{2.5}$	70.38	--	27.93	11.89	1.75	111.95
VOC	270.25	190.88	30.58	17.02	66.30	575.04
CO	8.13	--	2,335.55	433.01	43.28	2,819.98
NO_X	280.80	--	349.08	108.19	10.31	748.38
SO_X	38.41	--	3.34	1.63	0.06	43.44
Total HAP	170.05	--	10.50	2.97	0.38	183.91
Fluorides	4.96	--	--	--	--	4.96
Lead	--	--	2.78E-03	7.54E-04	5.15E-05	3.58E-03

1. Operation of all four fabs at full build-out.
2. WBV = water bath vaporizer.
3. Other sources include on-site wastewater treatment, cooling towers, storage tanks and silos, roadway travel, lab operations, and Regenerative Catalytic Systems (RCS) combustion.

[61] NYSDEC, the air permitting authority for the Proposed Project, previously agreed with Micron's proposal to submit a two-step application approach to permit Phase 1 (Fabs 1 and 2) of the Micron Campus. The emissions calculations align with the scope of and can be found in these Air Permit Applications 1 and 2, and are conservatively scaled by a factor of 2 based on best available information to include operation of all four fabs, assuming emissions control technology used in Fabs 1 and 2 would be similarly used in Fabs 3 and 4. As previously noted, permitting of Fabs 3 and 4 would occur at a future date as construction is not anticipated to commence until 2033. This scaling is conservative because the actual emissions increase from the Fabs 3 and 4 emission sources are expected to be lower relative to the emissions increase presented below as control technologies become generally more efficient over time and are not expected to change the regulatory applicability to the Proposed Project.

4. PM is defined as total particulate matter, which includes PM10 and PM2.5.

Connected Actions Operations Effects

Operation of the new OCDWEP IWWTP and water reclamation facility would have the potential to result in emissions of certain organic and inorganic compounds based on a preliminary assessment of the general facility processes. The conceptual plan assumes the IWWTP would include a precipitation/clarification, membrane biological reactor (MBR), a water reclamation RO facility, solids handling, evaporation/crystallization and control buildings consistent with traditional wastewater facility construction.

Emissions from the IWWTP would typically be segregated into acid, ammonia, and solvent exhausts, if any exist. Further design will identify appropriate control measures. Emissions estimates for the IWWTP based on preliminary planning designs are represented in Table 3.6-8.

Table 3.6-8 OCDWEP IWWTP Operation Emissions Summary (tpy)

Air Contaminant	Total PTE
PM (1)	1.29
PM_{10}	1.29
$PM_{2.5}$	1.29
VOC	1.82
CO	31.1
NO_X	17.7
SO_X	0.47
Total HAP	0.52

1. PM is defined as total particulate matter, which includes PM10 and PM2.5

Stationary Source Air Emission Inventory Comparison

To conceptualize the potential significance of the Proposed Project's emissions from operations, a comparison was made between the total emissions (tons) from existing Point and Non-Point sources in the stationary source study area in 2020, as defined in Table 3.6-3 (USEPA, 2023b), total emissions upon startup and operation of individual fabs of the Proposed Project, with all four fabs being operational beginning in 2041 (tons), and the percent increase in overall emissions that would result from long-term operation of the sources associated with the Proposed Project. This comparison is presented in Table 3.6-9 below.

Table 3.6-9 Summary of Percent Increase in Emissions from the Proposed Project

Pollutant	2020 Existing Stationary Source Area Emissions (tons)[1]	Fab 1		Fabs 1 – 2		Fabs 1 – 3		Fabs 1 – 4	
		Total PTE[2] (tons)	Percent Increase from 2020	Total PTE[2] (tons)	Percent Increase from 2020	Total PTE[2] (tons)	Percent Increase from 2020	Total PTE[2] (tons)	Percent Increase from 2020
PM	5,733	38.83	0.68%	77.66	1.35%	116.49	2.03%	155.32	2.71%
PM_{10}	5,733	33.51	0.58%	67.02	1.17%	100.52	1.75%	134.03	2.34%
$PM_{2.5}$	1,812	27.99	1.54%	55.98	3.09%	83.96	4.63%	111.95	6.18%
VOC	20,356	143.76	0.71%	287.52	1.41%	431.28	2.12%	575.04	2.82%
CO	8,277	705.00	8.52%	1,409.99	17.04%	2,114.99	25.55%	2,819.98	34.07%
NO_X	4,824	187.10	3.88%	374.19	7.76%	561.29	11.63%	748.38	15.51%
SO_X	599	10.86	1.81%	21.72	3.62%	32.58	5.44%	43.44	7.25%
Total HAP	1,907	45.98	2.41%	91.96	4.82%	137.93	7.23%	183.91	9.65%
Fluorides	--	1.24	--	2.48	--	3.72	--	4.96	--
Lead	1.24	8.95E-04	0.07%	1.79E-03	0.14%	2.69E-03	0.22%	3.58E-03	0.29%

Source: USEPA NEI 2020 Data Summary (USEPA, 2023b).

1. Actual emissions reported for calendar 2020.
2. Total PTE and percent increase in emissions compared to 2020 stationary source emissions based on number of fabs operational following each stage of construction up through 2041.

The emissions increases associated with the Preferred Action Alternative would be expected to result in a substantial increase in stationary source emissions within the stationary source study area.

Analysis of Applicable Permitting Requirements

For PSD/NNSR and Title V approval, Micron has submitted an application for Phase 1 of the operations of the Micron Campus (Fabs 1 and 2) which is undergoing review by NYSDEC. Based on the emissions totals included in the permit application, the Proposed Project[62] operations on the Micron Campus would be subject to permitting under the New York PSD/NNSR air regulations (known as Title I of the CAA) and New York approved Title V permitting program as it would be classified as a major source of criteria pollutants (which includes NO_2, VOC, CO, PM_{10}, $PM_{2.5}$), and HAPs.

The Micron Campus operations would also exceed the major source thresholds for NNSR for VOC and NO_X. Based on these permit considerations, construction of the Proposed Project would require PSD/NNSR pre-construction review. The permit review would include a PSD dispersion modeling analysis and emissions control review including BACT and LAER. A BACT analysis for the Proposed Project was included in the permit applications for criteria pollutants designated as in attainment with the NAAQS in the Proposed Project area that exceed PSD thresholds (i.e., NO_2, CO, PM_{10}, $PM_{2.5}$) and GHG. NSPS, NESHAP, and NYSDEC requirements were evaluated for applicability to specific equipment and operations within the Micron Campus. In addition to BACT and LAER determinations for PSD/NNSR and NYSDEC RACT evaluations for VOC and NO_X, emissions of all air contaminants were evaluated under the 6 NYCRR Part 212. Part 212 dictates the level of control required for each contaminant based on its emission rate potential and toxicity of air contaminants. The requirements identified in the analysis described above were assessed for consistency between regulatory programs and a consolidated list of applicable regulations and requirements were prepared for the Proposed Project[63] as part of the air permit applications. The control of fluorinated GHGs (F-GHGs) in relation to the NYSDEC air quality standards and climate laws is further discussed in Section 3.7, Greenhouse Gas Emissions, Climate Change, and Climate Resiliency and Appendix L-1.

Air Dispersion Modeling

Based on the emissions totals associated with the Proposed Project and the regulatory requirements described above, atmospheric dispersion modeling will be required to demonstrate that compounds emitted from the Proposed Project do not exceed the NAAQS and Annual AGC and SGC within the study area. These concentration-based standards are defined to ensure that emissions increases do not have the potential to result in ambient pollutant concentrations that could result in negative health outcomes for the public. Further, these concentration-based thresholds define whether emissions increases from a project result in a significant adverse effect on air quality. To confirm compliance with these thresholds, dispersion modeling analyses are

[62] The Proposed Project as defined for NEPA/SEQRA includes a total of 4 Fabs. For the purposes of discussion, the analysis is limited to the Air Permit Project for Micron's Air Permit Application 1 & 2. A separate air permit application would be filed for the construction and operation of Fabs 3 and 4 as construction and operation is not anticipated to occur until several years in the future and air permits are only issued for five (5)-year terms.

[63] Ibid.

used to calculate offsite concentrations within a modeling domain and to determine whether the emissions output from a source are likely to cause or contribute to an exceedance of the standard.

A regulatorily required modeling evaluation has been completed for Phase 1 (Fabs 1 and 2) air quality permitting of the proposed Micron Campus operations and has been submitted to NYSDEC for review. For purposes of NEPA and SEQRA, a separate modeling evaluation has been completed for the full-scale operations of the proposed Micron Campus (Fabs 1-4). This modeling analysis utilized the same modeling requirements for NAAQS and NYSDEC regulation 6 NYCRR Part 212 and 257 compliance demonstrations as detailed in Appendix I-1 for the Phase 1 (Fabs 1 and 2) air quality permitting. Although additional modeling and review would be required for subsequent regulatory permitting of Fabs 3 and 4, the modeling analysis summarized below considers whether, based on preliminary design information, the operation of the proposed Micron Campus (Fabs 1-4) would not cause or contribute to an exceedance of an ambient air quality standard.

The modeling analysis described below focuses on the operation of the proposed Micron Campus (Fabs 1-4) as these operations represent the maximum emissions generating scenario throughout the construction and operation phasing of the Proposed Project. Specifically, the Rail Spur Site is not included in the modeling scenario as its substantial primary operations (aggregate handling and conveyance) would be limited to construction of the Micron Campus and be significantly reduced once all four fabs are operational. The Childcare Site and Connected Actions are also not included in the modeling scenario as detailed emissions were either not quantified as previously described, or in the case of the IWWTP, based on preliminary design information, are relatively small compared to the Micron Campus emissions and would not substantively change the analysis.[64] Thus, based on best available information, operation of the four fabs represents the worst-case operating emissions scenario for the assessment of ambient concentration impacts. In addition to the Micron Campus, the modeling demonstration also evaluates potential impacts at three nearby sources:

- Paul de Lima Co. In.: Located 2 miles (3 km) east of the Micron Campus
- Anheuser Busch Baldwinsville Brewery: located 8 miles (13 km) west of the Micron Campus
- Barrett Paving Materials, Inc.: Located 6 miles (10 km) west of the Micron Campus

Detailed methodologies used for the dispersion modeling analysis are included in Appendix I-1.[65] The analysis relied upon the USEPA Regulatory Modeling System (AERMOD model v24142) and included calculation of ambient concentrations throughout the air resource study area developed based on NYSDEC and USEPA requirements as discussed in Section 3.6.2, Affected Environment. The modeling included evaluation of stack parameters, building

[64] Inclusion of these additional facilities will be considered in the modeling scenario should they be required at a later time.

[65] NYSDEC has reviewed the modeling protocol and methods submitted by Micron on March 21, 2025 to ensure sufficiency in complying with all Federal and State regulatory requirements. The modeling related aspects of the protocol were conditionally approved by NYSDEC on July 8, 2025.

configurations, local terrain and other factors that may affect the dispersion of air emissions from the facility.

Table 3.6-10 depicts the total modeled impacts from operation of the Micron Campus and background concentrations compared to the NAAQS thresholds.

Table 3.6-11 represents short- and long-term modeled impacts from the Micron Campus in comparison to Part 212 and 257 annual AGC and SGC for regulated non-criteria pollutants.

Table 3.6-10 NAAQS Results

Pollutant	Averaging Period	Background[1] ($\mu g/m^3$)	Total Modeled Impact[2] ($\mu g/m^3$)	NAAQS Threshold ($\mu g/m^3$)	Compliance Confirmed?
PM_{10}	24-hr	33	44.71	150	Yes
$PM_{2.5}$	24-hr	14	22.74	35	Yes
$PM_{2.5}$	Annual	5.6	7.29	9	Yes
NO_2	1-hr	-	185.92	188	Yes
NO_2	Annual	13.16	22.28	100	Yes
CO	1-hr	1,718	11,209	40,000	Yes
CO	8-hr	1,260	5,442	10,000	Yes
SO_2	1-hr	4.4	16.26	196	Yes

1. NO_2 1-hr modeling background is included in the model as seasonal, hour-of-day variable background. Total modeled impact already includes background concentration.

Table 3.6-11 SGC and AGC Results

CAS #	Chemical Name	Short-Term Modeled Impact (µg/m³)	SGC (µg/m³)	Passing?	Long-Term Modeled Impact (µg/m³)	AGC (µg/m³)	Compliance Confirmed?
7726-95-6	Bromine	35.99	130.00	Yes	0.59	1.60	Yes
7782-41-4[1]	Fluorine[1]	2.46	5.30	Yes	0.044	0.067	Yes
10035-10-6	Hydrogen Bromide[2]	0.73	680.00	Yes	0.01	0.1	Yes
7722-84-1	Hydrogen Peroxide	-	-	-	0.39	3.30	Yes
7697-37-2	Nitric acid	37.11	86.00	Yes	0.61	12.30	Yes
7783-54-2	Nitrogen trifluoride	4.52	6.60	Yes	0.07	0.08	Yes
7446-09-5[1]	Sulfur dioxide[1]	16.26	196.00	Yes	0.77	80.00	Yes
75-73-0	Tetrafluorometha ne	-	-	-	2.98	300.00	Yes
7783-06-4	Hydrogen Sulfide	-	-	-	0.02	2.00	Yes
7664-41-7	Ammonia Group	425.34	2,400	Yes	9.78	500	Yes
75-10-5	Difluoromethane Group	-	-	-	3.44E-03	50,600	Yes
76-16-4	Hexafluoroethan e Group	-	-	-	0.02	50,400	Yes
Total Fluorides	Total Fluorides	2.63	5.30	Yes	0.048	0.067	Yes

1. Fluorine (CAS #7782-41-4) and sulfur dioxide (CAS #7746-09-5) modeled impacts reflect the modeled impact from modeling the contaminants individually, as opposed to the value derived from the unit modeling demonstration. Quantification and discussion of emissions from fluorinated compounds is discussed in Section 3.7 (Greenhouse Gas Emissions, Climate Change, and Climate Resiliency).

Based on the modeling methodology described above (and in Appendix I-1), the operation of the Proposed Project (under its maximum operational emissions scenario) would remain compliant with all applicable NAAQS for criteria pollutants and all applicable AGCs and SGCs for non-criteria pollutants.

Effects Determination

Based on the regulatory requirements for preconstruction and operational air quality permitting and compliance, the emissions controls inherent to the Proposed Project operations, and the confirmation through atmospheric dispersion modeling that stationary sources associated with the Proposed Project would not cause or contribute to an exceedance of any applicable NAAQS, AGC or SGC, the stationary source emissions from construction and long-term operation of the Proposed Project would not have a significant adverse effect on air quality.

Mobile Sources

The consideration of the effects from mobile sources are compared between the future Action Alternatives and the future No Action Alternative. To do so, the mobile source air quality analysis includes: a mesoscale (regional roadway network) emission analysis for criteria pollutants and MSAT; a microscale (localized intersection) air quality analyses for both CO and PM, and a construction analysis (Preferred Action only). A detailed methodology section for all mobile source air quality models is provided in Appendix I-2. As detailed in Section 3.11 (Transportation and Traffic), the traffic dependent analyses are projected based on projected traffic volume under each Action Alternative in 2027, 2031, 2041.

Construction Effects

Construction emissions were quantified for the Proposed Project based on construction schedule, phases, and construction equipment and duration of use. As detailed in I-2 emission factors were obtained from the non-road module in the MOVES4 model. The scope of emissions for non-road modules includes primarily non-road engine exhaust[66] from the build out of the Micron Campus, Childcare Site, and Rail Spur Site, fugitive dust from site preparation and ground disturbance on these sites, fugitive dust from rock crushing, and fugitive dust from paved and non-paved road traffic activity within the construction areas. The analysis also includes mobile source emissions associated with construction worker commutes and hauling of materials, which used on-road emission factors from the MOVES4 model.

Table 3.6-12 presents a conservative analysis of the annual construction emissions associated with the Proposed Project. Spreadsheets presenting the details of the analysis are contained electronically within Appendix I-2. Based on the emission quantities presented, construction emissions associated with the Proposed Project would have a temporary adverse, direct, impact on air quality.

[66] The analysis primarily considers mobile sources of exhaust emissions associated with engines for equipment such as loaders, crushing activities, excavators, dump trucks, trenchers, and similar equipment, but also includes a handful of stationary engines for the Rail Spur conveyance system operating on the Micron Campus and batch plant mixing.

Table 3.6-12 Annual Construction Emissions (tpy)

Year	Hydrocarbons (HC)	CO	NOx	PM_{10}	$PM_{2.5}$	SO_2
2025	0.48	5.85	3.62	23.35	2.60	0.01
2026	6.96	170.34	50.51	88.34	12.18	0.14
2027[1]	13.38	143.11	236.48	35.76	8.98	5.21
2028[1]	11.18	128.73	208.34	69.89	11.21	5.19
2029[1]	13.37	194.89	221.78	39.31	8.76	5.21
2030	2.47	27.54	29.36	24.86	3.87	0.08
2031	0.30	2.55	3.49	1.73	0.33	0.01
2032[2]	-	-	-	-	-	-
2033	0.57	15.94	3.84	41.39	4.39	0.03
2034	3.67	123.62	23.89	43.74	5.77	0.12
2035	1.19	21.56	13.32	24.17	3.08	0.06
2036	0.05	1.31	0.43	2.68	0.30	0.00
2037[2]	-	-	-	-	-	-
2038[2]	-	-	-	-	-	-
2039	0.49	18.02	3.60	51.37	5.36	0.03
2040	2.68	112.29	14.60	32.16	4.02	0.10
2041	0.81	20.86	9.59	24.56	2.93	0.07
2042	0.05	1.92	0.48	3.99	0.43	0.00
Max Year	*13.38*	*194.89*	*236.48*	*88.34*	*12.18*	*5.21*

1. Includes construction equipment and locomotives
2. Construction activity paused in 2032 after completion of Fab 1 and Fab 2, and in 2037 and 2038 after completion of Fab 3.

As shown in Table 3.6-13, when comparing the maximum year of construction emissions to New York State totals, they account for less than 1% of total statewide off-road construction emissions. The exception to this is SO_2, as the maximum year construction emissions include locomotives (active in 2027, 2028 & 2029), which are a major source of SO_2. It should be noted that the New York State totals do not include locomotives.

Table 3.6-13 Construction Emissions Compared to New York State Totals

Pollutant	Total NY State Off-Road (Construction Equipment + Dust) Emissions (tons)[1]	Max Year Construction Emissions (tons)	Percent of Total (%)
PM10	44,622	88.34	0.20%
PM2.5	7,215	12.18	0.17%
CO	578,314	194.89	0.03%
NOX	32,249	236.48	0.73%
SO2	33	5.21	15.79%

Source: USEPA NEI 2020 Data Summary (USEPA, 2023b).

1. Actual emissions reported for calendar 2020 are the most recently available for construction.

Operational Effects

Mesoscale Analysis

MOVES4 model runs were performed on a link-by-link basis using the regional traffic data. These analyses were performed for the No Action Alternative, Preferred Action Alternative, and each of the traffic mitigation scenarios (described in Section 3.11, Transportation and Traffic) for the applicable analysis years. Table 3.6-14 presents the results of the analysis for criteria pollutants and MSAT. As shown in Table 3.6-14, the Proposed Project would cause an increase in regional mobile source emissions for criteria pollutants and MSAT in each of the analysis years. As shown in Table 3.6-15, when comparing the highest regional project change in emissions in 2031 (year with biggest increases) to statewide on-road totals, they account for less than 0.1% of statewide on-road emissions.[67]

[67] When compared to 2020 statewide emissions as the most recently available construction emissions.

Table 3.6-14 Regional Mobile Source Criteria Pollutant Emissions

Pollutant	2027			2031			2041								
	No Action	Preferred Action	% Change	No Action	Preferred Action	% Change	No Action	Preferred Action	% Change	Traffic Mitigation Scenario A	% Change	Traffic Mitigation Scenario B	% Change	Traffic Mitigation Scenario C	% Change
Vehicle Miles Traveled (VMT)	3,042,335,865	3,055,710,086	0.44%	3,161,373,598	3,279,711,283	3.74%	3,497,868,635	3,564,973,904	1.92%	3,566,204,785	1.95%	3,566,317,715	1.96%	3,565,824,889	1.94%
Regional Pollutant Emission Burdens (tpy)															
CO	4,656.91	4,677.28	0.44%	4,046.09	4,197.04	3.73%	2,819.94	2,874.62	1.94%	2,872.86	1.88%	2,871.82	1.84%	2,871.27	1.82%
NOx	322.57	327.81	1.63%	197.81	207.07	4.68%	98.10	101.51	3.47%	101.24	3.20%	101.16	3.12%	101.15	3.11%
SO_2	6.53	6.56	0.50%	6.02	6.25	3.80%	5.35	5.46	1.98%	5.46	1.96%	5.46	1.95%	5.46	1.94%
VOC	86.73	87.19	0.53%	79.42	82.61	4.01%	74.60	76.09	1.99%	75.98	1.86%	75.95	1.81%	75.93	1.78%
PM_{10}	97.93	98.56	0.64%	100.19	104.78	4.59%	108.68	111.08	2.21%	110.57	1.73%	110.43	1.61%	110.39	1.57%
$PM_{2.5}$	20.46	20.62	0.78%	18.83	19.65	4.36%	17.19	17.56	2.16%	17.50	1.78%	17.48	1.68%	17.47	1.64%
Regional Mobile Source Air Toxic Emission Burdens (tpy)															
1,3-Butadiene	0.07	0.07	0.55%	0.01	0.01	3.39%	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%
Acetaldehyde	0.81	0.82	1.04%	0.57	0.59	3.53%	0.37	0.38	2.23%	0.38	2.02%	0.38	1.96%	0.38	1.94%
Acrolein	0.08	0.08	1.04%	0.05	0.05	3.88%	0.02	0.03	2.33%	0.03	2.16%	0.03	2.11%	0.03	2.08%
Benzene	2.05	2.06	0.41%	1.70	1.76	3.87%	1.45	1.47	1.92%	1.47	1.82%	1.47	1.78%	1.47	1.76%
Diesel PM	3.66	3.73	2.05%	2.02	2.11	4.38%	0.50	0.52	3.10%	0.52	2.88%	0.52	2.80%	0.52	2.79%
Ethylbenzene	1.36	1.37	0.46%	1.27	1.32	4.05%	1.24	1.26	1.98%	1.26	1.85%	1.26	1.80%	1.26	1.78%
Formaldehyde	1.41	1.42	0.90%	0.99	1.03	3.44%	0.59	0.60	2.04%	0.60	1.89%	0.60	1.83%	0.60	1.81%
Naphthalene	0.14	0.14	0.71%	0.09	0.10	3.70%	0.05	0.05	1.94%	0.05	1.85%	0.05	1.81%	0.05	1.79%
Polycyclic Organic Matter (POM)	0.06	0.06	0.67%	0.04	0.04	3.71%	0.02	0.02	1.89%	0.02	1.82%	0.02	1.78%	0.02	1.76%

Note: Percentages may not be directly calculated due to rounding.

Table 3.6-15 Regional 2031 Criteria Pollutant Change in Emissions Compared to New York State Totals

Pollutant	Total NY State On-Road (Highway) Emissions (tons)[1]	Year 2031 Increase in Emissions (No Action to Preferred Action) (tons)	Percent of Total
CO	342,121	151.95	0.04%
NOX	56,401	9.27	0.02%
SO2	338	0.23	0.07%
VOC	27,688	3.19	0.01%
PM10	7,237	4.59	0.06%
PM2.5	2,376	0.82	0.03%

Source: USEPA NEI 2020 Data Summary (USEPA, 2023b).
1. Actual emissions reported for calendar 2020.

Microscale Analyses

An effect of the Proposed Project includes employee and truck trips associated with operation of the four fabs. As such, a CO screening analysis and PM_{10} and $PM_{2.5}$ microscale (also known as hot-spot) analyses were undertaken to determine potential impacts from the traffic associated with the Micron Campus.

Carbon Monoxide (CO)

A CO screening was conducted for over 70 intersections in the project area, following NYSDOT's Transportation Environmental Manual (TEM) guidance. The intersection traffic used for the CO screening analysis was based on LOS and volume data from the traffic analysis (see Section 3.11, Transportation and Traffic). Per the TEM guidance, those intersections with Build LOS of C or better pass the screening and require no further analysis. Those intersections with a Build LOS of D or worse under Build conditions, however, require further screening.

For those intersections that failed the initial screening, a volume threshold screening was conducted, and the results were compared to the thresholds in Table 3C of Section I-3 of the NYSDOT TEM Chapter 1.1. All intersections passed the volume threshold screening and as such, no significant adverse impacts are predicted, and no further analysis is required. More details of the screening, including LOS and volume tables, can be found in Appendix I-2.

Particulate Matter (PM)

The PM analysis was performed in accordance with the USEPA *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (EPA-420-B-21-037, October 2021).

The PM Hot-Spot Analysis Methodology (Appendix I-2) identifies the process for conducting this project-specific hot-spot analysis following USEPA's nine-step process. The results of this analysis were compared with the applicable NAAQS for particulate matter.

Three locations were modeled based on traffic and truck volumes, proximity to sensitive receptors, proximity to the Micron campus, and level-of-service, with results presented in the tables identified (see Appendix I-2 for more information on the modeled sites and locations):

- Site 1 – NY31/US11/I-81 Area
- Site 2 – Caughdenoy Rd/SR31/Micron Access Road & Driveways
- Site 3 – NYS Route 481/Maple Road/Access Road

The traffic evaluation in 2041 includes three traffic mitigation scenarios related to easing traffic congestion (see Section 3.11, Transportation and Traffic), thus emissions were evaluated for each of the mitigation scenarios as well. Traffic mitigation is discussed in detail in Section 3.11 (Transportation and Traffic).

The highest modeled concentration at any one receptor was added to the background concentration, which is based on existing monitoring data. The resulting combined concentration is also known as the design concentration. The design concentration is then compared to the NAAQS. More information on the modeling can be found in Appendix I-2.

As shown in the PM Hot-Spot Analysis Results in Appendix I-2, there would be no exceedances of the NAAQS at any of the analyzed intersections; therefore, mobile source PM_{10} and $PM_{2.5}$ emissions associated with operation of the Preferred Action Alternative are not expected to have a significant adverse impact on local air quality.

Combined Effects Determination

The combined effects from long-term operations of stationary and mobile sources from the Proposed Project are analyzed using both the PM Hot Spot Analysis conducted for the three modeled sites and additional stationary source modeling conducted evaluating impacts from the Micron Campus (similar to the analysis under Air Dispersion Modeling) on the same three modeled sites.[68] Table 3.6-16 shows the modeled impacts at the three hot spot sites at full build-out in 2041. As shown in Table 3.6-17 through Table 3.6-19, the combined mobile source and stationary source modeled emissions for all scenarios at full build-out in 2041 demonstrate there would be no exceedances of the NAAQS for these analyzed sites. Therefore, combined mobile and stationary source PM_{10} and $PM_{2.5}$ emissions associated with operation of the Preferred Action Alternative are not expected to have a significant adverse impact on local air quality.

[68] The combined analysis is limited to PM_{10} and $PM_{2.5}$ as the mobile source microscale analysis considers potential impacts from the traffic associated with the Micron Campus and CO screening passed volume thresholds. As other modeled pollutant concentrations from the Micron Campus did not exceed the NAAQS, PM_{10} and $PM_{2.5}$ are additionally modeled for direct comparison with the PM Hot Spot Analysis.

Table 3.6-16 Micron Campus PM Design Concentrations in 2041 (µg/m^3)

Site	Background Concentration	Modeled Concentration	Design Concentration	NAAQS	Exceed NAAQS
24-hr $PM_{2.5}$					
Site 1	14.2	8.1	22.3	35	No
Site 2		1.5	15.7		No
Site 3		2.2	16.4		No
Annual $PM_{2.5}$					
Site 1	5.6	1.7	7.3	9	No
Site 2		0.3	5.9		No
Site 3		0.4	6.0		No
24-Hour PM_{10}					
Site 1	33	11.5	44.5	150	No
Site 2		2.9	35.9		No
Site 3		4.3	37.3		No

Note: Values may not add up due to rounding.

Table 3.6-17 Site 1 Combined Mobile and Stationary Sources PM Design Concentrations in 2041 (µg/m^3)

Scenario	Background Concentration	Mobile Source Modeled Concentration	Stationary Source Modeled Concentration	Design Concentration	NAAQS	Exceed NAAQS
24-hr $PM_{2.5}$						
No Action	14.2	0.91	8.1	23.2	35	No
Preferred Action		1.16	8.1	23.5		
Traffic Mitigation Scenario A		0.71	8.1	23.0		
Traffic Mitigation Scenario B		0.69	8.1	23.0		
Traffic Mitigation Scenario C		0.69	8.1	23.0		
Annual $PM_{2.5}$						
No Action	5.6	0.39	1.7	7.7	9	No
Preferred Action		0.50	1.7	7.8		
Traffic Mitigation Scenario A		0.30	1.7	7.6		
Traffic Mitigation Scenario B		0.30	1.7	7.6		
Traffic Mitigation Scenario C		0.30	1.7	7.6		
24-hr PM_{10}						
No Action	33	33.76	11.5	78.3	150	No
Preferred Action		40.83	11.5	85.3		
Traffic Mitigation Scenario A		26.43	11.5	70.9		
Traffic Mitigation Scenario B		24.65	11.5	69.2		
Traffic Mitigation Scenario C		24.64	11.5	69.1		

Note: Values may not add up due to rounding.

Table 3.6-18 Site 2 Combined Mobile and Stationary Sources PM Design Concentrations in 2041 (µg/m^3)

Scenario	Background Concentration	Mobile Source Modeled Concentration	Stationary Source Modeled Concentration	Design Concentration	NAAQS	Exceed NAAQS
24-hr $PM_{2.5}$						
No Action	14.2	0.39	1.5	16.1	35	No
Preferred Action		0.59	1.5	16.3		
Traffic Mitigation Scenario A		0.56	1.5	16.3		
Traffic Mitigation Scenario B		0.45	1.5	16.2		
Traffic Mitigation Scenario C		0.47	1.5	16.2		
Annual $PM_{2.5}$						
No Action	5.6	0.15	0.3	6.1	9	No
Preferred Action		0.21	0.3	6.1		
Traffic Mitigation Scenario A		0.21	0.3	6.1		
Traffic Mitigation Scenario B		0.15	0.3	6.1		
Traffic Mitigation Scenario C		0.18	0.3	6.1		
24-hr PM_{10}						
No Action	33	18.93	2.9	54.8	150	No
Preferred Action		20.42	2.9	56.3		
Traffic Mitigation Scenario A		19.89	2.9	55.8		
Traffic Mitigation Scenario B		18.81	2.9	54.7		
Traffic Mitigation Scenario C		18.83	2.9	54.7		

Note: Values may not add up due to rounding.

Table 3.6-19 Site 3 Combined Mobile and Stationary Sources PM Design Concentrations in 2041 (µg/m^3)

Scenario	Background Concentration	Mobile Source Modeled Concentration	Stationary Source Modeled Concentration	Design Concentration	NAAQS	Exceed NAAQS
24-hr $PM_{2.5}$						
No Action	14.2	0.40	2.2	16.8	35	No
Preferred Action		0.40	2.2	16.8		
Traffic Mitigation Scenario A		0.40	2.2	16.8		
Traffic Mitigation Scenario B		0.38	2.2	16.8		
Traffic Mitigation Scenario C		0.37	2.2	16.8		
Annual $PM_{2.5}$						
No Action	5.6	0.14	0.4	6.1	9	No
Preferred Action		0.14	0.4	6.1		
Traffic Mitigation Scenario A		0.14	0.4	6.1		
Traffic Mitigation Scenario B		0.12	0.4	6.1		
Traffic Mitigation Scenario C		0.12	0.4	6.1		
24-hr PM_{10}						
No Action	33	11.02	4.3	48.3	150	No
Preferred Action		11.17	4.3	48.5		
Traffic Mitigation Scenario A		11.09	4.3	48.4		
Traffic Mitigation Scenario B		12.64	4.3	49.9		
Traffic Mitigation Scenario C		11.94	4.3	49.2		

Note: Values may not add up due to rounding.

3.6.4 Growth Inducing Effects

The Proposed Project has the potential to induce growth in population, economic activity, and development in the five-county region, particularly around the Micron Campus. These induced activities could lead to increased emissions from supply chain companies supporting Micron operations, additional transportation, energy consumption, and industrial operations, all of which have the potential to affect regional air quality. The defined five-county region is where the bulk of induced population and development would be expected to occur. This area encompasses the greatest potential for changes in air emissions due to increased traffic, residential and commercial heating, and industrial activities. Although some supply chain-related growth may extend beyond these counties, it is anticipated that the largest concentration of emissions increases would remain within the region.

The region has established air quality monitoring and management systems that would help regulatory entities manage general, including induced, growth in the area to ensure compliance with the NAAQS. A network of stations continuously monitors regional air quality for key pollutants such as $PM_{2.5}$, NO_X, VOCs, and ozone. This real-time data allows for proactive management of air quality, identifying trends and potential non-attainment areas as growth occurs. Additionally, New York's robust air pollution control regulations, which include emissions permitting for stationary sources, help manage the environmental impacts of residential, commercial, and industrial development. Together, these monitoring tools and regulatory frameworks support effective assessment and mitigation of air quality impacts from the project's induced growth in the five-county region.

Projects stemming from induced growth must also comply with Federal and State regulations described in Section 3.6.1, Legal and Regulatory Setting, applicable to air quality permits, emissions thresholds, and industrial activities that contribute to air pollution. Businesses and industrial facilities are required to obtain air permits under New York State regulations, particularly for stationary sources like energy generation facilities or large commercial operations. Any significant new sources of air emissions triggered by induced development would be subject to review for compliance with New York's Air Pollution Control Regulations and permitting requirements under NYSDEC.

The induced population growth from the Proposed Project would likely increase vehicular traffic, which is a source of emissions like NOx and VOCs, both of which contribute to the formation of ozone. Along with vehicular traffic, additional industrial and commercial activity is also expected to result in higher emissions of particulate matter and other pollutants, depending on the nature of the development. Such impacts would be most concentrated in areas experiencing the highest levels of new residential and commercial development, particularly within the five-county region. As discussed in Chapter 4 (Cumulative Effects), a vast majority of the present and reasonably foreseeable actions within Onondaga County include transportation infrastructure improvements and residential and business development. These improvements are anticipated to reduce overall traffic time delays, resulting in a reduction in emissions. Further, over the 16-year construction timeline and operations of the Proposed Project, it is anticipated that more and more people will transition to using EVs as well as bicycle, pedestrian and public transit that would reduce the anticipated emissions associated from increased traffic (see Section 3.11, Transportation and Traffic).

While the region currently meets NAAQS, the increased emissions from growth-related activities could bring certain areas closer to non-attainment for one or more criteria pollutants. However, projects associated with induced growth would have to comply with NAAQS pollution thresholds managed by the USEPA/ NYSDEC under the CAA to protect human health and safety, as well as the environment. Continued state air monitoring and compliance with NAAQS would inform future decision making to prevent adverse health effects from induced growth on air quality, including for vulnerable populations. Accordingly, the potential effects on air quality from induced growth is not anticipated to result in significant adverse growth inducing effects within the five-county region.

3.6.5 Summary of Effects

Construction activities associated with the Proposed Project components would result in temporary adverse, direct impacts to air quality. In addition, based on the regulatory requirements for preconstruction and operational air quality permitting and compliance, the emissions controls inherent to the Proposed Project operations, and the confirmation through atmospheric dispersion modeling that stationary sources associated with the Proposed Project would not cause or contribute to an exceedance of any applicable NAAQS, AGC or SGC, the stationary and mobile source emissions from construction and long-term operation of the Proposed Project would not have a significant adverse effect on air quality. The potential effects on air quality from induced growth anticipated from the Proposed Project would not cause a significant adverse effect within the five-county region.

3.6.6 BMPs and Mitigation Measures

To minimize and avoid impacts to air quality during construction and operations, Micron would implement the BMPs and permitted limitations noted within this Section and in Table 3.6-20.

Table 3.6-20 BMPs for Air Quality

Activity	BMP	Benefits
Construction	BMPs to prevent and minimize particulate matter or dust from becoming airborne. Examples of these practices include, but are not limited to, the following, where practical: Use of water to control dust during demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands; Application of other substrates besides water for dust control as needed; Installation and use of hoods, fans, and fabric filters or similar systems to enclose and vent dusty materials. Adequate containment methods are employed during sandblasting or other operations; and covering of open-bodied trucks transporting materials likely to generate airborne dusts.	Controls the potential for fugitive dust emissions and controls off-site transport of fugitive dust.

Activity	BMP	Benefits
Construction	BMPs to reduce emissions of air pollutants and GHGs from vehicle and equipment engines: Limit idling of vehicle and equipment engines to no more than 5 minutes when not in use. Use construction equipment equipped with Tier 4 engines. Use cleaner burning fuel (renewable diesel, natural gas) or electric vehicles and equipment when feasible.	Reduces air pollutant and GHG emissions.
Construction; Operations	Chemicals are properly contained, including, as appropriate, using closures, closed systems, or lids to prevent volatilization and use of automation for dispensing.	Controls the potential for emissions of volatile chemicals, minimizing the potential for worker or public exposure.
Operations	Operate and maintain air pollution control devices according to permit conditions and considering vendor recommendations. This includes creating a preventive maintenance program considering vendor specifications.	Ensures compliance with regulatory permitting requirements and reduces ambient air quality emissions, minimizing the potential for worker or public exposure.
Construction	Use only low sulfur diesel fuel in relevant equipment and emergency generators.	Minimizes the ambient emissions of sulfur compounds.

With these avoidance and minimization efforts and compliance with all applicable Federal and State regulations as well as permit conditions mandated by NYSDEC, the Proposed Project's direct and indirect effects on air quality would not result in significant adverse environmental impacts warranting mitigation.

3.7 GREENHOUSE GAS EMISSIONS, CLIMATE CHANGE, AND CLIMATE RESILIENCY

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative relating to GHG emissions and climate change. The Proposed Project would generate GHG emissions during construction and operation activities, including emissions associated with vehicular traffic.

Climate change is an inherently cumulative effect caused primarily by releases of GHGs from human activities, including fossil fuel combustion and industrial activity (Intergovernmental Panel on Climate Change (IPCC), 2021). GHGs are compounds in the atmosphere that absorb and emit radiation, effectively trapping heat (longwave radiation) and causing what is known as the greenhouse effect. The greenhouse effect causes the Earth's atmosphere to warm and thereby creates changes in the planet's climate systems. The primary GHGs emitted from human activities that cause climate change are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and F-GHGs, which include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3), and other compounds. Many industries, including semiconductor manufacturing use and emit F-GHGs, which have the ability to trap thousands of times as much heat as CO_2 on a pound-for-pound basis. In addition, PFCs, SF_6, and NF_3 remain in the atmosphere for thousands of years. For example, carbon tetrafluoride (CF_4) has an atmospheric lifetime of 50,000 years; hexafluoroethane has an average atmospheric lifetime of 10,000 years; and octafluorocyclobutane and SF_6 remain in the atmosphere 3,000 and 3,200 years respectively. Consequently, minimizing releases of GHGs is key to reducing the effects of climate change.

Rising GHG levels are causing corresponding increases in average global temperatures and destabilization of global climate systems, which is increasing the frequency and severity of natural disasters including storms, flooding, and wildfires. The ability of the Proposed Project and surrounding area to withstand the effects of these climatic changes and natural disasters is referred to as "climate resiliency." Because climate change results from the accumulation of GHG emissions over time, its effects are cumulative in nature. This means that the effects of climate change are driven by the combined emissions from various sources across the globe, rather than from any single event or emission. Each contribution, whether large or small, adds to the overall warming of the planet. As such, when assessing the impact of a specific project, it is essential to consider how its emissions across alternative scenarios (including a scenario with no project) fit in relevant context into broader global and regional emissions, its contribution to the ongoing accumulation of GHGs in the atmosphere, and how the project and alternatives may impact climate commitments and goals. This approach allows an agency to present the environmental and public health effects of a proposed action in clear terms and with sufficient information to make a reasoned choice among the alternatives and consider appropriate mitigation measures. This section describes the environmental setting[69] of the Proposed Project, and assesses, to the extent practicable, GHG emissions from the semiconductor industry broadly and, more specifically, from the Proposed Project alternatives, and considerations of ongoing climate change effects.

[69] The "environmental setting" is synonymous with the "existing conditions" or "affected environment" of a NEPA or New York SEQRA analysis.

3.7.1 Legal and Regulatory Setting

This section lists the Federal and State laws and regulations that would apply to GHGs that may be emitted by the Proposed Project.

3.7.1.1 International Treaties and the International Panel on Climate Change

The IPCC is an independent body founded by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) tasked with reviewing scientific literature and issuing climate assessments to inform global climate change policy. The IPCC prepares these assessment reports to discuss its knowledge on climate change, causes, potential impacts, and response options. The IPCC also publishes Special Reports covering assessments of specific issues and Methodology Reports that provide practical guidelines for the preparation of GHG inventories.

3.7.1.2 Federal Permitting & Regulations

Clean Air Act (CAA) – Prevention of Significant Deterioration (PSD) Program

The CAA is a federal law that regulates air emissions from stationary and mobile sources. The CAA authorizes USEPA to establish primary and secondary NAAQS for the following seven criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

USEPA has developed a classification system for geographical regions that have atmospheric concentrations of pollutants above or below the thresholds as established by NAAQS. Using this classification system, USEPA designates whole or partial counties as attainment (i.e., air quality is meeting applicable NAAQS), nonattainment, maintenance, or unclassifiable. New stationary sources that are in areas designated as attainment and that emit more than 250 tpy of a criteria pollutant are required by the PSD program to undergo an air permitting process. This additional step functions to prevent significant degradation of air quality from new sources. In relation to GHGs, the USEPA regulates GHGs under the CAA if a new major source is subject to PSD requirements and potential emissions of GHGs exceed 75,000 tpy CO_2 equivalent (CO_2e), based on each constituent's global warming potential over a 100-year horizon (GWP100), per EPA's Tailoring Rule (see 75 FR 31514 (Jun. 3, 2010)).

National Highway Traffic Safety Administration

In coordination with the National Highway Traffic Safety Administration, USEPA regulates GHG emissions from newly manufactured on-road vehicles. In December 2021, USEPA finalized revised national GHG emissions standards for passenger cars and light trucks for Model Years 2023-2026 (see 40 CFR Parts 86 and 600 (Table 3.7-1)).

Table 3.7-1 National GHG Emissions Standards for Passenger Cars and Light Trucks for Model Years 2023-2026

Vehicle	Standard	2023	2024	2025	2026
Passenger Cars	CO_2 (g/mi)	166	158	149	132
	CO_2e (mpg)	54	56	60	67
Light Trucks	CO_2 (g/mi)	234	222	207	187
	CO_2e (mpg)	38	40	43	48

Greenhouse Gas Reporting Program

USEPA's (GHGRP) was created to provide the U.S. reporting framework for reporting to the IPCC. On October 30, 2009, USEPA issued the Mandatory Greenhouse Gas Reporting Rule, 40 CFR Part 98, which established mandatory GHG reporting requirements for owners and operators of large GHG emission sources, fuel and industrial gas suppliers, and CO_2 injection sites in the U.S. Subparts C and I of the rule include reporting requirements for Semiconductors and Related Devices, North American Industry Classification System (NAICS) Code 334413. Micron would be required to report its GHG emissions under Subpart I for Electronics Manufacturing and Subpart C for General Stationary Combustion sources under the rule.[70] Under Subpart I, as stated in 40 CFR 98.92, Micron will report emissions of F-GHGs (as defined in § 98.6) and fluorinated heat transfer fluids (F-HTFs, as defined in § 98.98), as well as CO_2, CH_4, and N_2O combustion emissions from each stationary combustion unit. The F-GHGs and F-HTFs that are emitted from electronics manufacturing production processes include, but are not limited to, those listed in Table I-2 to Subpart I. USEPA requires that GHG emissions be reported in metric tons (MT) of CO_2e on a GWP100 basis (USEPA, 2025b). The GWP100 metric is consistent with what the IPCC has adopted for reporting purposes. Additional details on data reporting and recordkeeping requirements are included in 40 CFR 98 Subparts I and C.

3.7.1.3 State Laws & Regulations

The Climate Leadership and Community Protection Act

In 2019, the Climate Leadership and Community Protection Act (CLCPA) was signed into law to reduce New York State's GHG emissions and achieve net-zero emissions by 2050 (ch. 106, L. 2019). To meet this goal, the CLCPA requires New York State to acquire 70 percent of its electricity from renewable sources by 2030 and achieve 100 percent zero-emission electricity by 2040.

Pursuant to Section 7(2) of the CLCPA, New York State agencies are required to consider whether administrative decisions, such as grant approvals or permitting actions are inconsistent or will interfere with the attainment of the statewide GHG emission limits established by the CLCPA.

[70] Micron's aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility would be 30 MMBtu/hr or greater, and the facility would emit greater than 25,000 metric tons CO_2e or more per year in combined emissions from all stationary fuel combustion sources.

In furtherance of Section 7(2), NYSDEC's Department of Air Resources (DAR) Program Policy 21 (DAR-21) outlines the Section 7(2) analyses required for air pollution control permit applications.[71]

Under DAR-21, air permit applicants must calculate proposed project GHG emissions and, in certain cases, evaluate alternatives and mitigation measures. Additionally, according to DAR-21, a decision may be deemed inconsistent with New York State's ability to meet the statewide emission limits promulgated in 6 NYCRR Part 496.4 if it "creates or enables a significant new source of GHG emissions." If the NYSDEC finds a decision inconsistent with the attainment of statewide GHG emissions limits, it may issue a statement of justification for the application that address potential alternatives and mitigations considered, feasibility of implementation of these alternatives and mitigations, benefits of the project, and harm associated in the absence of the project.

CLCPA Section 7(3) requires applicants to assess whether administrative decisions prioritize the reduction of GHG and co-pollutant emissions (i.e., HAPs emitted from a GHG source) within disadvantaged communities (DACs),and avoid disproportionately burdening DACs (New York State Climate Justice Working Group, 2019). In accordance with NYSDEC Program Policy 24-1, Permitting and Disadvantaged Communities (Policy DEP 24-1), permit applicants must evaluate proximity to DACs to determine if a disproportionate burden is reported and enhanced public participation may be required (NYSDEC, 2024f). The Proposed Project would be located in the Town of Clay, New York, at the WPCP, which is not designated as a DAC. The closest DAC to the Proposed Project is five miles south in the North Syracuse area. Therefore, the Proposed Project is not likely to disproportionately burden or otherwise impact a DAC and is not subject to the requirements of policy DEP 24-1. Documentation of such analysis was submitted to NYSDEC. See Appendix J-2. Further discussion of potential impacts to any DACs is presented in Section 3.16 (Environmental Justice).

Finally, Section 17-b of the Community Risk and Resiliency Act (CRRA) requires certain permit applicants to consider the future physical risks that climate change poses to their proposed projects, and whether their projects significantly affect the climate resilience of public infrastructure or services, natural resources, private property, or natural resources in the vicinity of the project (see Section 3.7.4, Climate Change and Resilience Planning). NYSDEC Commissioner Policy (CP)-49 further establishes the policy directives of the CRRA, as amended by the CLCPA, by directing NYSDEC personnel to incorporate climate change considerations into aspects of its activities, including permit reviews.

Regulations

NYSDEC regulations establish statewide emissions limits for 2030 and 2050 as 60 percent and 15 percent, respectively, of the estimated 1990 statewide GHG emissions using the IPCC 20-year global warming potential (GWP20) (6 NYCRR Part 496). These limits are calculated in millions of metric tons (mmt) of CO_2e and amount to statewide limits of 245.87 mmt/year CO_2e

[71] A copy of Micron's draft CLCPA analysis is attached hereto as Exhibit J-2. While this analysis may change as part of NYSDEC's review of Micron's pending permit applications and was prepared for purposes of compliance with the CLCPA, it is appended to this EIS as additional background on the Micron Campus's potential GHG emissions and impact on climate change.

and 61.47 mmt/year CO_2e for 2030 and 2050, respectively. These GHG emissions limits are roughly equivalent to the average annual GHG emissions of approximately 53 million and 13 million passenger cars per year, respectively (USEPA, 2024g).

3.7.1.4 Greenhouse Gas Global Warming Potentials

GHGs trap some of the Earth's outgoing energy, thus retaining heat in the atmosphere. GHGs are reported in CO_2e, which is a combined measure of GHG emissions weighted according to the Global Warming Potential of each gas, relative to CO_2. IPCC GWP20 and GWP100 factors as referenced in 6 NYCRR 496.5 and 40 CFR 98, along with several additional factors for GHGs of interest, are included in Table 3.7-2. CO_2 is the largest component of global GHG emissions.

Table 3.7-2 Greenhouse Gas Global Warming Potentials

CAS #	Chemical Name	Alternate Name(s)	Molecular Formula	GWP20	GWP100
124-38-9	Carbon dioxide	--	CO_2	1	1
74-82-8	Methane	--	CH_4	84	28
10024-97-2	Nitrous oxide	--	N_2O	264	265
75-10-5	Difluoromethane	HFC-32	CH_2F_2	2,430	677
593-53-3	Fluoromethane	HFC-41	CH_3F	427	116
75-73-0	Tetrafluoromethane	PFC-14	CF_4	4,880	6,630
76-16-4	Hexafluoroethane	PFC-116	C_2F_6	8,210	11,100
75-46-7	Trifluoromethane	HFC-23	CHF_3	10,800	12,400
115-25-3	Octafluorocyclobutane	PFC-318	C_4F_8	7,110	9,540
685-63-2	Hexafluorobutadiene	--	C_4F_6	1	1
7783-54-2	Nitrogen trifluoride	--	NF_3	12,800	16,100
2551-62-4	Sulfur hexafluoride	--	SF_6	17,500	23,500

1. GWP 20-yr values based on the IPCC Fifth Assessment Report (AR5) when available. Value for hexafluorobutadiene (listed as perfluorobuta-1,3-diene) is listed as "<1" and is conservatively assumed to be equal to 1. Values presented in IPCC AR5 align with values encoded in 6 CRR-NY 496. For compounds not listed in AR5, GWP 20-yr values based on the IPCC Sixth Assessment Report (AR6) were used.
2. GWP-100-yr values based on IPCC AR5. Value for hexafluorobutadiene (listed as perfluorobuta-1,3-diene) is listed as "<1" and is conservatively assumed to be equal to 1. For compounds not listed in AR5, GWP 100-yr values based on IPCC AR6 were used.
3. HTF GWPs are based on guidance provided by the IPCC in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 3, Chapter 6, Table 6.5. 20-yr GWP values are assumed to equal 100-yr GWP values.

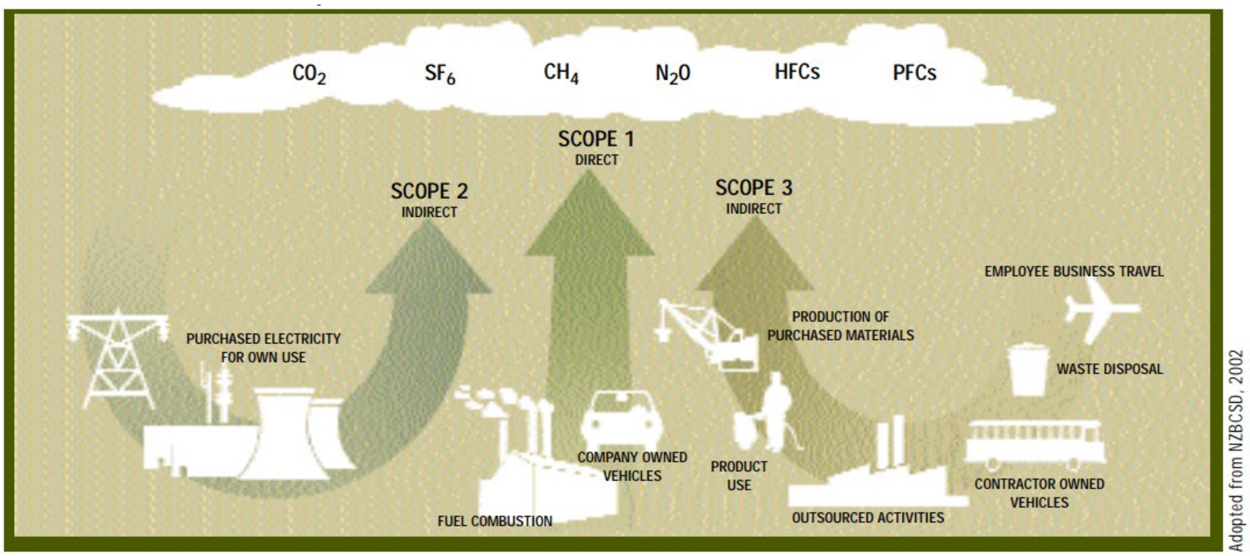
3.7.2 Affected Environment

Climate change is the result of increased global accumulation of GHGs and is a global phenomenon with disparate regional effects across the planet. For the purposes of this analysis, and to help inform agency decision making, the affected environmental analysis includes descriptions of current GHG emissions estimates by generator type and current climate conditions.

3.7.2.1 Greenhouse Gas Emissions

There are three categories of GHG emissions related to the Proposed Project: (1) Scope 1, direct emissions, which arise from the manufacturing process and stationary combustion that supports the manufacturing process; (2) Scope 2, indirect emissions, which arise from purchase of offsite fossil fuel generated electricity; and (3) Scope 3, indirect emissions, which result from the activities upstream and downstream of Micron's operations.[72] While mobile source GHG emissions (i.e., road and non-road vehicles for construction, commute, deliveries, and transport) would typically be considered part of Micron's Scope 3 emissions, they are addressed as a separate category because this EIS includes an analysis of all regional mobile source traffic—and resulting emissions—that would be affected by the Proposed Project. Figure 3.7-1 depicts the emissions scopes that are analyzed in connection with the Proposed Project.

Figure 3.7-1 Overview of GHG Emissions Scopes across Value Chain



Source: World Resources Institute & World Business Council for Sustainable Development, 2004 (adapted from NZBCSD, 2002)

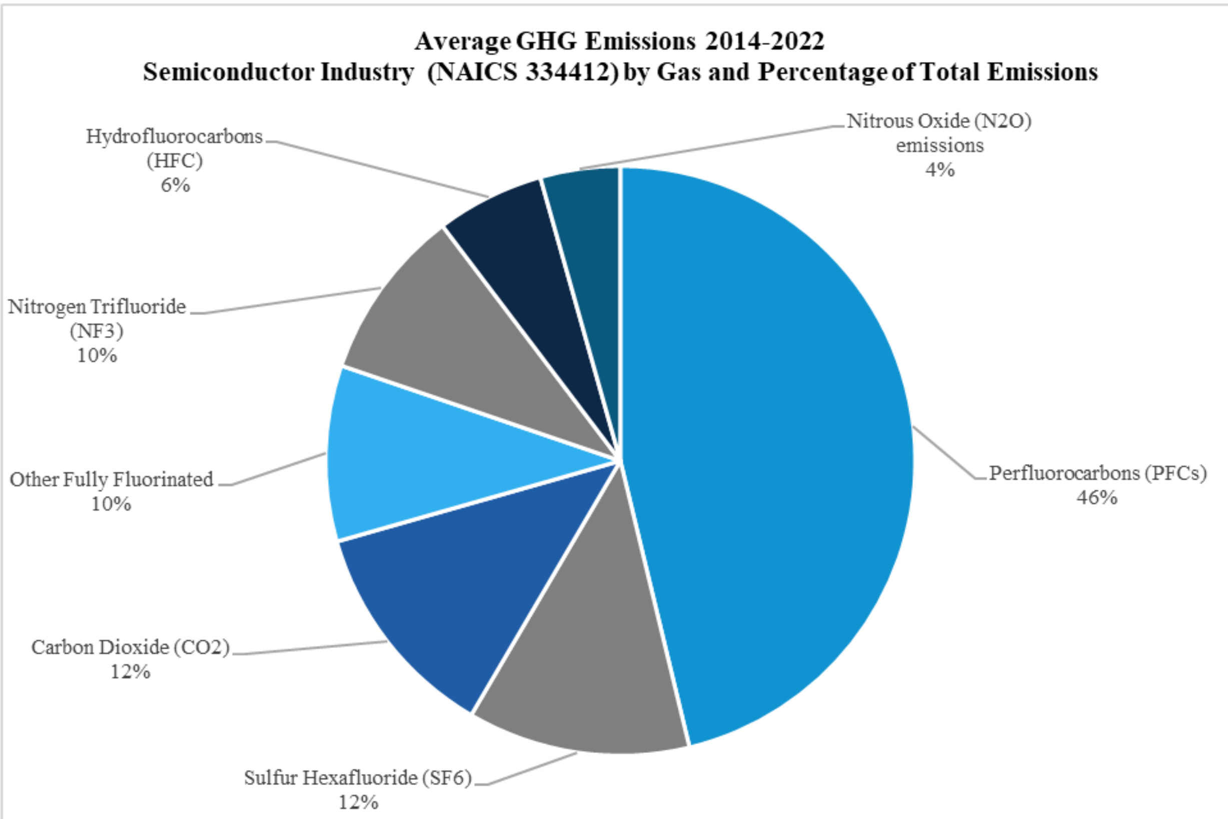
Scope 1: Direct GHG Emissions

Semiconductor manufacturers use a variety of high GWP gases to create circuitry patterns on silicon wafers along with chillers for certain process tools to prevent overheating. Examples of widely used high GWP fluorinated compounds including PFCs (e.g., CF_4, C_2F_6, C_3F_8, and c-C_4F_8), HFCs (CHF_3, CH_3F and CH_2F_2), NF_3, and SF_6. Semiconductor manufacturing processes also use fluorinated heat transfer fluids and N_2O. Some GHG emissions are also generated as the result of onsite fossil fuel power generation. Specific process GHG emissions vary across facilities depending on their specific process operations and present potential for some of these GHGs to be emitted to the atmosphere unreacted.

[72] Scope 1 emissions are analogous to direct emissions calculations required by DAR-21. Scope 2 emissions are analogous to indirect upstream emissions attributable to offsite fossil fuel generated electricity as required by DAR-21. Scope 3 emissions are analogous to the downstream and upstream calculations as required by DAR-21.

USEPA's GHGRP data for 2023 indicates that the total U.S. direct GHG emissions were 2.37 billion metric tons of CO_2e (USEPA, 2024h). Analysis of the GHGRP data from 2014 to 2022 on direct emissions from the manufacturing process from NAICS 334413 Semiconductor and Related Device Manufacturing found that, on average, PFCs constitute 46 percent of the reported emissions, followed by SF_6 and CO_2, both at 12%. NF_3 and other fully fluorinated compounds constitute 10 percent of the NAICS 334413 total. HFCs and N_2O make up 6 percent and 4 percent of the reported emissions, respectively (see Figure 3.7-2).

Figure 3.7-2 Average Scope 1 (Direct) GHG Emissions 2014-2022 Semiconductor Industry (NAICS 334412) by Gas and Percentage of Total Emissions

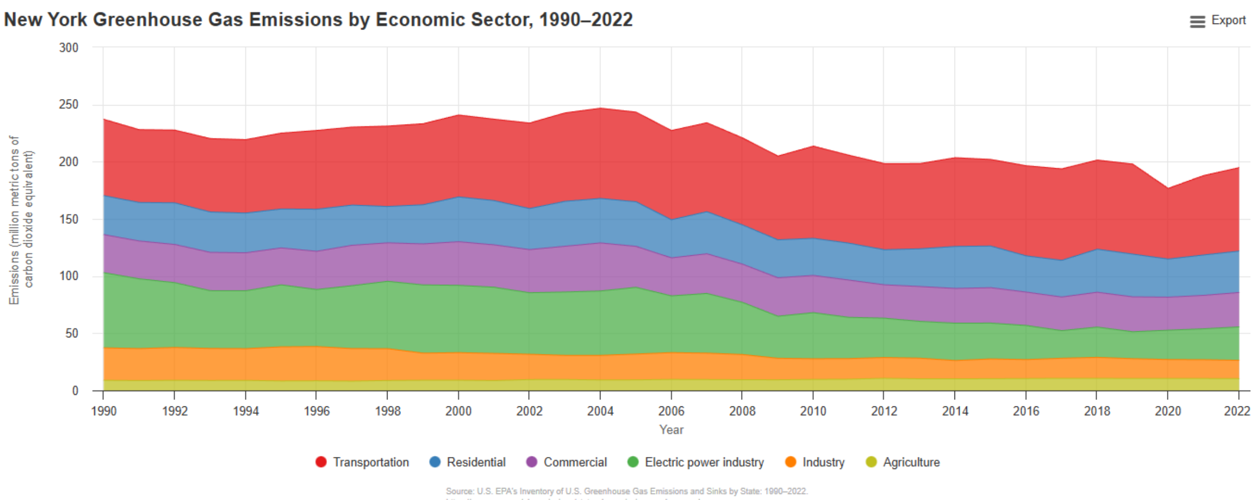


For semiconductor manufacturing facilities, thermal oxidation is used in POU control devices to control F-GHG emissions by thermally treating exhaust streams from process tools that utilize GHGs. These are often used on plasma etch tools that etch metal substrates. The POU control devices also use a wet scrubbing system to control the resultant acid gases. Other semiconductor process tools often include process equipment exhaust conditioners (PEECs) as required safety equipment to manage process gases that are pyrophoric, flammable, toxic, or incompatible with other process gases or ductwork. PEECs may incidentally manage GHG emissions that are comingled with these hazardous materials. Chapter 6 of the IPCC 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories establishes default destruction and removal efficiencies (DREs) for multiple process tools (Beu et al., 2019). Centralized regenerative catalytic systems (RCS) may be employed to combine exhausts from several plasma etch process tools rather than on an individual tool level. Process chemical substitution in semiconductor manufacturing affecting direct use of F-GHGs is the subject of ongoing research within the industry to utilize alternative methods or process chemicals with a lower GWP. Combustion of fuels to support operation of boilers, Rotary Concentrator Thermal Oxidizers (RCTOs), tool-level thermal oxidation, and generators would additionally contribute to GHG emissions.

GHG Emissions Summaries for NY State and NY Industrial Sector

Per USEPA's most recent annual Inventory of U.S. Greenhouse Gas Emissions and Sinks and Inventory of U.S. Greenhouse Gas Emissions and Sinks by State (Figure 3.7-3), statewide GHG emissions in New York State have declined by 18 percent from 237.1 mmt CO_2e to 194.8 mmt CO_2e from 1990 to 2022 calculated on a GWP100 basis (USEPA, 2023c). From the same analysis, New York State industrial sector GHG emissions have declined by 44 percent from 28.4 mmt CO_2e to 16.0 mmt CO_2e.

Figure 3.7-3 New York GHG Emissions by Economic Sector, 1990-2022, in MMT CO_2e [1]



Source: (USEPA, 2023c)

Per the analysis completed for the New York State 2024 Statewide GHG Emissions Report, 2024 statewide gross GHG emissions were 371.08 mmt CO_2e using the CLCPA accounting GWP20 methodology (NYSDEC, 2024g). These emissions were 9.3 percent lower than total gross emissions in 1990 and 9.4 percent below the 1990 statewide emission limit baseline promulgated at 6 NYCRR Part 496.

Scopes 2 and 3: Indirect GHG Emissions

Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling (USEPA, 2024i). Scope 3 emissions are indirect emissions generally resulting from the activities upstream and downstream of a facility's operations from assets not owned or controlled by the facility or organization (USEPA, 2024j). As described in NIST-CPO's Final Programmatic EA for Modernization and Expansion of Existing Semiconductor Fabrication Facilities, Scope 2 emissions from offsite fossil fuel combustion to generate electricity account for almost half of total GHG emissions from the semiconductor manufacturing sector (U.S. Department of Commerce NIST-CPO 2024). Scope 3 emissions can vary significantly depending on upstream and downstream activities from a facility, including upstream supply chain activities and end product use.

Mobile Source Emissions

As shown in NYSDEC's 2024 Summary Report of the NYS Statewide GHG Emissions Report, the transportation sector is traditionally one of the largest sources of GHG emissions in New York State, accounting for 26 percent of statewide total GHG emissions, primarily due to fuel combustion and emissions associated with production and transport of fuels into New York State (NYSDEC, 2024g).

The SMTC evaluates mobile source GHG emissions as part of its Long-Range Transportation Plan (LRTP) planning process. The SMTC's 2020 Update to the 2050 LRTP presents estimates of existing (2017) GHG emissions within the SMTC planning area. In 2017, GHG emissions were estimated to be 1,946,000 metric tons per year (SMTC, 2020).

Non-road construction equipment emissions are not provided as a separate category in the New York Statewide GHG Emission Inventory Report or in the SMTC LRTP. Non-road construction category emissions are available only for gasoline non-road construction equipment in the Statewide Greenhouse Gas Emissions supporting dataset. To estimate NY statewide non-road diesel construction emissions, we have included the non-road "other" category as representing non-road diesel construction equipment emissions. In 2022, using AR5 20-yr GWP, non-road gasoline construction equipment summed with nonroad diesel "other" category emissions were 527,960 metric tons CO_2e from fuel combustion and 91,852 MT CO_2e from imported fuel. For AR5 100-yr GWP, emissions for these categories in 2022 were 521,817 MT CO_2e for fuel combustion and 69,697 MT CO_2e for imported fuel.

3.7.2.2 Meteorology and Climate

The Proposed Project is located within the humid continental (Köppen Dfb) zone (NOAA, 2023a). The climate is characterized by warm summers and cold winters. January is the coldest month of the year, with average normal highs around 32°F and normal average lows around 17°F. Temperatures peak in July, with normal average highs approaching 82°F and average lows around 60°F. The average annual rainfall is 39.88 inches. Precipitation is relatively evenly distributed throughout the year, with the highest levels occurring in October, July, and August. Average precipitation for summer is 11.12 inches and 8.32 inches in winter. Table 3.7-3 summarizes the 30-year Climate Normals (1991-2020) from NOAA National Centers for Environmental Information (NCEI), at the USW00014771 Station at the Syracuse Hancock International Airport, which is located approximately 9 miles southeast of the Proposed Project (NOAA, 2021).

Table 3.7-3 30-year Climate Normals at the USW00014771 Syracuse Hancock International Airport Station[1]

Month	Minimum Temperature (°F)	Maximum Temperature (°F)	Average Temperature (°F)	Precipitation (inches)	Snowfall (inches)
January	16.5	31.7	24.1	2.58	34.00
February	17.5	33.6	25.5	2.46	30.30
March	25.2	42.4	33.8	3.04	19.80
April	36.2	56.4	46.3	3.48	3.00
May	47.3	69.2	58.2	3.42	0.10
June	56.7	77.3	67.0	3.56	0.00
July	62.0	81.7	71.8	3.86	0.00
August	60.4	80.3	70.4	3.70	0.00
September	52.7	73.1	62.9	3.38	0.00
October	42.4	60.1	51.3	3.89	0.20
November	32.7	48.3	40.5	3.23	9.80
December	23.7	37.1	30.4	3.28	30.60

Source: NOAA (2021)

According to the New York State Climate Impacts Assessment (NYSCIA), from 1901 to 2022, average temperatures in New York State increased by almost 2.6°F. All of the warmest 10-year periods in recorded history have occurred since 2000 (Lamie et al., 2024). Across the State, annual average temperatures are projected to increase by 2.5–4.4°F by the 2030s, 3.8–6.7°F by the 2050s, and 5.1–10.9°F by the 2080s, depending on global GHG emission rates (Columbia University, 2023).[73] With its proximity to the Proposed Project, annual average temperatures in the St. Lawrence Valley, Champlain Valley, Adirondacks, and Great Lakes assessment regions are projected to increase by 4.6°F–6.7°F by the 2050s and 6.1°F–10.9°F by the 2080s, compared with the 1981–2010 baselines (Lamie et al., 2024).

The NYSCIA additionally shows that from 1981 to 2010 Syracuse experienced approximately 10 days per year with temperatures above 90°F, with future projections at approximately 20 days per year above 90°F in the 2030s, 25 days per year in the 2050s, and 55 days per year in the 2080s (Lamie et al., 2024). Heat wave frequency and duration are projected to increase. The number of days with a heat index greater than 85°F, the number of days with a heat index greater than 95°F, and the maximum heat index are expected to increase substantially across all regions of New York State. Syracuse, with a baseline maximum heat index of 96°F from

[73] Results described are the middle range (25th to 75th percentile of outcomes) across 35 global climate models (GCMs) and 2 Shared Socioeconomic Pathways (SSPs) across all 12 regions of New York State in a study conducted by Columbia University in its New York State Climate Change Projections Methodology Report: Technical Document of the New York State Climate Impacts Assessment (Columbia University, 2023).

1981 to 2010, is projected to experience increases in the heat index to 102°F–107°F in the 2030s, 107°F –112°F in the 2050s, and 110°F–124°F in the 2080s (Columbia University, 2023).[74]

Areas of New York State downwind of Lake Erie and Lake Ontario and those near the coast received an average of approximately 46 inches per year of precipitation over a baseline of 1981 to 2010, while the west-central part of the state received 35 inches per year in the same period (Lamie et al., 2024). Annual precipitation has increased across the state at a rate of 0.47 inches per decade from 1901 to 2022 (NOAA, 2023b). Compared to this baseline, annual precipitation in these regions is anticipated to increase 2 – 4 percent by the 2030s, 5 – 6 percent by the 2050s, and 9 – 10 percent by the 2080s (Columbia University, 2023).[75] Projections additionally show frequency and intensity of heavy rain and snowstorms are likely to increase as climate warms. While multiyear droughts are not anticipated to increase, shorter-term seasonal droughts lasting from weeks to months could increase.

Water bodies such as the Atlantic Ocean, the Great Lakes, and Lake Champlain, cause moderating effects on the coastal areas, northwestern, and northeast parts of New York, respectively. Despite these moderating effects, the region is still susceptible to extreme events such as floods, heat waves, nor'easters and snow and ice storms. Since 1970, the annual statewide temperature in New York has risen by approximately 3°F, with warming concentrated in the winter and spring seasons (NYSDEC, 2024h). In these seasons, temperature rises are more influenced by the increased frequency of warm nights rather than the occurrence of particularly hot days.

Moreover, New York State is expected to experience changes in precipitation frequency as well as increases in the magnitude and frequency of heavy precipitation events in the winter and spring seasons, potentially placing stress on existing transportation and water resource infrastructure.

3.7.2.3 Climate Change and Resiliency Planning

Several reports issued by NYSDEC indicate that a variety of climate change effects are occurring across the northeastern U.S. and New York State. Several key factors, including extreme temperature, precipitation, sea level rise, and extreme storms, have been identified as causing increasingly harmful impacts to people, plants, and wildlife (NYSDEC, 2024h). The NYSCIA also projects increased frequency and intensity of heavy rainstorms leading to flooding and other extreme events across the State, including increasing intensity of rainfall and stronger winds capable of damage (Lamie et al., 2024).

According to NOAA NCEI's Billion-Dollar Weather and Climate Disasters database, New York State has experienced 95 confirmed weather/climate disaster events with losses exceeding $1 billion each since 1980. Of the disasters, 48 were severe storms, 21 were winter storms, 16 were tropical cyclones, and the remaining were drought, flooding, and freezing events. In 2024, of the 10 disaster events that occurred in New York State exceeding $1 billion, seven were severe storms

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[74] Results show the 25th and 75th percentile modeled results from a blend of the SSP2-4.5 and SSP5-8.5 greenhouse gas emission scenarios from the GCM CMIP6.

[75] Results are based on the median (50th percentile) modeled results from a blend of the SSP2-4.5 and SSP5-5.8 greenhouse gas emissions scenarios from the GCM CMIP6.

accounting for $18.8B, two were tropical cyclones accounting for $9.9B, and one was a winter storm accounting for $2.0B in damages and costs (NOAA, 2025).

In comparing differences in historical trends, over the last five years (2020-2024), there were on average 16 days between U.S. billion-dollar disaster events compared to 82 days in the 1980s, accounting for inflation (NOAA, 2025). Shorter time intervals between disasters can mean less time and fewer resources available to respond to, recover from, and prepare for future disaster events.

Table 3.7-4 depicts a breakdown of climate-related risk and vulnerability in Onondaga County, New York State, and the U.S. The National Risk Index (NRI) is used to calculate the weather and climate risk values, which represent a community's relative risk to natural hazards. These values are calculated based on factors such as frequency of these events, potential damage to buildings and crops, population exposure, and the community's ability to recover from such impacts. Based on these data, Onondaga County demonstrates an elevated risk for droughts, flooding, freezing temperatures, severe storms, tropical cyclones, and winter storms when compared to all of New York State. Such risk and vulnerability data can be used by communities to plan future upgrades to existing infrastructure or for new infrastructure design to build climate resilience for the future.

Table 3.7-4 Risk and Vulnerability[1]

Data Type	Onondaga County	New York	U.S.
Weather and Climate Risk			
Drought Risk	9.39	7.99	11.61
Flooding Risk	15.05	13.79	9.13
Freeze Risk	27.05	21.44	15.72
Severe Storm Risk	28.71	19.47	16.99
Tropical Cyclone Risk	6.37	4.87	4.36
Wildfire Risk	2.19	2.25	6.30
Winter Storm Risk	19.92	13.77	13.71
Weather and Climate Combined Risk	17.56	14.20	13.30
Socioeconomic Vulnerability			
Age <18	21.60%	20.34%	22.36%
Age 65+	16.20%	17.62%	18.37%
Disabled Population	12.60%	14.04%	15.92%
Limited English	1.80%	2.19%	1.70%
Minority Population	22.90%	18.86%	23.51%
Mobile Homes	1.00%	7.43%	12.93%

No High School Diploma	9.30%	11.02%	13.41%
Below Poverty	14.60%	13.60%	15.60%
Single Parent Household	10.10%	8.57%	8.32%
No Vehicle	12.10%	12.26%	6.35%
Veterans	6.98%	7.69%	8.91%

Source: NOAA (2025)

3.7.3 Environmental Consequences

3.7.3.1 No Action Alternative

GHG Emissions

Scope 1, Scope 2, and Scope 3

For purposes of this analysis, the No Action Alternative conservatively assumes that the WPCP is not developed and remains in its current state until OCIDA identifies another similar project to develop the site. Under the No Action Alternative, the Proposed Project and Connected Actions would not occur. As a result, there would be no changes in stationary source Scope 1 and associated Scope 2 and 3 GHG emissions. No significant adverse effects are anticipated under the No Action Alternative.

Mobile Sources

The mobile source GHG analysis is a regional analysis that includes the same roadway link network and traffic data developed for the No Action Alternative in Section 3.6, Air Quality analysis (see Figure 3.6-1).

This analysis includes the GHG emissions from traffic on the roadway network from projected future population growth in the area unrelated to the Proposed Project. The mobile source GHG analysis was performed in accordance with methodologies presented in the NYSDOT's Transportation Environmental Manual (TEM), updated in March 2020, which specifies use of the Motor Vehicle Emissions Simulator (MOVES)4 emission factor model (NYSDOT, 2020). The MOVES4 model provides emission, activity, and fuel consumption data that are used in emission inventory development. The same comparison years are also used as a baseline, with 2027 and 2031 for construction and operation of the Micron Campus and 2041 for full build out operational traffic.

A GHG emission estimate associated with upstream fuel production and transport into New York State for fuel used during mobile source operations from worker traffic based on the 2024 New York State GHG Emission Inventory Report appendix is shown in the lower half of Table 3.7-5. The MOVES4 model runs also provided estimates of energy consumption associated with vehicles during the traffic evaluation years of 2027, 2031, and 2041 for the No Action Alternative. These upstream and fuel transport emissions were then added to the regional mobile source emissions. The regional mobile source GHG emission burden traffic analysis is presented in Table 3.7-5.

Table 3.7-5 Regional Mobile Source Vehicle Miles Traveled (VMT) and GHG Emissions – No Action

		2027	**2031**	**2041**
Annual Vehicle Miles Travelled (VMT)		3,042,335,865	3,161,373,598	3,497,868,635
Regional Mobile Source Emissions (metric tons per year)				
CO_2		964,519	889,833	793,966
CH_4		40	36	32
N_2O		19	19	19
Total GHG Emissions (CO_2e)	20-Year GWP[1]	972,906	897,831	801,619
	100-Year GWP[1]	970,704	895,814	799,873
Upstream Fuel Production and Transport (metric tons per year)				
CO_2		204,926	196,159	188,712
CH_4		1,545	1,479	1,422
N_2O		4	3	3
Total GHG Emissions (CO_2e) - 20-Year GWP[2]		335,898	321,528	309,322
Regional Mobile Source Emissions + Upstream Fuel Production and Transport (metric tons per year)				
Total GHG *Emissions (CO_2e) - 20-Year GWP*[2]		1,308,804	1,219,359	1,110,941

1. GWP20 and GWP100 from IPCC AR5. Values presented in IPCC AR5 align with values encoded in 6 CRR-NY 496.
2. The gasoline upstream fuel production and transport factors from the 2024 New York State GHG Emission Inventory Report are only available for 20-year GWP; as such, upstream totals for 100-year GWP cannot be calculated.

Climate Change and Climate Resiliency

The No Action Alternative assumes that the WPCP would not be developed and would remain in its current state until OCIDA identifies another similar project to develop the site. As a result, there would be no new sources of GHG emissions due to the Proposed Project and Connected Actions and thus no effects on Climate Change. Climate change likely would continue to affect the region over time as described above, and the climate resiliency of the area surrounding the WPCP and Connected Actions would not be affected by the Proposed Project or Connected Actions.

3.7.3.2 Preferred Action Alternative

GHG Emissions

Micron will manufacture semiconductors on silicon wafers. To remain competitive, Micron must constantly adapt to changing product mix, architecture, and functionality. The nature and rapid pace of constant technological change affects the type, number, and configuration of semiconductor process equipment required to fabricate devices (also known as “tools” or “process tools” in the industry and throughout the Micron air permit application and appendices). The following analysis is based on the reasonably foreseeable direct and indirect emissions generation and regulatory analysis based on the Preferred Action Alternative.

Potential GHG impacts from the Proposed Project as defined by the Preferred Action Alternative include stationary source emissions (Scope 1 – Direct), purchased energy (Scope 2 – Indirect), and upstream and downstream emissions (Scope 3 – Indirect), which include mobile source emissions (i.e., vehicles on roadways) and construction emissions. The emissions resulting from Scope 1 and Scope 2 sources represent the vast majority of emissions associated with the Proposed Project.

Construction Effects

Construction activities evaluated include construction of the Micron Campus, the Childcare Site, and the Rail Spur Site. While mobile source emissions due to construction activities on these sites would traditionally be considered indirect upstream (Scope 3) emissions for Micron’s operations, they are analyzed as Scope 1 (direct) emissions associated with construction within the footprint of these sites. Any upstream emissions due to fuel production and transport for these on-site construction activities are considered as Scope 3 emissions under this section.

Construction activities related to the development of the OCDWEP IWWTP and water reclamation facility would result in emissions of GHG, but on a much smaller scale compared to other construction emissions. Due to lack of detailed design and equipment utilization information for the construction methods for the OCDWEP IWWTP and water reclamation facility, detailed construction GHG emissions are not directly quantifiable. However, estimations using proxy data are shown below.

Scope 1 (Direct) Emissions

Micron Campus

Scope 1 construction GHG emissions were quantified for the Proposed Project based on construction schedule, phases, type of construction equipment (e.g., bulldozers, backhoes, cranes, trucks, etc.) and duration of use. GHG emission factors were obtained from the non-road module in the USEPA MOVES4 model for on-site construction equipment activity (USEPA, 2023d), from the USEPA Greenhouse Gas Emission Factor hub (USEPA, 2025c) and from the 2022 USEPA NEI (USEPA, 2022). Locomotive emission factors were obtained from the NEI and Emission Factors for Locomotives (USEPA, 2009). The analysis includes on-site construction activities including concrete batch plant, conveyor system, crushing and screening processes. The analysis also includes mobile source emissions associated with construction worker commutes and hauling of materials, which used on-road emission factors from the MOVES4 model. The analysis considered the overall construction schedule, staging, equipment, utilization, and load factors to determine the potential increase in mobile source GHG emissions. During the construction period, two switching locomotives associated with Micron would operate in the Rail Spur Site for the unloading of construction materials. A Class I railroad would deliver railcars to Rail Spur Site. The switching locomotives would operate intermittently, corresponding with construction activities at the Micron Campus from 2026-2041. Chapter 2 (Proposed Action and Alternatives) provides the construction schedule for the Micron fabs and explains Rail Spur Site utilization over time. Although rail activity at the Rail Spur Site would be episodic over a 16-year period, for emissions calculation purposes, the analysis below front-loads all of the rail activity for the entire Proposed Project into the first three years of Proposed Project-related activity—2027, 2028 and 2029. This has the effect of accurately capturing the magnitude of rail emissions associated with the Proposed Project, but over-estimating the intensity of those emissions, because the total rail emissions anticipated to take place intermittently over a 16-year period are being compressed into a three-year time span. Annual Scope 1 (direct) construction emissions associated with the Proposed Project are shown in Table 3.7-6.

Table 3.7-6 Annual Scope 1 (Direct) Construction Emissions from Fuel Combustion[1] (Metric Tons per Year)

Year	CH_4 (metric tons per year)	N_2O (metric tons per year)	CO_2 (metric tons per year)	Total GHG (CO_2e, metric tons per year)	
				GWP20[3]	GWP100[3]
2025	0.04	0.23	3,959	4,024	4,022
2026	0.66	2.14	35,479	36,098	36,064
2027	2.35	2.95	58,032	59,007	58,878
2028	2.23	2.08	49,155	49,892	49,769
2029	2.44	2.96	58,924	59,910	59,777
2030	0.18	1.71	23,969	24,435	24,427
2031	0.02	0.18	2,468	2,517	2,516
2032 [2]	0.00	0.00	--	--	--
2033	0.06	0.51	8,186	8,325	8,322
2034	0.42	2.30	33,961	34,602	34,581
2035	0.11	1.33	19,016	19,375	19,370
2036	0.01	0.05	828	842	841
2037 [2]	0.00	0.00	0	--	--
2038 [2]	0.00	0.00	0	--	--
2039	0.07	0.62	9,977	10,146	10,143
2040	0.35	2.08	29,766	30,345	30,327
2041	0.10	1.44	20,262	20,650	20,646

2042	0.01	0.07	1,227	1,247	1,246
Maximum Year	**2.44**	**2.96**	**58,924**	59,910	59,777
Total (Lifespan)	**9.04**	**20.64**	**355,208**	361,416	360,930

1. Includes on-site construction equipment and locomotives (emissions associated with locomotive operations from 2027-2041 compressed into the 2027, 2028, and 2029 time period).
2. Construction activity paused in 2032 after completion of Fab 1 and Fab 2, and in 2037 and 2038 after completion of Fab 3.
3. GWP20 and GWP100 from IPCC AR5. Values presented in IPCC AR5 align with values encoded in 6 CRR-NY 496.

Connected Actions

Construction GHG emissions for the OCDWEP IWWTP were approximated based on scaling construction CO_2e emissions for a Micron fab based only on construction footprint and duration. Construction of the OCDWEP IWWTP connected action is currently expected to occur in two 30-month phases. Approximately 7.5 months in each phase will involve site preparation with heavy construction, with the remaining time for building and WWTP infrastructure construction. Stage 1 will involve construction on 29.9 acres; Stage 2 will involve construction on 6.7 acres. The expected overall timeline is a construction start date in late 2026 with completion in 2029.

Constructing a Micron fab facility and the IWWTP involve heavy construction activities of similar characteristics (i.e., site preparation using heavy equipment and building and infrastructure construction using heavy equipment). The total footprint for construction of an individual Micron fab (using Fab 2 as an example) on the Micron Campus is 350 acres and a duration of 38 months (start 9/1/2028 and end 2/28/2031). Total GHG CO_2e emissions (comprised of non-road equipment exhaust and worker commuting) for constructing Fab 2 are shown in Table 3.7-7. GHG emissions in tons/month/acre were determined by dividing Fab 2 construction GHG emissions by 350 acres (footprint of Fab 2) and then dividing by the duration in months.

Table 3.7-7 GHG Construction Emission Factors for Micron Fab (GWP100)

Year	Fab 2 Construction Emissions CO_2e (metric tons/year)	Fab 2 Emissions CO_2e metric tons/year	Emissions CO_2e metric tons/month/acre	Emissions CO_2e metric tons/month/acre
2028 (4 months)	9,586	8,696	6.9	6.2
2029 (12 months)	**37,419**	**33,946**	**8.9**	**8.1**
2030 (12 months)	19,963	18,110	4.8	4.3
2031 (2 months)	498	452	0.7	0.6

As shown in Table 3.7-7, the monthly emission/acre factor is variable due to variation in the type of construction occurring during the time period and intensity of construction activity. For estimating OCDWEP IWWTP construction GHG emissions, the factor from 2029 was chosen as a conservative surrogate factor for the OCDWEP IWWTP because it is the maximum value for the construction years shown in Table 3.7-7. This factor was applied to the OCDWEP IWWTP construction duration and footprint information. OCDWEP IWWTP construction CO_2e emissions are shown in Table 3.7-8. The OCDWEP IWWTP construction GHG emissions are estimated to be considerably lower than construction emissions for the Micron Campus.

Table 3.7-8 OCDWEP IWWTP Construction GHG Emissions (GWP100)

OCDWEP IWWTP Construction Phase	Construction Footprint (acres)	Duration (months)	Emissions CO_2e (tons)	Emissions CO_2e (metric tons)
1	29.9	30	7,992	7,250
2	6.7	30	1,791	1,625

Scope 2 (Indirect) GHG Emissions

Scope 2 construction emissions would result from emissions from power generation facilities used for the sourcing of electricity for construction activities. Construction activities would use electricity throughout the development of the Micron Campus. The electrical demands associated with construction are anticipated to be much below the long-term demands of the facility and can be readily accommodated by existing power generation capacity within the region. The Rail Spur Site, whose maximum operations would occur during the construction period of the Micron Campus from 2026-2041, would additionally require 11.8 GWh per year of electricity to operate, resulting in Scope 2 emissions of 1,803 metric tons of CO_2e per year on a GWP20 basis.

Scope 3 (Indirect) Emissions

Scope 3 construction emissions would result from the upstream and downstream effects of transportation and installation of construction materials and fuel combusted.

A GHG emission estimate associated with upstream fuel production and transport into New York for fuel used during construction is shown in Table 3.7-9. The MOVES4 model runs provided estimates of energy consumption from diesel fuel combustion during construction. The energy consumption estimate was combined with the diesel fuel upstream fuel production and transport factors from the 2024 New York State GHG Emission Inventory Report appendix. The upstream fuel production and transport GHG estimate uses the GWP20 metric per 6 NYCRR Part 496. Similar to the Scope 3 emissions analysis for Long Term Operations from Stationary Sources, additional GHG emissions associated with construction upstream inputs and resulting lifecycle emissions for the entire value chain are not reasonably foreseeable at this time due to variability and uncertainty. As a result, these estimates have not been developed as they would not provide reliable information for decision-making.

Table 3.7-9 GHG Emissions from Scope 3 Upstream Fuel Production and Transport for Construction[1] (Metric Tons per Year)

Year	Upstream + Fuel Transport GHG				Total Construction GHG (Tailpipe + Upstream + Fuel Transport)
	CH_4	N_2O	CO_2	20-year GWP[2] (CO_2e)	20-year GWP[2] (CO_2e)
2025	5	0.01	581	1,004	5,028
2026	40	0.09	4,708	8,129	44,227
2027	44	0.09	5,082	8,775	67,782
2028	29	0.06	3,371	5,820	55,712
2029	45	0.10	5,214	9,002	68,913
2030	32	0.07	3,749	6,473	30,908
2031	3	0.01	382	659	3,176
2032[2]	--	--	--	--	--
2033	11	0.02	1,295	2,236	10,560
2034	45	0.10	5,188	8,957	43,559
2035	26	0.05	2,998	5,176	24,552
2036	1	0.00	120	208	1,050
2037[3]	--	--	--	--	--
2038[3]	--	--	--	--	--
2039	14	0.03	1,576	2,721	12,867
2040	40	0.08	4,633	8,000	38,344
2041	28	0.06	3,219	5,558	26,208
2042	2	0.00	179	309	1,556
Maximum Year	***45***	***0.10***	***5,214***	***9,002***	**68,913**
Total	***363***	***0.78***	***42,296***	***73,027***	**434,443**

1. Includes construction equipment and locomotives
2. Construction activity paused in 2032 after completion of Fab 1 and Fab 2, and in 2037 and 2038 after completion of Fab 3.

Construction GHG emissions over the 16-year construction period vary year to year depending on construction activity, with peak emissions of approximately 69,000 MT CO_2e in year 2029. GHG emissions due to construction of the Proposed Project would end at the end at the completion of construction operations.

Construction GHG Emissions Summary

Estimated construction GHG emissions, including upstream emissions, over the 16-year construction period total 434,443 MT CO_2e. The maximum annual construction emissions are 68,913 MT CO_2e. For context, construction emissions for the Proposed Project in the maximum year are approximately 0.03 percent of the CLCPA 2030 emission limit target. Based on the emission quantities described above, construction of the Proposed Project would not result in a significant increase in GHG emissions.

Manufacturing Operations

Long Term Operations Stationary Sources

Scope 1 (Direct) Emissions

GHGs from the Proposed Project would be emitted as a result of using fluorinated GHGs, N_2O, CH_4, and CO_2 as raw materials in manufacturing processes, from oxidation of organic compounds in thermal oxidation systems and RCTOs, from the combustion of natural gas or diesel in operations, and leaks of HTF.

In addition to being used as inputs to the semiconductor manufacturing process, the Proposed Project includes several types of equipment that would combust either diesel fuel or natural gas. Thermal oxidation systems and RCTOs would combust natural gas, and byproducts of combustion would exhaust alongside other unreacted process GHG emissions. Water bath vaporizers would combust natural gas to heat baths of water through which pipes of liquid nitrogen would flow to be vaporized for use. Natural gas-fired boilers would provide heat during construction and startup operations and as needed to supplement fab heat recirculation systems. Diesel fuel-fired emergency generators would provide backup power for the site.

GHGs are formed as a result of chemical reactions as part of semiconductor manufacturing processes. Emission chemicals may also be generated in PEECs which manage exhaust from process tools for protection of equipment and personnel. In addition, POU control devices installed for removal of F-GHGs and centralized RCTOs installed for removal of volatile organic compounds (VOC) can generate emission chemicals. When these reactions occur, use of the primary chemical results in emissions of one or more emission chemicals that are not the primary chemical itself. As part of GHG BACT for the air permitting process, the emissions estimates assume a minimum destruction and removal efficiency (DRE) is achieved for operation of these POU control devices.

Process chillers are utilized in certain process tools to prevent equipment from overheating. These chillers use engineered HTFs, which transfer energy efficiently without undergoing a refrigerant phase change cycle which distinguishes these HTFs from refrigerants regulated by 40 CFR Part 82 Protection of Stratospheric Ozone. The HTFs used may include fluorinated fluids, which may leak and result in GHG emissions. These emissions are generated in a fugitive manner inside of the fab but would be included in air permitting emissions calculations and this analysis since HTFs would exhaust from stacks alongside other process emissions.

As part of its Air Permit Applications for Phase 1 (Fabs 1 and 2), Micron estimated GHG emissions for its manufacturing operations on a GWP100 and GWP20 basis. Emissions calculated on a GWP100 basis were used for comparison with CAA permitting applicability and the GHGRP, under which Micron would eventually report, as applicable. Emissions calculated on a GWP20 basis will be used for evaluation under the CLCPA and associated NYSDEC regulations and policies to determine whether the Proposed Project would contribute to or impede progress toward meeting the CLCPA's statewide emissions limits. As the Air Permit Applications for Phase 1 only included operation of Fabs 1 and 2, Micron used a scaling factor of 2 to account for operation of Fabs 3 and 4 similar to the methodology presented in Section 3.6 (Air Quality). GHG emissions control measures and BMP's as proposed for Micron's GHG BACT analysis for its PSD permitting review is included in Appendix J-1. A summary of total GHG that would be emitted by each process is included in Table 3.7-10 and Table 3.7-11 below based on the corresponding GWP20 and GWP100 provided in Table 3.7-2.

Scope 2 (Indirect) Emissions

Scope 2, or indirect upstream emissions from the DRAM manufacturing operation would arise from energy use in plant operations. While the specific breakdown of Micron's electricity consumption is provided in Section 3.10 (Utilities and Supporting Infrastructure), it is assumed for this analysis that all electricity is fueled by offsite fossil fuel generated power as a worst-case scenario. As discussed in Chapter 2 (Proposed Action and Alternatives), Micron estimates that plant operations at completion would require 15,673.83 GWh of electricity usage annually. Based on the amount and power profile of these requirements, as provided by Micron, GHG emission factors were applied to energy use based on New York State electrical emission rate factors obtained from USEPA's Emissions and Generation Resource Integrated Database (eGRID), referenced in USEPA's GHG Emission Factor Hub, as applicable (USEPA, 2025c).

Operation of the Rail Spur Site is discussed further below in the analysis of construction effects as maximum operation of the Rail Spur Site does not overlap with operation of all four fabs on the Micron Campus. Electricity demand for the Childcare Site, Warehouse Site, and other Connected Actions has not yet been determined because detailed usage information is not yet available. However, it is anticipated that they would result in a minimal effect on calculated Scope 2 emissions compared to the Micron Campus operations. Scope 2 emissions estimates account for the reduction in electrical demand resulting from the on-site 4 MW solar power generation, which are estimated to generate 4,161 MWh per year, as part of project design. A summary of total GHG that would be emitted by Scope 2 indirect electrical use is included in Table 3.7-10.

Scope 3 (Indirect) Emissions

Emissions of GHGs that occur at the facility and that occur upstream of the facility from the extraction and transmission of natural gas and diesel combusted on site are considered as part of the required state CLCPA analysis. Upstream emissions were quantified using emission factors published by the NYSDEC in Appendix A, Table A1 of the 2024 NYS Statewide GHG Emissions Report (NYSDEC, 2024i). GHG emissions associated with the OCDWEP IWWTP aerobic digestion processes and on-site combustion equipment, including a natural gas boiler and diesel emergency generators, have also been quantified. Upstream GHG emissions from fuel combustion at the OCDWEP IWWTP are also considered Scope 3 (indirect) emissions for this analysis as they are downstream of Micron's manufacturing operations. A description of the calculation methodologies used to calculate GHG emissions is included in Appendix B to the Draft CLCPA Analysis (see Appendix J-2).

Upstream indirect mobile source emissions from Micron employee vehicle commutes traditionally captured under operational Scope 3 GHG emissions have been included in the Long Term Operations Mobile Sources section later in this section as part of a combined analysis of regional mobile source traffic.

Additional GHG emissions associated with the Proposed Project's upstream inputs, downstream product end uses (such as particular semiconductor chip end uses) and resulting lifecycle emissions for the entire value chain are not reasonably foreseeable at this time because they are too variable and uncertain given the future potential range of product designs and uses. As a result, such estimates have not been developed, as they would not provide reliable information for decision-making.

Operations GHG Emissions Summary

The initial estimated annual PTE of GHGs for the Proposed Project at operating at full build-out of all four fabs in 2041 is summarized in Table 3.7-10 and Table 3.7-11 below. Scope 1 (direct), Scope 2 (indirect), and Scope 3 (indirect) emissions are presented on a GWP20 basis in accordance with requirements of DAR-21 for the CLCPA analysis. In accordance with requirements of 6 NYCRR Part 201 and the CAA Title V program, GHGs were calculated based on the GWP100 of each GHG-pollutant emitted.

Table 3.7-10 Proposed Project Total GHG Emissions (GWP20)

Emission Source	Scope 1 CO_2e	Scope 2 CO_2e	Scope 3 CO_2e	Total Emissions
	(metric tons per year, GWP20)			
Semiconductor Process Tools	687,514	--	--	687,514
Fuel Combustion in PEECs and POUs	323,159	--	245,956	569,115
Fuel Combustion in RCTOs	286,004	--	217,677	503,681
Fuel Combustion in WBVs	73,364	--	56,028	129,391
Fuel Combustion in Boilers	125,997	--	96,224	222,222
Fuel Combustion in Emergency Generators	14,968	--	4,738	19,706
Heat Transfer Fluids	201,854	--	--	201,854
Fuel Combustion in RCS	11,290	--	8,593	19,882
Fuel Combustion in Fire Pump Engine	47	--	15	62
Biological Wastewater Treatment (Micron Campus and IWWTP)	165,346	--	--	165,346
Circuit Breakers	6,365	--	--	6,365
IWWTP Combustion	--	--	19,315	19,315

Emission Source	**Scope 1 CO_2e**	**Scope 2 CO_2e**	**Scope 3 CO_2e**	**Total Emissions**
	(metric tons per year, GWP20)			
Electricity Usage (Micron Campus) – National Grid Utility	--	2,394,307	--	2,394,307
4 MW Campus Solar Panels	--	-457	--	-457
Total Emissions	**1,895,908**	**2,393,850**	**648,545**	**4,938,303**

1. Biological wastewater treatment emissions assumes anaerobic digestion at the Micron Campus and OCDWEP IWWTP.

Table 3.7-11 Proposed Project Total GHG Emissions (GWP100)

Emission Source	**Scope 1 CO_2e**	**Scope 2 CO_2e**	**Scope 3 CO_2e**	**Total Emissions**
	(metric tons per year, GWP100)			
Semiconductor Process Tools	881,699	--	--	881,699
Fuel Combustion in PEECs and POUs	322,821	--	132,451	455,272
Fuel Combustion in RCTOs	285,704	--	117,223	402,927
Fuel Combustion in WBVs	73,285	--	30,172	103,457
Fuel Combustion in Boilers	125,863	--	51,818	177,682
Fuel Combustion in Emergency Generators	14,934	--	3,417	18,351
Heat Transfer Fluids	199,699	--	-	199,699
Fuel Combustion in RCS	11,278	--	4,627	15,905
Fuel Combustion in Fire Pump Engine	47	--	11	58
Biological Wastewater Treatment (Micron Campus and IWWTP).[1]	165,346	--	--	165,346
Circuit Breakers	8,547	--	--	8,547
IWWTP Combustion	--	--	18,115	18,115
Electricity Usage (Micron Campus) – National Grid Utility	--	2,273,587	--	2,273,587
4 MW Campus Solar Panels	--	-503	--	-503
Total Emissions	2,089,224	2,274,089	357,834	4,721,148

1. Biological wastewater treatment emissions as presented in the March 25, 2025, CLCPA analysis assuming anaerobic digestion at the Micron Campus and OCDWEP IWWTP.

For context, on a GWP100 basis, Proposed Project total GHG emissions would be approximately 2.42 percent of New York State's 2022 statewide GHG emissions and 29.5 percent of New York State's 2022 industrial sector emissions, which represent a significant increase in

GHG emissions State- and industry-wide. Scope 1 and Scope 2 GHG emissions are roughly equivalent to the average annual GHG emissions of approximately 487,322 and 530,443 passenger cars per year, respectively (USEPA, 2024k).[76]

Based on the significant increase in GHG emissions, the Proposed Project would represent a significant adverse effect on GHG emissions.

Long Term Operations Mobile Sources

The long-term operations mobile source analysis includes GHG emissions from mobile sources on the traffic study regional roadway network (VISUM) shown in Figure 3.6-1. This traffic road network includes regional traffic for the No Action Alternative and regional traffic plus Micron employee commutes and deliveries for the Preferred Action Alternative. The mobile source GHG analyses were performed in accordance with methodologies presented in the NYSDOT's TEM, with the MOVES4 model used for emission, activity, and fuel consumption data.

The regional mobile source GHG emission burden analysis for traffic due to the Proposed Project under the Preferred Action and compared to the No Action Alternative is presented in Table 3.7-12. These emission values represent fuel combustion for vehicle traffic on the regional road network during construction and operation in 2027 and 2031, and operational traffic at full build out in 2041. The traffic evaluation in 2041 includes three traffic mitigation scenarios related to easing traffic congestion, thus emissions were evaluated for each of the traffic mitigation scenarios as well, discussed in detail in Section 3.11 (Transportation and Traffic).

A GHG emission estimate associated with upstream fuel production and transport into New York State for fuel used during mobile source operations from worker traffic is shown in the lower half of Table 3.7-12. The MOVES4 model runs also provided estimates of energy consumption associated with vehicles during the traffic evaluation years of 2027, 2031, and 2041 for the No Action and Preferred Action Alternatives. For year 2041, the energy consumption for the Preferred Action Alternative with traffic mitigation scenarios A, B, and C was also calculated. Energy consumption is used in the estimation of upstream fuel production and transport emissions (see 2023 NYS Statewide GHG Emission Report, Appendix: Emission Factors for Use by State Agencies and Applicants). The difference between energy consumption for the Preferred Action Alternative minus the No Action Alternative (in units of million British Thermal Units (BTUs)) was combined with the gasoline and diesel upstream fuel production and transport factors (in units of grams per million BTUs) from the 2024 New York State GHG Emission Inventory Report appendix to estimate upstream GHG fuel production and transport attributable to the Proposed Project's traffic. These upstream and fuel transport emissions were then added to the regional mobile source emissions.

For context, as shown in Table 3.7-12, GHG (CO_2e) regional emissions in year 2041 for the Preferred Action Alternative with no traffic mitigation and under each traffic mitigation scenario are approximately 2 percent higher compared to the No Action Alternative. This trend corresponds with the anticipated increase in annual VMT. When combined with upstream and

[76] In 2022, USEPA reports that a typical passenger vehicle that has an average fuel economy of 22.8 miles per gallon and drives around 10,917 miles per year.

transport emissions, the Preferred Action Alternative GHG emissions in year 2041 are also approximately 2 percent higher compared to the No Action Alternative. As vehicle propulsion technology continues to transition to lower GHG emitting technologies and the public adopts them, regional and project specific mobile source GHG emissions reductions are likely. Compared to the No Action Alternative, the long-term operational mobile sources related to the Proposed Project under the Preferred Action Alternative in year 2041 would increase GHG emissions within the regional study area by approximately 2 percent.

Table 3.7-12 Regional Mobile Source VMT and GHG Emissions

	2027					2031					2041				
	No Action	**Preferred Action**	**% Change**	**No Action**	**Preferred Action**	**% Change**	**No Action**	**Preferred Action**	**% Change**	**Traffic Mitigation A**	**% Change**	**Traffic Mitigation B**	**% Change**	**Traffic Mitigation C**	**% Change**
Annual Vehicle Miles Travelled (VMT)	3,042,335,865	3,055,710,086	0.44%	3,161,373,598	3,279,711,283	3.74%	3,497,868,635	3,564,973,904	1.92%	3,566,204,785	1.95%	3,566,317,715	1.96%	3,565,824,889	1.94%
Regional Mobile Source Emissions (metric tons per year)															
CO_2	964,519	970,334	0.60%	889,833	923,950	3.83%	793,966	810,336	2.06%	810,196	2.04%	810,087	2.03%	809,965	2.02%
Methane (CH_4)	40	40	0.93%	36	37	2.68%	32	32	1.97%	32	1.76%	32	1.69%	32	1.67%
Nitrous Oxide (N_2O)	19	20	1.87%	19	20	4.40%	19	20	3.15%	20	3.04%	20	3.01%	20	3.00%
Total GHG Emissions (CO_2e) - 20-Year GWP[1]	972,906	978,847	0.61%	897,831	932,247	3.83%	801,619	818,199	2.07%	818,048	2.05%	817,936	2.04%	817,813	2.02%
Upstream Fuel Production and Transport (metric tons per year)															
CO_2	204,926	206,145	0.60%	196,159	203,650	3.82%	188,712	192,553	2.04%	192,542	2.03%	192,522	2.02%	192,494	2.00%
Methane (CH_4)	1,545	1,554	0.60%	1,479	1,535	3.82%	1,422	1,451	2.04%	1,451	2.03%	1,451	2.02%	1,451	2.00%
Nitrous Oxide (N_2O)	4	4	0.60%	3	4	3.82%	3	3	2.04%	3	2.03%	3	2.02%	3	2.00%
Total GHG Emissions (CO_2e) - 20-Year GWP[2]	335,898	337,898	.60%	321,528	333,807	3.82%	309,322	315,617	2.04%	315,600	2.03%	315,568	2.02%	315,521	2.00%
Regional Mobile Source Emissions + Upstream Fuel Production and Transport (metric tons per year)															
Total GHG Emissions (CO_2e) - 20-Year GWP[2]	1,308,804	1,316,744	0.61%	1,219,359	1,266,054	3.83%	1,110,941	1,133,816	2.06%	1,133,648	2.04%	1,133,504	2.03%	1,133,333	2.02%

1. GWP20 from IPCC AR5. Values presented in IPCC AR5 align with values encoded in 6 CRR-NY 496.
2. The gasoline and diesel upstream fuel production and transport factors from the 2023 New York State GHG Emission Inventory Report are only available for 20-year GWP; as such, upstream totals for 100-year GWP cannot be calculated.

3.7.4 Climate Change and Resiliency

The most recent report by the IPCC indicates that GHG emissions from human activities are responsible for accelerating global warming and climate change (IPCC, 2021). The Proposed Project would be located in Onondaga County, New York. New York State as a whole is experiencing climate change effects as noted in several key reports conducted by NYSDEC.

The annual statewide average temperature in New York has risen by 3°F since 1970 and another 5.1–10.9°F rise is anticipated by the 2080s, with the most significant impact occurring in the northern parts of the State (NYSDEC, 2024h). As a result of an overall warming trend, warmer winters across the State would result in less snow and an earlier snowmelt. Rising annual temperatures would have cascading effects on aquatic ecologies of lakes and ponds surrounding the Great Lakes, which are sensitive to snowmelt and subsequent algal growths. Creeks and rivers, especially those which lack or have lost connection to floodplains, forested buffers, or contact with groundwater and headwaters, are more vulnerable to altered biodiversity and flows of riverine ecosystems due to extreme heat.

With the total number of hot days, as well as frequency and duration of heat waves expected to increase, urban areas may be even more intensely impacted due to the “heat island effect.” The Proposed Project would result in many changes to land use, including the construction of concrete, pavement, and other dark-colored impervious surfaces, and built environment consisting of building structures. Additional heat-generation at the Proposed Project would originate from energy consumption, construction, industrial operation, and mobile source emissions from transportation.

Increases in surface temperatures in the areas where the Proposed Project and Connected Actions would be located may further exacerbate already existing adverse effects of extreme heat. Impervious surfaces such as concrete and pavement can reach temperatures 40˚F or more above grass temperatures under the same conditions (Knox, 2022). Increased pavement temperatures during or immediately after precipitation events can heat stormwater runoff that drains into sewers, further raising water temperatures when released into bodies of water, negatively affecting aquatic ecosystem productivity.

Increased surface temperatures are expected to adversely impact the levels and extent of groundwater availability. Higher surface temperatures would lead to increased evaporation and evapotranspiration, leading to a decline in groundwater levels as more water is pulled from the aquifer to compensate for lost water at the surface. As explained in Section 3.3 (Water Resources), there are no withdrawals of groundwater expected for the operation of the Proposed Project, and therefore no direct effects to groundwater due to withdrawals.

The increase of impervious surfaces associated with the Proposed Project would reduce the surface area in which precipitation may infiltrate into the ground, which could lead to long-term reductions in groundwater recharge. However, post-construction SMPs as mentioned in Appendix K-2, Section 2.5, will be used for both treatment and infiltration of stormwater captured on the Micron Campus. SMPs will include wet extended detention ponds, infiltrations basins, and filtration bioretention controls. These SMPs will be utilized to detain, store, and filter stormwater before releasing it underground to aid in infiltration. Other SMPs that are being considered include stormwater planters with underdrains, dry swales, rainwater harvesting systems, green roofs, rooftop disconnection, and porous pavement. Information gathered from all 43 groundwater monitoring wells would be incorporated into operational design considerations in an adaptive manner once construction of the Proposed Project is complete.

Future projects in Onondaga County and the four surrounding counties may impact groundwater by requiring the storage and handling of chemicals of potential groundwater pollutants, dewatering, or other groundwater withdrawals. Groundwater depletion, in turn, will negatively impact water supply, as extreme heat will increase the demand for water used for drinking, recreation, and cooling. However, all future projects will need to comply with relevant Federal, State, and local environmental laws and regulations, including New York State programs that require municipalities to consider climate change and climate change resilience in their planning efforts, construction stormwater permits and, in some cases, operational effluent limitations associated with CWA Section 402 and ECL Article 17 which would minimize direct and/or indirect impacts to groundwater, including contamination. Due to Federal, State, and local regulations that are intended to protect groundwater supplies, groundwater impacts associated with induced growth are not anticipated to be significant. The impacts of each future development action that might be considered induced growth associated with the Preferred Action Alternative would be specifically assessed during the permitting process for each new development action/project.

Increases in heat index (which pairs temperature with relative humidity), are expected to affect temperatures at the Proposed Project and Connected Action locations. High heat and moisture can cause structural weakening, corrosion of metal parts, shortening of roof lifespans, and wood damage through swelling and rotting. Air temperature and changes in humidity can impact building materials such as drywall, brick, and electrical systems. The Proposed Project will be engineered to withstand these temperature increases, and there is no reason to believe that the public utilities responsible for constructing and operating the Connected Actions would fail to engineer the structures to withstand anticipated changes in climate, including heat index. Micron's Business Continuity process ensures that infrastructure is constructed with resiliency for natural disasters, climate change, and other factors in mind. In addition, the buildings will primarily be steel and concrete structures, not wood and drywall.

Climate change is also intensifying the frequency and strength of extreme weather events in New York State and includes impacts to the intensity and frequency of extratropical cyclones (including nor'easters), tropical cyclones, thunderstorms, drought, snowfall, extreme cold, and Great Lakes ice cover. An increased number of extreme precipitation events are likely, which is consistent with the expectation that warmer air, warmer bodies of water, and increased evaporation will contribute to the formation of more intense storms (NYSDEC, 2024h). However, these climate impacts are not anticipated to have any significant effect on the Proposed Project. The Proposed Project's structures are made of industrial-grade concrete and steel, which should be unaffected by projected weather events in Upstate New York. The infrastructure associated with the Proposed Project is also protected from anticipated extreme weather events because it is similarly constructed, and much of it buried and cased in concrete or other material that would withstand heat and weather (e.g. water/wastewater, fiber, natural gas, and electrical lines are all underground). Even the electrical substation has $150 million in lightning protection invested in it over the last seven years. As explained above, natural disasters are contemplated in Micron's Business Continuity plans, and part of the reason Micron chose Upstate New York as the location for the Proposed Project was the low risk of natural disaster impacts to Proposed Project operations.

Although no regulated floodplains are located within the property boundaries of the Micron Campus Site, the Childcare Site, or the Rail Spur Site,[77] heavy precipitation events can lead to flooding and damage to infrastructure in urban areas with impervious surfaces that are like those located at the Proposed Project and Connected Action sites. This increase in impervious surface coverage may decrease groundwater recharge and increase stormwater runoff and flooding events as excess water can potentially overwhelm the ability of the natural landscape and the built environment to absorb it or carry it away in a timely manner. Changes in hydrology during project operations and from climate change would be minimized through the creation of a stormwater management system strategically designed around the Proposed Project's sites (Micron Campus, Childcare Site, Rail Spur Site). These systems are specifically designed to accommodate, slow, and hold stormwater runoff created from the buildings, roads, and other impervious surfaces.

In addition to the increase in stormwater runoff volume, the presence of pollutants that are often carried with stormwater runoff over impervious surfaces can alter surface water chemistry and pose a threat to aquatic plant and animal species. Therefore, the effects on water quality from permanent changes in stormwater runoff can potentially be major if not addressed. However, the effects on water quality from impervious surface stormwater runoff would also be minimized through the creation of stormwater management systems for the Proposed Project. These systems would be designed to hold and naturally filter stormwater prior to being released to nearby surface waters, which will minimize the likelihood that water quality will be affected.

SMPs such as wet extended detention ponds, infiltration basins, and filtration bioretention controls would be incorporated into the design of the Proposed Project to minimize potential stormwater effects from the Proposed Project, as well as from projected increases in precipitation due to climate change. Stormwater modeling was used to size stormwater pipes, bridges, and SMPs to accommodate flows from the 10-year and 100-year storm events and keep post-development peak flow values at or below the pre-development peak flow values in accordance with the *2024 New York State Stormwater Management Design Manual* (NYSDEC, 2024a). Overall, SMPs would maintain existing drainage patterns as much as possible, continue the conveyance of upland watershed runoff, control increases in stormwater runoff, prevent soil erosion and sedimentation, and provide runoff reduction using green infrastructure measures. See Appendix K-2 Section 3.3.1, Stormwater BMPs and SMPs for more information on the site-specific analysis of SMPs.

Though the Proposed Project is expected to be impacted somewhat by climate change, given projected increases in temperatures and extreme weather events, these impacts are not anticipated to be significant. Micron chose the Proposed Project Site in part because the area posed very low climate risk to the Proposed Project, including consideration of SFHAs, base flood elevations, flood insurance risk premium zones, and 500-year floodplains. Through the planning and implementation of resilience strategies such as SMPs and green infrastructure measures, Micron possesses the ability to minimize the vulnerability of the Proposed Project to climate-related effects.

[77] These properties are all considered to be Zone X "Areas determined to be outside the 0.2 percent annual chance floodplain" by FEMA.

The Proposed Project is not anticipated to significantly affect the climate resiliency of the surrounding area. The Proposed Project would not directly contribute to the demand for groundwater (see Section 3.10, Utilities and Supporting Infrastructure), increase the likelihood or severity of local flooding (see SMP discussion above, Section 3.3, Water Resources, and Section 3.11, Transportation), or affect the ability of the surrounding area to respond to future increases in temperate, storm activity, or precipitation. The Proposed Project would rely primarily on water withdrawn, and ultimately returned to Lake Ontario, which is one of the largest freshwater bodies in North America (see Section 3.10, Utilities and Supporting Infrastructure). While there are projections for increased variability in lake levels under future climate scenarios, including potential for extreme highs and lows, the expectation is that water levels in the lake are anticipated to increase slightly in a future affected by climate change, which further indicates that the Proposed Project is unlikely to have any significant adverse impact on freshwater supply. Additional detail on climate change and resiliency impacts are discussed in Micron's Draft CLCPA Analysis (Appendix J-2).

3.7.5 Growth Inducing Effects

Induced growth from the Proposed Project, including population increases, economic activity, and development within the five-county region also could lead to additional GHG emissions from related transportation, industrial operations, residential and commercial energy consumption, and new construction. These sources of GHG emissions would contribute to the region's overall carbon footprint and potentially contribute to further climate change.

New York State maintains ambitious climate policies and laws, like the CLCPA. In addition to the statewide emission limits, it sets targets for the State's electricity sector: reliance on 70 percent renewable energy by 2030 and 100 percent net zero-emissions electricity by 2040. This means that, as the State's electrical grid continues to shift away from conventional energy sources, the effects of induced growth would likely benefit from an increasing share of renewable energy being integrated into the grid over time. This transition would help reduce dependence on fossil fuels and ensure that the additional energy demands generated by the Proposed Project's induced growth are supported by cleaner, non-GHG producing, sustainable energy sources. This will potentially limit the effect of induced growth on climate change.

Several grid resiliency projects are underway across New York State (see Section 3.10, Utilities and Supporting Infrastructure), including National Grid's Upstate Upgrade (expected to be complete in 2030), which focuses on improving the integration of locally generated renewable energy like solar and wind. This project will enhance the reliability of energy delivery to the region. Similarly, Avangrid's LineVision introduces real-time monitoring technology for transmission lines, allowing the grid to reliably carry more renewable energy. These efforts are essential for supporting State and regional energy needs, ensuring that future growth, including the induced growth from the Proposed Project, benefits from a more resilient and sustainable grid powered by increasing renewable energy generation with zero GHG emissions. As a result, the induced growth associated with the Proposed Project is not anticipated to have a significant impact on the resiliency of the electrical grid to climate change. NYSDEC further provides Climate Change Adaption and Resilience Plan templates for communities to reduce economic, environmental, and social risk, mitigate losses, and take advantage of any opportunities resulting from climate change and therefore improve climate resiliency. Although induced growth from the Proposed Project may stress the resiliency of the region to climate impacts, any future development would be conducted under applicable State and local policies and programs, including the Smart Growth Public Infrastructure Policy Act, CLCPA, and CRRA, which establish 11 smart-growth criteria for use by state and local agencies to help ensure that future planning and implementation of transportation, sewer and water treatment, water, education, housing, and publicly supported infrastructure, among other things, is resilient to a changing climate. Accordingly, it is anticipated that any induced growth associated with the Proposed Project would be undertaken with climate resiliency in mind, and that the growth would not significantly negatively affect the current climate resiliency of the region.

Summary of Effects

Construction and operation of the Proposed Project and Connected Actions, including indirect, upstream, and downstream activities and land use changes associated with the removal of wetlands to accommodate the Proposed Project, and induced growth due to the Proposed Project, would result in significant increases in GHG emissions and potentially significant contributions to climate change. Though the greatest contributing factor would be operation of the four fabs at the Micron Campus, and Micron has committed to controlling these direct GHG emissions to maximum extent practicable, the Preferred Action Alternative would still result in significant adverse increases in GHG emissions.

The Preferred Action Alternative is not anticipated to present significant climate resiliency risks. The Proposed Project will be engineered to withstand effects of the changing climate, and it is anticipated the Connected Actions, constructed by the appropriate public utilities pursuant to applicable New York State and public utility climate policies, would be too. The Proposed Project's design and operational measures would ensure that the Proposed Project would not significantly affect flooding or resources such as groundwater, which may become less abundant as the climate changes. The Proposed Project would not use groundwater, and would utilize water drawn from, and largely returned to, Lake Ontario. Any new electricity generation that would supply the Proposed Project in the later phases of development would be planned and provided for under New York and the public utility's climate action plans. Likewise, any transportation infrastructure upgrades would be made pursuant to applicable planning criteria and policies, which are subject to the State's climate policies, and are not anticipated to negatively affect climate resiliency. While induced growth associated with the Proposed Project could affect the climate resiliency of the region, significant negative impacts are not anticipated because any future development—particularly for housing and businesses and transportation systems—would be undertaken pursuant to State and local planning and other requirements that are intended in part to maintain or increase climate resilience. Therefore, the Proposed Project is not anticipated to have significant adverse climate resilience effects.

3.7.6 BMPs and Mitigation Measures

The following measures are proposed to avoid, reduce, and mitigate the significant effects that the Preferred Action Alternative would have on climate change and on the climate resiliency of the affected area.

The Preferred Action Alternative incorporates project design GHG reduction measures as related to its direct process emissions control measures that will reduce GHG emissions (see Table 3.7-13).

Table 3.7-13 Project Design GHG Reduction Measures – Quantified GHG Emissions Reductions[1]

Mitigation Measure	Operations Avoided Emissions (metric tons per year, GWP20)			
	Scope 1 CO_2e	**Scope 2 CO_2e**	**Scope 3 CO_2e**	**Total Emissions**
F-GHGs and N_2O Used in Thin Films	117,567	--	--	117,567
Fuel Combustion in PEECs, POUs, and RCS	19,881	--	15,132	35,013
Fuel Combustion in WBVs – Operating Limits	569,302	--	434,776	1,004,078
Fuel Combustion in Boilers – Operating Limits	3,838,342	--	2,931,346	6,769,688
Fuel Combustion in Emergency Generators – Operating Limits	59,872	--	18,951	78,823
Heat Transfer Fluids Chosen	28,617	--	--	28,617
Biological Wastewater Treatment (Micron Campus and IWWTP) – Aerobic Digestion Only	159,179	--	--	159,179
Use of Rail Spur vs. Truck for Aggregate Material Delivery	6,354	--	2,014	8,368
4 MW Solar Panels	--	457	--	457
Total	4,799,571	457	3,402,220	8,201,791
	Mobile Source Avoided Emissions (metric tons per year, GWP20)			
	2031 Avoided Emissions		**2041 Avoided Emissions**	
EV Charging Stations – Micron Campus	2,658		2,658	
Operating Shuttle Buses for Construction Workers[2]	11,160		13,312	

1. While not necessarily mitigation measures under NEPA, the items in this table represent all GHG emissions reduction measures considered as part of project design quantified for Micron's CLCPA Analysis.
2. Consistent with traffic study completed in Section 3.11 (Transportation and Traffic). Includes direct and upstream emissions.

To further avoid and minimize GHG emissions and effects to climate change and climate resiliency during construction and operations, Micron would implement the BMPs noted within this section and additionally in Table 3.7-14.

Table 3.7-14 BMPs for GHGs and Climate Change

Activity	BMP	Benefits
Operations	Reduce GHG emissions associated with gases and heat transfer fluids by researching and implementing low global warming potential alternatives, where feasible.	Minimizes the GHG emissions emitted by the Proposed Project.
Operations	Optimize process equipment and install abatement to reduce GHG emissions to support a global commitment of an absolute 42% reduction of Scope 1 GHG emissions in 2030 from baseline year of 2020.	Minimizes the GHG emissions emitted by the Proposed Project.
Operations	Reduce energy consumption and GHG and air pollutant emissions associated with electricity consumption through increased energy-efficiency measures: Achieve Gold LEED status for all fabs, and commercially reasonable efforts to achieve Platinum LEED status for all office buildings. Install on-site renewable energy systems and on-site battery storage systems to supplement the Proposed Project's energy supply to the extent practicable.	Optimizes avoidance of GHG emissions resulting from required on-site energy utilization.
Operations	Reduce energy consumption and GHG and air pollutant emissions associated with electricity consumption energy efficiency measures, where feasible: Optimize tool processes to reduce power consumption. Use energy efficient heating, ventilation, and air conditioning equipment. Use light-emitting diode fixtures where feasible and appropriate. Benchmark Facility energy use performance.	Optimizes avoidance of GHG emissions resulting from required on-site energy utilization.

Micron also has committed to reduce its Scope 2 emissions by purchasing 100 percent carbon-free electricity utilizing power purchase agreements and RECs for the power consumption of the Micron Campus, thus avoiding up to approximately 2.4 MMT of CO_2e.

When compared to pre-mitigation GHG emissions, Micron avoids approximately 77 percent of potential GHG emissions due to project design components, direct process emissions control measures, BMPs, and mitigation measures. NYSDEC will also be reviewing Micron's CLCPA Analysis for consistency with New York State's ability to meet its statewide GHG emission limits. NYSDEC may require additional or revised climate-related mitigation measures pursuant to the CLCPA than those identified above.

3.8 SOLID WASTE, HAZARDOUS WASTE, AND HAZARDOUS MATERIALS

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative relating to solid waste, hazardous waste, and hazardous materials. The section provides an overview of each of these concepts under Legal and Regulatory Setting, below.

The Proposed Project would generate different volumes of solid and hazardous waste based on construction and operation activities, and would require use and storage of certain hazardous materials. Overall, Micron would be subject to Federal and State solid and hazardous waste management regulations and would work with permitted vendors to arrange for transportation, shipment, and disposal of waste at facilities authorized to receive industrial and other waste.

3.8.1 Legal and Regulatory Setting

In general, laws relating to "solid" waste encompass all forms of waste or "discarded material" whether in solid or non-solid form. "Hazardous" waste is generally a subset of solid waste subject to specialized controls based on its distinct characteristics. "Hazardous materials" is a broader term that generally refers to various types of materials that may be present on an existing property but have not yet been discarded as waste, or materials that may pose hazards for purposes of transport, shipment, storage, and use. Different laws and regulations, and the agencies that administer and enforce them, may refer to the same materials in different ways. For example, the USEPA may refer to a discarded chemical substance as a "hazardous waste," but the U.S. Department of Transportation (USDOT) may regulate the same substance as a "hazardous material" for transportation in commerce.

Residential and commercial generators of non-hazardous household or municipal solid waste generally participate in local solid waste collection programs. New York State regulations define solid waste as discarded materials including solid, liquid, semi-solid, or contained gaseous material resulting from commercial, industrial, municipal, and other operations or from residential activities, including materials that are recycled or that may have value (6 NYCRR Part 360). Part 360 regulates the following categories of non-hazardous solid waste, among others:

- Municipal solid waste (MSW) is residential, commercial, or institutional waste, or any component or combination thereof, excluding construction and demolition debris and biosolids, unless they are commingled with MSW.
- Tree debris is waste consisting of tree and shrub parts, including branches, stumps, trunks, and other similar woody vegetation.
- Construction and demolition debris (CDD) is waste resulting from the construction, remodeling, repair, or demolition of structures, buildings, or roads; CDD includes excavated material, construction waste, and demolition waste.
- Recyclables are components of waste that exhibit the potential to be recycled.
- Industrial waste is waste generated by manufacturing or industrial processes.

- Regulated medical waste (RMW) is waste generated in diagnosis, treatment, or immunization of humans or animals, in human or animal research, or in production and testing of biologicals, except for hazardous waste and household medical waste.

Commercial and industrial generators of solid and hazardous waste are generally subject to the Resource Conservation and Recovery Act (RCRA) and RCRA regulations implemented and enforced by USEPA, with certain states authorized to adopt, implement, and enforce the RCRA regulations and related solid and hazardous waste requirements at the state level. Under RCRA, "hazardous waste" is generally waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment (see 42 U.S.C. § 6903(5)). Waste generally is designated as hazardous waste under RCRA either because it is specifically listed as hazardous waste under the RCRA regulations or because it exhibits the characteristics of ignitability, corrosivity, reactivity, or toxicity (40 C.F.R. Part 261). Hazardous waste is generated from many sources, ranging from industrial manufacturing process wastes to batteries, and may come in many forms, including liquids, solids, gases, and sludges. A hazardous waste must be managed under all of the RCRA "cradle to grave" requirements, meaning from the time it is created, to while it is transported, treated, or stored, to the time it is disposed (see 40 C.F.R. Parts 262-264). Universal waste is a subset of hazardous waste including more common materials, such as batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans (6 NYCRR Part 370.2).

USDOT regulates the interstate and intrastate transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA) and related regulations at 49 C.F.R. Parts 100-180, which define hazardous materials broadly to include hazardous substances, hazardous waste, and other categories of hazardous materials defined in the regulations. Under these regulations, no person may offer (ship) or accept a hazardous material for transportation in commerce unless that person is registered and the hazardous material is properly classified, packaged, labeled, and in proper condition for shipment as required under relevant law. USEPA and USDOT jointly require the use of the Uniform Hazardous Waste Manifest form to track the types and quantities of hazardous waste and other materials that all generators transport or offer for transport for off-site treatment, recycling, storage or disposal (see 40 C.F.R. Part 262).

For purposes of Section 3.8, the term "hazardous materials" also includes: "hazardous chemicals" defined under the Emergency Planning and Community Right-to-Know Act (EPCRA); "regulated substances" defined under the USEPA Risk Management Program (RMP); "chemical substances" defined under the Toxic Substances Control Act (TSCA); "pesticides" defined under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); "petroleum bulk storage" and "oil" defined under USEPA and NYSDEC regulations; "chemical bulk storage" defined under NYSDEC regulations; and "industrial discharge" defined under NYSDEC SPDES regulations.

Table 3.8-1 identifies the laws and regulations relevant to the analysis of the handling, storage, transportation, and disposal of solid waste, hazardous waste, and hazardous materials associated with the Proposed Project and Connected Actions. There are no local hazardous waste or hazardous materials laws or regulations that would apply to the Proposed Project.

Table 3.8-1 Legal and Regulatory Setting

Law or Regulation	Description
Federal	
Resource Conservation and Recovery Act (RCRA) Regulations, including 40 C.F.R. Parts 239-259, Management of Non-Hazardous Solid Waste, and 40 C.F.R. Part 262, Standards Applicable to Generators of Hazardous Waste	RCRA solid waste regulations establish general guidelines for the management of non-hazardous solid waste. The guidelines are generally implemented at the state level and are primarily focused on facilities that thermally process or dispose of municipal solid wastes, persons or facilities that generate or manage residential, commercial, or institutional wastes, and states developing solid waste management plans. RCRA regulations also define when non-hazardous secondary materials destined for use as fuels or ingredients in combustion units qualify as solid wastes regulated under the CAA, which are regulated in New York State by NYSDEC. RCRA regulations also establish standards for the characterization, transportation, storage, and disposal of hazardous waste, and prescribe requirements to obtain USEPA hazardous waste generator ID numbers, hazardous waste accumulation time and quantity limits, and recordkeeping and reporting requirements. NYSDEC is authorized to implement RCRA in lieu of USEPA in New York State.
Hazardous Materials Transportation Act (HMTA) Regulations, 49 C.F.R. Parts 100-180	Prescribes requirements and procedures applicable to offerors and shippers of hazardous materials, including requirements for registration, preparation of materials for transport, recordkeeping and reporting, and emergency preparedness.
Emergency Planning and Community Right-to-Know Act (EPCRA), 40 C.F.R. Parts 300-399	Requires compliance with the Tier II reporting program under EPCRA Section 312, which requires facilities that store hazardous chemicals above threshold quantities to report their inventory to State Emergency Response Commissions (SERCs), Local Emergency Planning Committees (LEPCs), and local fire departments. Also requires compliance with the Toxics Release Inventory (TRI) Program under EPCRA Section 313, which supports informed decision-making by communities, government agencies, companies, and others relating to toxic chemical releases and pollution prevention activities reported by industrial and Federal facilities.
Clean Air Act Amendments of 1990, Section 112(r), Accidental Release Prevention / Risk Management Plan Rule, 40 C.F.R. Part 68	Provides guidance for chemical accident prevention for facilities using substances that pose the greatest risk of harm from accidental releases and requires the development of a RMP to reduce chemical risk at the local level. RMP information assists local fire, police, and emergency response personnel (who must prepare for and respond to chemical accidents), and is useful to citizens in understanding chemical hazards in local communities.
Toxic Substances Control Act (TSCA) Regulations, 40 C.F.R. Parts 700-799	Regulates the manufacture, import, use, processing, distribution, and disposal of chemical substances and mixtures. USEPA maintains a TSCA inventory of chemicals in commerce and uses tools such as pre-manufacture notices, use and disposal restrictions, testing, reporting, and recordkeeping requirements to manage chemical risks. TSCA also regulates special hazards (substances that might pose an unreasonable

	risk to human health that are not addressed under other hazardous substance regulations). TSCA also includes specific restrictions or reporting requirements for: polychlorinated biphenyls (PCBs); asbestos; radon; lead-based paint; mercury; formaldehyde in composite wood products; and per- and polyfluoroalkyl substances (PFAS).
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. § 136 et seq.	Regulates the registration, distribution, sale, and use of pesticides in the U.S.
Oil Pollution Prevention Regulation, 40 C.F.R. 112	Regulates the prevention of discharge of oil into navigable waters and prescribes requirements for preparation of Spill Prevention, Control, and Countermeasure (SPCC) Plans.
National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300	Provides a nationwide "blueprint" for responding to oil spills and hazardous substance releases via a comprehensive system of accident reporting, spill containment, and cleanup.
State	
ECL Article 27 (Collection, Treatment, and Disposal of Refuse and Other Solid Waste), and related NYSDEC regulations, 6 NYCRR Part 360 Series	Regulates various aspects of solid waste planning and practices at the state and local levels, including generation reduction and management, permit requirements for management and disposal facilities and waste transporters, regulated waste management and disposal methods, and requirements for the establishment of electronic recycling centers by electronic manufacturers. Also regulates management of solid waste and CDD, including transport, recycling, reuse, and disposal, and prescribes requirements for beneficial use of soil, fill, and other materials.
NYSDEC Hazardous Waste Management Regulations, 6 NYCRR Parts 370-372	Prescribes requirements for the identification, storage, management, transport, and disposal of hazardous waste pursuant to NYSDEC's authorization to implement RCRA in lieu of USEPA. The regulations authorize NYSDEC to adopt and enforce regulations, issue permits, conduct inspections, provide technical assistance, and gather and process data related to waste management in New York State, including for Large Quantity Generators (LQGs) of hazardous waste (generators of 1,000 kilograms or more of hazardous waste per month (approximately tpy).
NYSDEC Waste Transporter Regulations, 6 NYCRR Part 364	Requires transporters of regulated waste generated or disposed of within New York State to obtain a waste transporter permit or registration, depending upon the waste type, including requirements for transporting in authorized vehicles and to authorized transfer, storage, treatment and disposal facilities, and for reporting waste amounts and types transported to each facility.
NYSDOT Transportation of Hazardous Materials Regulations, 17 NYCRR Part 820.8	Prescribes requirements for shippers and carriers of hazardous materials, including requirements prior to offering materials for transport and shipment of hazardous materials based on USDOT regulations at 49 C.F.R. Parts 100-199, and prescribes further requirements for hazardous materials shipping, including a requirement for the shipper to have 24/7 emergency response support for hazardous

	materials spills prior to and during transit, and incident reporting guidance.
NYSDEC Chemical Bulk Storage (CBS) Program, 6 NYCRR Parts 597-598	Regulates the registration and management of regulated tanks in compliance with applicable regulations for storage and handling of hazardous substances and requires the preparation of a Spill Prevention Report (SPR) prior to receipt of chemicals.
NYSDEC Petroleum Bulk Storage (PBS) Program, 6 NYCRR Part 613, and Major Oil Storage Facility (MOSF) Program, 6 NYCRR Part 610	Regulates PBS registration and MOSF licensing, management of tank systems storing petroleum, and prescribes requirements for preparation of SPCC Plans.
Local	
Onondaga County Recycling Law, Local Law No. 2 of 2012	Requires waste generators to separate recyclable items at the source.
Onondaga County Flow Control Law, Local Law No. 3 of 2012 and Local Law No. 5 of 2003	Establishes waste hauling service requirements, including that solid waste be sent to municipally owned waste disposal facilities within the Comprehensive Solid Waste Management System. Several materials are excluded from the definition of “solid waste” under Local Law 3 of 2012, including CDD.
Town of Clay Code, Chapter 194, Solid Waste	Regulates municipal waste haulers and the collection of MSW consistent with Onondaga County’s flow control requirements. Chapter 194 does not pertain to disposal of industrial or hazardous waste.
Town of Cicero, Chapter 177, Solid Waste	Regulates solid waste haulers and the collection of MSW consistent with Onondaga County’s flow control requirements. Chapter 177 does not pertain to disposal of industrial or hazardous waste.

Table 3.8-2 lists the relevant permits and registrations that would be required for hazardous wastes and materials associated with the Proposed Project, except for permits and registrations relevant to air emissions (see Section 3.6, Air Quality). There are no permits or registrations that would be required for non-hazardous solid waste associated with the Proposed Project.

Table 3.8-2 Relevant Permits, Licenses, and Registrations

Agency	Permit / License / Registration
USEPA	USEPA ID Number for Hazardous Waste Generators
USDOT	USDOT Hazmat Registration
NYSDEC	Chemical Bulk Storage (CBS) Registration
NYSDEC	Petroleum Bulk Storage (PBS) Registration
NYSDEC	Major Oil Storage Facility (MOSF) License

3.8.2 Affected Environment

The study area for solid and hazardous waste and hazardous materials is the five-county region, which was selected as an appropriate geographic area for purposes of evaluating the relationship of the alternatives to the regional capacity for solid and hazardous waste disposal and handling of hazardous materials. For information on the study area methodology, see Appendix K-1.

The study area includes the Town of Clay and the Town of Cicero and encompasses the WPCP (where the Micron Campus would be built), the proposed Rail Spur Site, and the proposed Childcare Site. The study area also includes the existing utility properties, easement areas, and rights-of-way where the Connected Actions would occur, including locations for proposed new structures at the National Grid Clay Substation, OCWA Terminal Campus, and OCWA LOWTP, and the new OCDWEP IWWTP that would be built at the Oak Orchard site. For additional information on the Connected Actions, see Section 2.1.

3.8.2.1 Phase I Environmental Site Assessment Reports

To identify existing environmental conditions at the locations where the Proposed Project would be built, AKRF, Inc. (AKRF) completed three Phase I Environmental Site Assessment reports (Phase I ESAs) in February 2024 on behalf of Micron: one for the western portion of the WPCP; one for the eastern portion of the WPCP, the majority of the proposed Rail Spur Site, and the proposed Childcare Site; and one for a remaining portion of the proposed Rail Spur Site. As part of the second Phase I ESA, AKRF also conducted a limited assessment of existing properties where the proposed new natural gas line and industrial wastewater conveyance would be built as part of the Connected Actions.[78]

The Phase I ESAs compiled the documented environmental history of the above sites through a review of environmental databases, aerial photographs, and other readily available historic documents, including two previous Phase I ESA reports and a series of Transaction Screening Assessment reports for 55 individual lots on the WPCP. The Phase I ESAs primarily identified minor environmental conditions relating to historic residential and agricultural uses in the assessed areas. Based on these findings, AKRF did not recommend undertaking Phase II ESAs (which would involve more invasive site investigations). The full Phase I ESAs are included in Appendices K-3 through K-5.

AKRF recommended that Micron develop a SMMP to manage potential localized releases from historic underground storage tanks or other sources through soil characterization and handling and other contingency measures, consistent with established industry standards and accepted regulatory practices for site redevelopment projects in New York State. Accordingly, Micron prepared a Draft SMMP, which is included in Appendix K-7. The SMMP is discussed further below under Construction Effects for the Preferred Action Alternative (see Section 3.8.3.2).

[78] The second Phase I ESA also assessed a buffer zone between the proposed natural gas line and industrial wastewater conveyance where the proposed National Grid electric transmission lines would primarily be located. Although the electric transmission lines are being fully analyzed in a separate regulatory process before the New York State Public Service Commission, the Phase I ESA included a review of any environmental database results for the buffer zone.

3.8.2.2 Existing Waste Generation and Material Storage

Existing solid and hazardous waste generation and hazardous materials storage at the Proposed Project and Connected Action locations is relatively limited.

As described in Section 3.1 (Land Use, Zoning, and Public Policy), the WPCP currently includes four single family homes and formerly included residences along Burnet Road, Caughdenoy Road, and NYS Route 31 that have since been vacated and removed. The proposed Childcare Site formerly included a single-family home and barn that have since been vacated, and the barn has been removed. These residences generate or previously generated household solid waste that is or was collected by the Onondaga County Resource Recovery Agency (OCRRA) via contracted private haulers. All but two municipalities in Onondaga County rely on OCRRA for solid waste and recycling collection, food waste composting, and recycling and disposal facility services (see Section 3.8.2.3).

The proposed Rail Spur Site is undeveloped and vacant and does not currently generate solid waste. Neither the WPCP nor the proposed Rail Spur or Childcare Sites are known to have generated hazardous waste. The Phase I ESAs discussed in Section 3.8.2.1 evaluated each of these sites to determine the potential to encounter hazardous materials from past site activity during site redevelopment as part of the Proposed Project.

The Proposed Project also would include 360,000-500,000 sq. ft. of leased warehouse space (the Warehouse Site) within an existing facility in an industrial or similarly zoned area within 20 miles of the WPCP. Although the Warehouse Site has not yet been selected, most existing warehouse space within the study area would be likely to host tenants that do not generate hazardous waste or store hazardous materials on-site, generate minimal amounts of universal waste, and rely on private waste hauler collection of commercial MSW.

The National Grid Clay Substation, located on Caughdenoy Road, is developed with electric infrastructure and access roads, but otherwise comprises open space and forested areas. The substation is a RCRA Very Small Quantity Generator (VSQG) and currently has a petroleum bulk storage capacity of 1,850 gallons but does not have chemical bulk or non-bulk containers of hazardous materials on-site. National Grid GRS 147, located at 4459 NYS Route 31, is developed with a gravel area with above-ground equipment and subsurface infrastructure, is surrounded by a chain-link fence, and is accessed via a gravel driveway. Neither the Clay Substation, GRS 147, nor the roadway easements and undeveloped areas where the proposed new gas line would be built currently generate solid, hazardous, or universal waste.

OCWA operates the existing LOWTP, RWPS, Terminal Campus, and associated water transmission mains, which are all developed sites. The LOWTP and Terminal Campus are RCRA VSQGs and have a combined chemical bulk storage capacity of 30,720 gallons, and the Terminal Campus has a petroleum bulk storage capacity of 3,420 gallons. The OCWA sites do not have non-bulk containers of hazardous materials on-site. The OCWA facilities currently generate limited amounts of hazardous and universal waste, MSW, and recyclables.

OCDWEP operates the existing OOWWTP at the Oak Orchard site, which includes a developed area, a solar panel array, and forested areas and wetlands. The OOWWTP is a RCRA VSQG and currently has 22,640 gallons of chemical bulk storage consisting of sodium bisulfite

(1,090 gallons), caustic soda sodium hypochlorite (7,550 gallons), and aluminum sulfate (14,000 gallons), and a petroleum bulk storage capacity of 4,500 gallons. The OOWWTP currently generates solid waste. The proposed industrial wastewater conveyance route consists of roadway easements and undeveloped areas that do not currently generate solid or hazardous waste.

3.8.2.3 Existing Solid Waste Management

Existing residential, commercial, and industrial non-hazardous solid waste generated in the study area, including MSW, is primarily collected by OCRRA via contracted private haulers. OCRRA operates three main MSW facilities in Onondaga County: the Rock Cut Road (RCR) Transfer Station and the Onondaga County Waste-to-Energy (WTE) Facility in Jamesville, and the Ley Creek Transfer Station in Liverpool. OCRRA also operates two compost sites: the Jamesville Compost Site and the Amboy Compost Site in Camillus. Waste Management Recycle America and SMR Fibre in Liverpool accept commercial recyclables. Camillus Landfill is a privately owned landfill in Onondaga County. Additional solid waste disposal facilities outside of Onondaga County include the Oswego County Energy Recovery Facility and Bristol Hill Landfill, Madison County Landfill, Cortland County Landfill, Seneca Meadows Landfill in Waterloo, and the High Acres Landfill & Recycling Center in Monroe County.

For additional information on these solid waste disposal facilities, see Appendix K-2.

Currently, certain municipalities in Onondaga County contract with private haulers for curbside residential pickup of both MSW and recyclables for delivery to the RCR Transfer Station or the WTE Facility, or residents contract directly with haulers for pickup. The RCR Transfer Station and the WTE Facility have a collective MSW capacity of approximately 1,790 tons per day. The RCR Transfer Station operated well under its permitted capacity of 800 tons per day from 2021 through 2023 (OCRRA, 2023). During the same period, the WTE Facility had just over 30 tons per day in remaining capacity (Covanta, 2024). Overflow from the WTE Facility is sent to a NYSDEC-permitted municipal landfill, such as Seneca Meadows Landfill.

OCRRA previously permitted the Ley Creek Transfer Station to accept up to 1,200 tons per day of MSW, CDD, and single-stream recyclables generated within OCRRA's service area, but the station is currently closed, undergoing demolition, and OCRRA anticipates opening a new Ley Creek transfer station in 2028 capable of handling 1,200 tons of waste per day. This work is independent of the Proposed Project and subject to OCRRA's pending application with NYSDEC to renew and modify its permit to accommodate the new station.

The Jamesville and Amboy Compost Sites accept residential, commercial, and municipal yard waste (grass, leaves, and branches); the Amboy Compost Site also accepts stumps, logs, and residential and commercial source-separated organics (OCRRA, 2023). Trunks measuring less than 10 feet in length may be accepted at OCRRA compost sites. Other facilities, such as Lan-Co Companies, Inc. in North Syracuse, also accept tree debris and clean soil from site clearing and excavating activities. Clifton Recycling (Syracuse) is a private facility that accept stumps and root clusters. Various pallet manufacturers, sawmills, and mulch manufacturers are within the study area and could be contacted for tree debris recycling opportunities (see Appendix K-2).

Privately owned landfills in Onondaga County, including Camillus Landfill, accept non-processible MSW, CDD, and industrial waste from within the County. RMW in the County is collected by contracted private haulers and transported to facilities permitted to accept such waste by NYSDEC and the New York State Department of Health (NYSDOH).

Commercial and industrial facilities in the study area typically hire private haulers to deliver solid waste to OCRRA or private transfer stations. Industrial waste must be brought to a disposal facility permitted by NYSDEC or another out-of-state regulatory agency. Commercial recyclables are collected by private haulers and are brought to local recycling facilities such as Waste Management Recycle America and SMR Fibre.

3.8.2.4 Existing Hazardous Waste Management

Hazardous waste generators in the study area typically contract with private haulers authorized by NYSDEC and other out-of-state agencies to transport hazardous waste to permitted hazardous waste treatment, storage, and disposal facilities. Some types of hazardous waste may be transported to out-of-state facilities for reuse and recovery, such as fuel blending and energy recovery facilities with approved cement kilns, including Veolia in Middlesex, New Jersey, Green America in Hannibal, Missouri, and Systech in Fredonia, Kansas.

3.8.3 Environmental Consequences

3.8.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The proposed Rail Spur and Childcare Sites would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. Based on the Phase I ESA findings, there are no known significant health risks associated with the Proposed Project or Connected Action sites.

Although there are other announced or planned projects within the study area that would potentially result in increased generation of solid waste, hazardous waste, or hazardous materials under the No Action Alternative (see Section 3.1, Land Use, Zoning, and Public Policy), existing solid waste disposal facility capacity and other existing measures are anticipated to be adequate to accommodate those projects.

Therefore, the No Action Alternative would not result in any significant effects relating to solid waste, hazardous waste, or hazardous materials.

3.8.3.2 Preferred Action Alternative

Construction Effects

Solid Waste

Table 3.8-3 below shows the estimated quantities of the different types of non-hazardous solid waste and reusable or recyclable material that construction of the Proposed Project would generate, and the anticipated disposal and recycling methods that would be used for different waste and material types over the entire 16-year construction period. For information on the construction timeframes associated with the Proposed Project components, see Section 2.1. For further details on the Micron recycling programs noted in Table 3.8-3, including Micron's reuse, recycle, and recovery (RRR) and PaintCare programs, see Appendix K-6 and Appendix K-12. Construction activities would not be required for the Warehouse Site, which would lease commercial or industrial space in an existing building.

Micron would construct the Proposed Project in accordance with its SMMP (a Draft SMMP is included in Appendix K-7) and Construction Waste Management Plan (CWMP), included in Appendix K-8. Micron would implement the CWMP prior to executing construction work, which would aid in managing at least 75 percent of construction waste through the RRR program as part of its efforts to pursue Leadership in Energy and Environmental Design (LEED) Gold or Platinum certifications for the proposed Micron Campus fabs and administration buildings and the proposed Childcare Site childcare, healthcare, and recreation centers. The CWMP would include procedures governing the separation and disposal of non-hazardous solid waste streams to maximize recyclable content, such as recyclable plastics, cardboard, wood, and metal.

Table 3.8-3 Proposed Project Construction-Related Non-Hazardous Solid Waste and Reusable or Recyclable Material[79]

Material	Disposal Method[80]	Micron Campus	Rail Spur Site	Childcare Site	Total[81]
Solid Waste					
Uncontaminated excavated material ineligible for beneficial use under NYSDEC regulations[82]	Collection via private haulers for transport to landfills; potential use as landfill cover	15,000 CY (25,000 to 34,000 tons)	850 CY (1,400 to 1,900 tons)	500 CY (800 to 1,100 tons)	16,000 CY (27,000 to 37,000 tons)
CDD and paint-related material ineligible for Micron's RRR or PaintCare Programs or otherwise non-recyclable[83]	Collection via private haulers for transport to WTE Facility (for paint-related material) or landfills	CDD: 600 tpy per fab; 5,500 to 6,500 tons total over construction duration; 400 tons for removal of remaining WPCP residential structures Paint-related material: 0.7 tons per fab; 2.8 tons total for all 4 fabs	CDD: 500 tons total over construction duration Paint-related material: negligible	CDD: 300 tpy; 700 to 1,000 tons total over construction duration; 100 tons for removal of remaining residential structure Paint-related material: negligible	CDD: 7,200 to 8,500 tons total over construction duration Paint-related material: 2.8 tons
MSW[84]	Collection via private haulers for transport to WTE Facility or landfills	1,000 tpy; 8,200 to 9,600 tons total over construction duration	(Included within Micron Campus estimate)	30 tpy; 70 to 90 tons total over construction duration	8,300 to 9,700 tons total over construction duration
Reusable or Recyclable Material					
Land and tree clearing debris[85]	Reuse on-site or recycle via local sawmills and mulch processing, compost and topsoil, pallet manufacturing, and biomass power generating facilities	445 acres (31,000 tons of forestry material) (including from wastewater pumping station area in northwest corner of WPCP)	22 acres (1,500 tons of forestry material)	Negligible	467 acres (32,500 tons of forestry material)
Excavated material eligible for beneficial use under NYSDEC regulations	Reuse or recycle via beneficial use in accordance with 6 NYCRR § 360.13; source receiving facilities for uncontaminated soil and manufacture of topsoil, resiliency projects, or port projects	1.48 million CY (2.48 to 3.37 million tons)	84,100 CY (138,900 to 189,400 tons)	49,500 CY (81,700 to 111,400 tons)	1.62 million CY (2.70 to 3.67 million tons)
CDD and paint-related material eligible for Micron RRR or PaintCare Programs or otherwise recyclable	CDD: various RRR methods: recycle at cement plant; crush for reuse as aggregate; recycle at mill (mulched/chipped, particle board); recycle as scrap metal; or recycle back to cardboard market Paint-related material: recycle via PaintCare program	CDD: 2,500 tpy per fab; 22,000 to 25,800 tons total over construction duration Paint-related material: 6.3 tons per fab; 25.2 tons total for all 4 fabs	CDD: not estimated (see footnote 6) Paint-related material: negligible	CDD: 800 tpy; 2,200 to 3,000 tons total over construction duration (including potential future expansion area) Paint-related material: negligible	CDD: 24,200 to 28,800 tons total over construction duration Paint-related material: 25.2 tons
Used oil (from construction equipment)	Recycle used oil for processing	6 tons per fab; 24 tons total for all 4 fabs	Negligible	Negligible	24 tons

[79] Except as otherwise noted, all estimated quantities in Table 3.8-3 are conservative approximations based on Micron engineering estimates using analogous global high-volume manufacturing information and data from Micron's Boise and Taiwan facilities.

[80] Specific anticipated disposal methods would be subject to vendor availability.

[81] Totals may not sum due to rounding.

[82] Estimated excavated material tonnage ranges are provided to account for differences in density between soil and rock, based on information from the FHWA Project Development Design Manual, Earthwork Design (FHWA, 2024).

[83] The CDD quantities presented for the Micron Campus and Childcare Site reflect Micron's target of handling at least 75 percent of waste via its RRR program. The RRR component of the CDD quantities for the Rail Spur Site was not estimated, but the entity constructing and operating the Rail Spur Site would implement a Waste Management Plan that would include separation and disposal of waste streams to maximize recyclable content, such as plastics, cardboard, and wood.

[84] The MSW quantities presented reflect Micron's target of handling at least 75 percent of construction MSW via its RRR Program.

[85] Forestry material tonnage estimates are based on information from the U.S. Forest Service Cost Estimating Guide for Road Construction, Division 200 Earthwork (USFS, 2020).

Spent aerosol cans	Recycle	< 0.25 tons per fab; < 1 ton total for all 4 fabs	Negligible	Negligible	<1 ton
RRR (from diverting MSW to RRR Program)	Recycle	2,900 tpy; 24,500 to 28,700 tons total over construction duration	(Included within Micron Campus estimate)	80 tpy; 200 to 260 tons total over construction duration	24,700 to 29,000 tons total over construction duration

Overall, construction of the Proposed Project would produce the various estimated quantities of non-hazardous solid waste and reusable or recyclable material shown Table 3.8-3. Non-hazardous solid waste from construction activities would include excavated material ineligible for beneficial use, non-reusable or recyclable CDD and paint-related material, and MSW. Reusable or recyclable material would include land and tree clearing debris, excavated material eligible for beneficial use, CDD and paint-related material eligible for Micron's RRR or PaintCare programs or recyclable by other means, used oil, and spent aerosol cans.[86]

Based on the land and tree clearing acreages described in Section 3.2 (Geology, Soils, and Topography), construction of the Proposed Project would yield approximately 32,500 total tons of forestry material, which would be processed (e.g., mulched) on-site and reused as cover material to reduce erosion, help establish vegetation, or serve other construction purposes and thereby reduce the need for off-site hauling. Any remaining tree debris not reused on-site would be recycled at local sawmills and mulch processing, compost and topsoil, pallet manufacturing, and biomass power generating facilities.

Based on the excavated material amounts described in Section 3.2 (Geology, Soils, and Topography), construction of the Proposed Project would yield approximately 2.70 to 3.67 million total tons of excavated material that would likely be eligible for beneficial use under NYSDEC regulations. The reuse of excavated material as fill material would be subject to a case-specific Beneficial Use Determination (BUD) under 6 NYCRR § 360.12 or the pre-determined beneficial use requirements in 6 NYCRR § 360.13, whereas the import and use of fill material would be subject to a case-specific NYSDEC BUD and/or permit, including a NYSDEC-approved inspection and monitoring program under the supervision of a Qualified Environmental Professional or professional engineer of record (*see* 6 NYCRR § 360.13). When designated under a BUD and/or permit, fill material ceases to be considered a solid waste for purposes of NYSDEC solid waste management regulations, provided that the fill material is managed consistent with the BUD and/or permit.

Most of the excavated material from the Proposed Project sites would likely be categorized under NYSDEC regulations as "Fill Type 1" consisting of soil, sand, gravel, or rock generated outside of New York City with no evidence of historical contamination and containing no non-soil constituents (*see* 6 NYCRR § 360.13).[87] As described in Section 3.2 (Geology, Soils, and Topography), Micron would reuse excavated soils within the Proposed Project area to the greatest extent practicable, where reuse would be consistent with soil stability requirements. Micron would be responsible for ensuring that all excavated material is managed in accordance with its SMMP (see Appendix K-7 containing a Draft SMMP) and applicable NYSDEC regulations. The proportion of excavated material not reused on-site would be recyclable at receiving facilities for uncontaminated soil and topsoil manufacturing, in resiliency projects, or at other infrastructure

[86] Construction activities would not be required for the Warehouse Site because Micron would lease an existing warehouse facility near the Micron Campus.

[87] Excavated material from limited areas of the WPCP and proposed Rail Spur Site would warrant further evaluation prior to categorization as "Fill Type 1", including areas of the WPCP within the vicinity of the former Michael Airfield southeast of the WPCP and another airfield northwest of the WPCP, and the area of the proposed Rail Spur Site within the vicinity of (north-adjacent to) the property at 4975 NYS Route 31. For additional detail on these areas, see Appendices K-3 through K-5.

projects.

The remaining excavated material ineligible for beneficial use, except for potentially contaminated material (see under Hazardous Materials, below), would generate approximately 27,000 to 37,000 tons of non-hazardous solid waste, which would be categorized as NYSDEC Fill Types 2 through 5. Fill Type 2 consists of soil, sand, gravel or rock with no non-soil constituents and no objectionable petroleum or other odors; Fill Type 3 consists of soil, sand, gravel, and de minimis amounts of brick, concrete, or asphalt, no other non-soil constituents, and no objectionable petroleum or other odors; and Fill Types 4 and 5 do not have a volume limit for granular, compactible non-soil constituents (6 NYCRR Part 360.13). The non-hazardous excavated material ineligible for beneficial use would be collected via private haulers for transport to landfills such as Cortland County Landfill (remaining life of approximately 13 years), Camillus Landfill (remaining life of approximately 11 years based on permitted capacity not yet constructed), High Acres Landfill (remaining life of approximately 31 years based on permitted capacity not yet constructed), or the Madison County Landfill (remaining life of 121 years based on authorized capacity not yet constructed). In recent years, the Cortland and Madison County Landfills received approximately 4,000 to 5,000 tpy less than they are currently permitted to accept (see Appendix K-2).

As shown in Table 3.8-3, the Proposed Project would generate approximately 7,200 to 8,500 total tons of CDD and 2.8 total tons of paint-related material that would not be reusable or recyclable. Waste CDD from the proposed Micron Campus would include construction and demolition masonry debris, concrete masonry units, lumber, scrap metal (from electrical conduits, piping, and rebar), concrete washout, and cardboard. Waste CDD from the proposed Rail Spur Site would include materials from construction of the locomotive shed and office building, plates, spikes, and bolts for the rail line, and scrap railroad ties. Waste CDD from the proposed Childcare Site would include materials from construction of the childcare, healthcare, and recreation centers, such as concrete masonry units, lumber, scrap metal, concrete washout, and cardboard. The non-recyclable paint-related waste would include liquid paint and thinner waste and stained rags and would be sent to the WTE Facility for energy recovery.

The waste CDD would need to be collected by private haulers for transport to various NYSDEC-authorized solid waste disposal facilities, including the RCR Transfer Station, the WTE Facility, the Camillus Landfill, the High Acres Landfill, and other independent facilities. According to OCRRA, the RCR Transfer Station is permitted to accept up to 800 tons per day of CDD on a first-come, first-served basis (see Appendix K-10). Taken together, the estimated CDD and paint waste annual totals would represent less than one percent of the total CDD tonnage collected by the Camillus and High Acres Landfills in 2023. With the phasing of the Micron Campus, it is anticipated that the regional disposal facilities could adjust their services as necessary to meet the new demand as it gradually increases, both related and unrelated to Micron. For further information on regional solid waste disposal facility capacity, see Appendix K-2.

Separate from the above, the Proposed Project would yield approximately 24,200 to 28,800 total tons of CDD and 25.2 total tons of paint-related material that would be reusable or recyclable as part of Micron's RRR and PaintCare programs, or that would otherwise be recyclable at local CDD recycling facilities, including Lan-Co Companies, Inc., Brickyard Pit, Northeast Reclaimed Materials in Syracuse, Vitale Sand & Gravel, and the commercial paint recycling facility, Empire Recycled Paint. Asphalt, concrete, clean soil, and rock could be recycled at the listed CDD recycling facilities, and useful compounds would be extracted from liquid paint to create new products at Empire Recycled Paint.

Construction of the Proposed Project would generate approximately 8,300 to 9,700 total tons of MSW, which would be collected via private haulers for transport to the WTE Facility for processing, capacity permitting, with overflow sent to a landfill as bypass waste following OCRRA's standard protocol. MSW generated annually during construction would represent less than one percent of the MSW collected by OCRRA in 2023.

At this stage of the design of the Connected Actions, National Grid, OCWA, and OCDWEP do not yet have estimates relating to solid waste that would be generated from construction, but National Grid, OCWA, and OCDWEP each anticipate that any solid waste generated from construction of the proposed Connected Actions would be minimal based on the scope of the Connected Action construction activities.

Hazardous Waste

Proposed Project construction activities would not be anticipated to generate more than minimal amounts of hazardous waste, which Micron would manage in accordance with applicable Federal and State requirements for handling, packaging, labeling, and shipping hazardous waste to authorized off-site disposal facilities. Micron also would manage any hazardous waste generated from construction activities in accordance with its CWMP (included in Appendix K-8).

At this stage of the design of the Connected Actions, National Grid, OCWA, and OCDWEP do not yet have estimates relating to hazardous waste that may be generated from construction, but National Grid, OCWA, and OCDWEP each anticipate that any hazardous waste generated from construction of the proposed Connected Actions would be minimal based on the scope of the Connected Action construction activities.

Hazardous Materials

In general, construction of the Proposed Project would not be anticipated to involve the use of hazardous materials other than those associated with typical construction materials, including paints, resins, epoxies, and solvents, which would be delivered to construction staging areas in drums and totes, and petroleum fuels and oils used for construction equipment, which would be delivered in bulk on a periodic basis. Micron would be responsible for ensuring that any hazardous materials are stored at construction staging areas in secure temporary enclosures with appropriate secondary containment measures, in accordance with its CWMP (Appendix K-8) and applicable Federal and State hazardous material storage requirements.

As noted in Section 3.8.2.1, Micron has prepared a Draft SMMP, which is included in Appendix K-7, to manage any potentially localized releases from historic underground storage tanks or other sources of hazardous materials that could be encountered during construction of the Proposed Project. Subject to review of the plan by NYSDEC, Micron would implement the SMMP prior to initiating any Proposed Project site disturbance, excavation, or earthwork activities (discussed in Section 3.2, Geology, Soils, and Topography), consistent with established industry standards and accepted regulatory practices for site redevelopment projects in New York State. The Draft SMMP includes soil characterization and handling and other contingency measures that

Micron would employ to manage any potential contaminated soil or groundwater or localized releases that may be encountered during site redevelopment.

Micron also would adhere to the SMMP in the course of managing excavated soil and fill material for potential off-site reuse or disposal, in accordance with NYSDEC regulations governing fill material at 6 NYCRR Part 360 and the CWA Section 404(b)(1) Guidelines. Micron would be responsible for ensuring that any potentially contaminated excavated material is managed in accordance with its SMMP and applicable NYSDEC regulations, including by ensuring that any soil disturbance in potential areas of concern complies with applicable testing requirements and that any contaminated excavated material is segregated and disposed of at an appropriate permitted facility (see Appendix K-7).

In general, construction of the proposed Connected Actions also would not be anticipated to involve the use of hazardous materials other than minimal amounts associated with typical construction materials. National Grid does not anticipate the use of hazardous materials during construction of its proposed improvements, or any change to the Clay Substation's existing petroleum bulk storage capacity. At this stage of the design of OCWA's proposed improvements, OCWA does not yet have estimates relating to hazardous materials that would be used or stored on-site to facilitate construction. OCWA does not anticipate the need to increase the LOWTP or Terminal Campus existing chemical or petroleum bulk storage capacities for construction. OCDWEP anticipates that construction of the proposed IWWTP at the Oak Orchard site and the proposed industrial wastewater conveyance would require small quantities of diesel fuel and oil for construction vehicle and equipment operation and maintenance.

OCWA indicated that the potential existence of hazardous materials on undeveloped property associated with the improvements would not be determined until design commences. National Grid, OCWA, and OCDWEP would each develop and implement their own SMMPs for construction of the Connected Actions and would ensure management of any hazardous materials in accordance with their respective procedures.

Operational Effects

Solid Waste

Table 3.8-4 below shows the estimated quantities of the different types of non-hazardous solid waste and reusable or recyclable material that Proposed Project operations would generate.

Table 3.8-4 Proposed Project Operation-Related Solid Waste vs. Reusable or Recyclable Material[88]

Material	Disposal Method[89]	Fab 1	Fabs 1-2	Fabs 1-3	Fabs 1-4	RSS	CCS	WHS	Total (2041 Estimates)
Solid Waste									
Industrial waste (tpy)	Private hauler transport to private industrial waste disposal facilities	800	1,300	1,800	2,300	11	N/A	N/A	2,311
Commercial MSW (tpy)	Private hauler transport to municipally owned waste disposal facilities	15,800	25,000	34,300	43,500	N/A	N/A	57	43,557
General MSW (tpy)	Private hauler transport to municipally owned waste disposal facilities	N/A	N/A	N/A	N/A	13	13	N/A	26
RMW (30-gallon bins per year)[90]	Private hauler transport to RMW disposal facilities	11	22	34	45	N/A	76	N/A	121
Reusable or Recyclable Material									
Micron RRR or other recyclable material (tpy)	(See Table 3.8-5 below)	32,200	51,100	70,000	88,800	12	39	N/A	88,851

[88] Estimated quantities of industrial waste, commercial MSW, and RMW for the fabs are conservative approximations based on Micron engineering estimates using analogous global high-volume manufacturing information and data from Micron's Boise and Taiwan facilities. Incremental increases from the addition of each fab would be less than the first fab estimate due to economies of scale. MSW from the Childcare Site and the Warehouse Site (conservatively assuming a 500,000-sq. ft. leased warehouse space) is estimated based on standard commercial employee waste generation rates adapted from New York City figures (New York City Mayor's Office of Environmental Coordination, 2021) and guidance on employees per industry (New York City Department of City Planning, 2023).

[89] Specific anticipated disposal methods would be subject to vendor availability

[90] RMW from the fabs would be generated primarily from sharps containers and bloodborne pathogen waste. The RMW from the Childcare Site would be generated from healthcare center operations.

Overall, operation of the Proposed Project would produce the various estimated quantities of non-hazardous solid waste and RRR or recyclable materials shown Table 3.8-4. As indicated, these are conservative estimates; actual quantities may be lower.

Beginning with the start of Fab 1 operations in 2029, the Micron Campus would generate approximately 800 tpy of non-hazardous industrial waste, 15,800 tpy of commercial MSW, 11 thirty-gallon bins per year of RMW, and 32,200 tpy of materials that could be diverted to Micron's RRR Program. By full build-out in 2041, these figures would increase to approximately 2,300 tpy of non-hazardous industrial waste, 43,500 tpy (120 tons per day) of commercial MSW, 45 thirty-gallon bins per year of RMW, and 88,800 tpy of RRR materials.

Operation of the Rail Spur Site would generate approximately 11 tpy of industrial waste, 13 tpy of general MSW, and 12 tpy of RRR materials. Operation of the Childcare Site would generate approximately 13 tpy of general MSW, 76 thirty-gallon bins per year of RMW, and 39 tpy of RRR materials. The Warehouse Site would be estimated to generate approximately 57 tpy of MSW.

Operation of the National Grid and OCWA improvements would be expected to generate only limited amounts of general MSW and RRR materials. Operation of the OCDWEP IWWTP would generate an industrial waste stream of wet liquid discharge solids, dry biosolids and grit/screening materials in quantities to be determined based upon flow rates, Micron pretreatment, and final design of the IWWTP. Operation of the IWWTP also would generate approximately 3.7 tpy of general MSW and 9.6 tpy of RRR materials.

The industrial waste from operation of the Micron Campus would consist primarily of expired non-hazardous chemicals. Micron would return these chemicals to their manufacturers for reprocessing where practicable, subject to manufacturer capacity. The remaining chemicals would be collected via licensed private haulers for transport to permitted private facilities authorized to receive industrial waste, such as High Acres Landfill in Fairport, NY. Non-hazardous drummed used solvents that would not be diverted to Micron's RRR Program would be collected via private haulers for transport to authorized off-site incineration facilities. The industrial waste from operation of the Rail Spur Site would consist of 2,500 gallons per year of waste oils and lubricants, twelve 55-gallon drums per year of oily rags, and three 55-gallon drums per year of oil filters. The non-RRR portions of this waste would be collected via licensed private haulers for transport to private industrial waste facilities and landfills. The non-hazardous solid waste generated at the IWWTP would either be disposed of at the WTE Facility for energy recovery or, depending on the waste type, collected via private hauler for transport to landfills.

The commercial MSW from Proposed Project operations would consist primarily of various types of materials (e.g., metals, drums and cylinders, E-waste, batteries, plastic, foam, cardboard, scrap wood, office supplies, etc.). The non-RRR portions of this commercial MSW would be collected via licensed commercial haulers for transport to municipally owned waste disposal facilities within the OCRRA service area in accordance with the Onondaga County Flow Control Law, OCRRA's Comprehensive and Local Solid Waste Management Plans (LSWMPs) (OCRRA, 2023), and OCRRA policies. The commercial MSW would be transported first to the WTE Facility, capacity permitting, to maximize energy recovery. Overflow amounts would be sent to the RCR Transfer Station, which could receive up to 800 tons per day, or other NYSDEC-authorized solid waste disposal facilities or landfills as bypass waste following OCRRA standard protocols. As noted in Section 3.8.2.3, independent of the Proposed Project, OCRRA currently has an application pending with NYSDEC to renew and modify its permit for the Ley Creek Transfer Station. Subject to permit approval, OCRRA anticipates opening a new Ley Creek Transfer Station in 2028 capable of handling 1,200 tons per day on a first-come, first-served basis (see Appendix K-10), in addition to the RCR Transfer Station's current 800 ton per day capacity. Micron is currently evaluating these and other local and regional facilities to determine whether they would be able to meet the Proposed Project's near-term and long-term disposal needs and would be responsible for selecting private waste haulers and disposal facilities as the build-out progresses. With the phasing of the Micron Campus, it is anticipated that these disposal facilities could adjust their services as necessary to meet the new demand as it gradually increases, both related and unrelated to Micron. For further information on regional solid waste disposal facility capacity, see Appendix K-2.

By full build-out in 2041, the approximately 120 tons per day of commercial MSW would be transported off-site via approximately 12 trucks per day (based on a 40-yard compactor and dumpster with a weight limit of 10 tons). All transport of solid waste would be performed by licensed haulers in accordance with applicable Federal, State, and local regulations. Collection by private haulers would be limited to 6:00 am to 6:00 pm in accordance with Chapter 194 of the Town of Clay Code. For information on anticipated hauler truck routes, see Appendix K-6.

General MSW from Proposed Project facility operations would include food waste, restroom waste (such as paper towels), textiles (mops, wipes, and cleaning materials), and miscellaneous material (food wrappers, packaging, and general office waste). Micron would place receptacles throughout the facilities for recyclables, food waste, and MSW. Dumpsters and compactors would be located around the campus, generally in loading bays, to collect solid waste. In general, these wastes would be temporarily stored in designated areas or dropped in on-site dumpsters and compactors in loading bays to be compacted and packaged prior to collection. Solid waste collection protocols would require separation of waste streams and handling and management procedures to ensure worker and environmental safety (see discussion of Tier II and Form R reporting under Hazardous Waste, below). Used oil storage areas would include secondary containment in accordance with 40 C.F.R. § 112.8(c)(2) and 6 NYCRR Parts 374 and 613.

A recent waste audit at other Micron locations estimated that approximately 24 percent of the general MSW consisted of single use cafeteria goods and paper towels. Recyclables from these waste streams would be collected via private haulers, such as Waste Management, Inc. or Butler Disposal Systems, for transport to area recycling facilities, such as Waste Management Recycle America or SMR Fibre in Liverpool, NY. Micron also would ensure that Proposed Project facility kitchens and eating areas segregate food waste via composting to the greatest extent practicable for on-site reuse, or transport to the Jamesville or Amboy Compost Sites, private compost facilities, or, in coordination with Onondaga County, other potential sites that may be able to beneficially reuse composted material.

RMW generated from Micron Campus medical stations and the Childcare Site healthcare center would be safely stored in secure thirty-gallon biohazard bins prior to collection by private haulers for transport to facilities permitted to accept RMW, such as Environmental Maintenance Service, Inc., Safeguard Solutions, Inc., and Stericycle, Inc.

Overall, Micron would divert non-hazardous solid waste from operation of the Proposed Project to its RRR Program to the greatest extent practicable, with a goal to divert 95 percent of such waste to the RRR Program by the end of 2030. Table 3.8-5 below lists the various types of material that could be diverted to the RRR Program or other recycling pathways instead of waste disposal. For further details on the RRR Program, see Appendix K-6.

Table 3.8-5 Industrial and Commercial Materials for Micron RRR Program

Material	Disposal or Management Method
Industrial Materials for RRR	
Non-hazardous sludge from on-site wastewater treatment	Send to beneficial use vendor or recycle
Non-hazardous drummed used solvents	Recycle (primarily via redistillation) or recovery via fuel blending prior to energy recovery
Non-hazardous contaminated debris (wipes, filters, etc.)	Return to manufacturer or recycle
Used oil	Recycle for reprocessing
Heat transfer fluid and CO2 fire suppression material	Recycle via oil processor; recharge CO2 fire suppression systems
Commercial Materials for RRR	
Metals	Recycle as precious metal or scrap metal
Tires	Recycle subject to manufacturer or recycler capacity
Drums and cylinders	Return to supplier for reuse; recycle subject to manufacturer or recycler capacity
E-waste	Recycle
Alkaline and rechargeable batteries	Recycle subject to manufacturer or recycler capacity
Printer cartridges	Recycle subject to manufacturer or recycler capacity
Plastic	Recycle
Foam	Recycle subject to manufacturer or recycler capacity
Pallets	Reuse or recycle into scrap wood
Scrap wood (mulch, chips, particle board)	Recycle at mill
Cardboard	Recycle via cardboard market
Office supplies	Recycle
Donations and repurposing material (e.g., office equipment and supplies)	Offer to employees for repurposing
Facilities repurposing equipment, etc.	Reuse on-site
Mops, wipes, glove liners	Recycle subject to manufacturer or recycler capacity
Kitchen grease and traps	Recycle as yellow grease

Kitchen scraps	Reuse on-site, OCRRA and/or private compost facility
Landscape compost	Reuse on-site

Upon full buildout of all four fabs, Micron's onsite wastewater pretreatment facility would generate approximately 23,000 tons of by-product sludge per year (or approximately 5,750 tons/yr per fab). Micron's onsite wastewater pre-treatment sludge would be characterized/profiled to determine waste composition and proper disposal options per any applicable waste disposal and BUD regulatory requirements. As part of Micron's RRR sustainability goals, Micron is continuously evaluating beneficial reuse options for its sludge, such as reclamation in cement kilns.

To facilitate the RRR Program, Micron would provide environmental management training to all relevant employees during the new hire orientation to ensure that employees adhere to Micron's procedures to appropriately sort, label, handle, store, and otherwise manage used materials and solid waste, and separate or segregate any material eligible for RRR methods as shown in Table 3.8-5. Micron would conduct general awareness campaigns throughout the year to further engage employees in the RRR Program and solid waste reduction efforts and would place RRR receptacles throughout Proposed Project facilities.

Hazardous Waste

The proposed Micron Campus would be a LQG of hazardous waste. Under USEPA and NYSDEC regulations, an LQG is a facility that generates 1,000 kilograms or more of hazardous waste per month (approximately 13 tpy) or more than 11,000 lbs. of hazardous waste at any one time. LQGs are permitted to store hazardous waste on-site for up to 90 days and must manage hazardous waste in containment buildings, tanks, containers, and drip pads (40 C.F.R. § 267.17(a)(1)-(4); 6 NYCRR Part 372). LQGs must comply with USEPA and NYSDEC uniform hazardous waste manifest requirements (40 C.F.R. Pt. 262, Subpart B; 6 NYCRR Part 372), re-transport requirements (40 C.F.R. §§ 262.30 to 260.33; 6 NYCRR Part 372), and preparedness, prevention, and emergency procedure requirements (40 C.F.R. Pt. 262, Subpart M; 6 NYCRR §§ 373-3.3 to 373-3.4). LQGs in New York State also must submit annual hazardous waste reports to NYSDEC.

As shown in Table 3.8-6, beginning with the start of Fab 1 operations in 2029, the Micron Campus would generate an estimated 18,300 tpy of hazardous waste and 170 tpy of universal waste. By full build-out in 2041, these figures would increase to an estimated 50,300 tpy of hazardous waste and 470 tpy of universal waste.

Table 3.8-6 Micron Campus Operation-Related Hazardous Waste[91]

Category	Fab 1	Fabs 1-2	Fabs 1-3	Fabs 1-4
Hazardous Waste (tpy)	18,300	29,000	39,700	50,300

[91] The estimated quantities of hazardous and universal waste for the fabs are conservative approximations based on Micron engineering estimates using analogous global high-volume manufacturing information and data from Micron's Boise and Taiwan facilities, and are based on a 1.2 million sq. ft. fab size. The incremental increases in the estimated quantities of waste from the addition of each fab would be less than the estimated quantity of waste from the first fab due to economies of scale.

Universal Waste (tpy)	170	270	370	470

As shown in Table 3.8-7, hazardous waste would consist mainly of acidic and solvent waste volumes and would be stored in non-bulk 55-gallon drums or bulk International Organization for Standardization (ISO)-compliant containers. All hazardous waste would be temporarily accumulated in the Hazardous Process Materials (HPM) buildings within each fab (see Section 2.1) in accordance with accumulation period limitations prior to collection for disposal.

Table 3.8-7 Hazardous Waste Accumulation Quantities by Fab[92]

Waste Type	Gallons/day	Gallons/year	Storage Type	Disposal / Management
Acidic Waste	180	64,300	55-gallon drums	Incineration
	1,470	538,000	Bulk ISO containers	RRR
Solvent Waste	210	75,300	55-gallon drums	RRR
	5,010	1,830,000	Bulk ISO containers	RRR

Table 3.8-8 shows the various types of hazardous and universal waste material the Micron Campus would generate and anticipated management or disposal methods and locations. Micron would manage hazardous and universal materials through its reduce, reuse, and recycle (RRR) Program to the greatest extent practicable to reduce the volume of material that would need to be managed as hazardous waste for disposal. For further details on the RRR Program, see Appendix K-6.

Table 3.8-8 Hazardous and Universal Waste Disposal and RRR Management Methods

Waste Type	Disposal Method	Disposal Facility/Location
Hazardous Waste / RRR Material		
Drummed acids (nitric, hydrofluoric, citric, etc.)	Incinerate at USEPA licensed disposal facility	Veolia (Sauget, IL, Port Arthur, TX, or Gum Springs, AR)
Miscellaneous maintenance waste (labpacks, cylinders, expired materials, glues, resins, etc.)		Veolia (Sauget, IL, Port Arthur, TX, or Gum Springs, AR)
Acids ($CuSO_4$, H_2SO_4)	RRR to extent feasible via copper recovery, contaminant removal, and recycling	Veolia (West Carrollton, OH)
Drummed solvent	RRR recovery via fuel blending	Veolia (Middlesex, NJ or West Carrollton, OH)

[92] These estimates may be conservatively multiplied by four to reflect full build-out, but as noted above, the total for four fabs would likely be less than a multiple of four due to economies of scale.

Bulk solvent		Veolia (Middlesex, NJ or West Carrollton, OH)
Solvent and arsenic waste (solids)	RRR arsenic removal, contaminant removal and redistillation, and recycling	Green America (Hannibal, MO)
Universal Waste		
Mercury waste (thermocouples)	RRR recycling via approved recycling facility	Veolia (West Bridgewater, MA)
Batteries		Veolia (West Bridgewater, MA)
Aerosols		Veolia (West Carrollton, OH)

Note: Specific anticipated disposal methods would be subject to vendor availability.

Because the Micron Campus would generate 25 tpy or more of hazardous waste, under NYSDEC regulations, Micron would be required to develop a Hazardous Waste Reduction Plan subject to NYSDEC review and approval. Because the Micron Campus would be an LQG, Micron also would be required to implement a Hazardous Waste Contingency Plan (HWCP) to minimize hazards to the environment or human health from exposure to hazardous waste in the event of a fire, explosion, or release of any hazardous materials (see 40 C.F.R. Pt. 262, Subpart M; 6 NYCRR §§ 372.2(a), 373-3.3, and 373-3.4). Micron would prepare the required plans approximately six months before operations would be anticipated to begin, as sufficient design detail needed to prepare adequate plans would not be available before that time. Micron has prepared an initial outline of its HWCP, which is included in Appendix K-9.

In addition to these plans, Micron would develop and implement a Hazardous Waste Procedure based on its existing procedures at other Micron facilities to govern hazardous waste identification, classification, handling, accumulation, pre-transport, and disposal requirements, requirements to manage leaks and spills, and recordkeeping and reporting requirements. The Hazardous Waste Procedure would include procedures for air emission inspections (see Section 3.6, Air Quality). Micron also would develop and implement a Hazardous Waste Training Procedure outlining the Federal and State (NYSDEC and NYSDOT) training requirements for employees handling hazardous waste. Consistent with these procedures and requirements, in the event of a release, fire, or explosion, Micron's Emergency Response Team (ERT) and environmental compliance department would notify all relevant authorities and assist in emergency response, containment, and cleanup.

Micron would be responsible for ensuring that all waste storage areas are secured and include appropriate secondary containment. Drummed waste would be transported on pallets, and bulk waste would be transported via tanker truck. For information on shipment of hazardous waste, see Hazardous Materials, below.

Permitted private hazardous waste haulers would collect hazardous waste generated by the Proposed Project and bring it to facilities authorized by NYSDEC or analogous out-of-state regulatory agencies for the disposal of hazardous waste in accordance with RCRA regulations. For information on local truck routes anticipated to be used to transport waste away from the Micron Campus to authorized disposal facilities, see Appendix K-6. Micron would use a variety of local, regional, and national waste disposal and materials reuse vendors to appropriately manage hazardous waste and other materials. Micron anticipates that hazardous waste would be sent out-of-state for disposal. Micron would be responsible for selecting specific vendors and disposal facilities as the Proposed Project progresses.

Micron also would develop a universal waste procedure for the Proposed Project to minimize the disposal of universal waste (more common forms of hazardous waste, such as aerosols, batteries, fluorescent bulbs, and mercury-containing equipment) at WTE facilities and landfills. Universal waste would be kept in closed and properly labeled tanks, containers, or transport vehicles prior to transport to approved treatment facilities. See Appendix K-6 and K-12 for more detail.

Micron maintains a waste management strategy for a variety of waste chemistries that includes measures to reduce the amount of chemicals needed to produce semiconductor chips, and is continuing to evaluate options to reuse or recycle hazardous and nonhazardous materials. According to Micron Technology's most recent Sustainability Report, Micron Technology disposed zero hazardous waste in landfills during 2022 and 2023 (Appendix K-11).

Many chemicals used in the chip production process can be reused by other industries. As part of the Proposed Project, Micron would explore various material management and reuse options, including sending certain drummed used acids and metal-bearing acid streams, such as copper sulfate (CuSO4) and sulfuric acid (H2SO4), to an appropriate facility that can lawfully accept and manage the material, for acid and metals reuse or recovery. For example, under certain circumstances, sulfuric acid can be sent for continued use or reuse in cleaning supplies and wastewater treatment. In addition, Micron plans to explore the distillation of isopropyl alcohol and ammonia solutions to reduce waste and to increase potential for valuable reuse off-site. Other material streams such as bulk solvent, drummed solvent, and contaminated debris would be reused or recovered through fuel blending or energy recovery at approved permitted cement kilns that allow kilns to run on waste-derived fuel.

Certain waste streams such as lab waste, cylinders, expired materials, glues, resins, a subset of solvents, and certain acids would likely need to be incinerated at permitted off-site disposal facilities in other states. The percentage of the drummed used solvent that Micron anticipates would be classified as RRR materials (based on information from operation of Micron's Boise, ID fabrication facility in 2023) is approximately 99 percent, with the remaining 1 percent (primarily corrosives) to be managed as non-RRR materials. Micron anticipates using Veolia as its primary RRR materials and waste disposal vendor, but Micron would be responsible for selecting all waste and RRR vendors as needed during operations. Micron would continue to review the waste and reuse facilities to which it would send hazardous waste based on a systematic due diligence process administered by Micron's Global Environmental, Health, and Safety (EHS) Department.

In addition, certain waste streams may contain PFAS, which are essential to the production of modern semiconductors and may be found in: (1) fab infrastructure, tools, and parts; (2) fabrication process chemistries and indirect fabrication support needs; and (3) substances used to create packaging materials for products that incorporate semiconductors (see also Section 3.9.3.2, discussing use and management of PFAS-containing chemicals). Because PFAS-containing fabrication process chemistries (e.g., photolithography, plasma (dry) etch, and wet chemicals) may come into contact with the wafer during the fabrication process, PFAS may be present in process-related wastewater. PFAS also may be present in chemical delivery systems and shipping packaging delivered to the facility. Micron is evaluating potential non-PFAS containing alternatives, but at present, there are no known substitutes for many PFAS uses. Micron would request detailed chemical constituent documentation from its chemical vendors, including PFAS content, which often requires the use of non-disclosure agreements to obtain such information. Sources of PFAS in process chemistries and indirect support needs are anticipated to include photolithography, dry etch, and heat transfer fluids and can range from below 0.1 percent to 100 percent PFAS by weight, depending on the definition of PFAS applied (for instance, the Organisation for Economic Co-operation and Development (OECD) defines PFAS as fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group (–CF3) or a perfluorinated methylene group (–CF2–)) (OECD, 2021). Whereas, New York State uses a different approach, defining PFAS as "a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom." N.Y. ECL Sec. 37-0101(7). Based on this definition, over 10,000 substances may be classified as PFAS. For purposes of the FEIS, the lead agencies did not exclude consideration of any PFAS based on these definitions, taking a broad view to review potential impacts of the Proposed Project. Analytical methods for detecting PFAS in various media are still developing. For instance, USEPA's Method 1633A, which detects 40 PFAS in wastewater, soil, and other aqueous matrices, is pending approval for inclusion in the Code of Federal Regulations, while methods for PFAS detection in air remain in early development. The lack of validated methods for accurately identifying and quantifying PFAS creates challenges for PFAS regulation and management. Government and industry groups, including semiconductor trade groups in which Micron actively participates, are working to advance these capabilities.

In April 2024, USEPA promulgated final maximum contaminant levels (MCLs) in drinking water for six PFAS substances. Although USEPA more recently announced plans to alter the compliance deadline from 2029 to 2031 for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) and rescind requirements for the other four PFAS, USEPA has not yet published a proposed rulemaking. New York State has set drinking water standards for PFOA and PFOS at 10 parts per trillion (ppt) each. NYSDEC also has established guidance values for PFOA and PFOS in raw water sources at 6.7 and 2.7 ppt, respectively (NYSDEC, 2023b). NYSDEC has issued draft guidance (TOGS 1.3.14) to implement these guidance values in SPDES permits issued to POTWs, including the existing OOWWTP (NYSDEC, 2024j).

In May 2024, USEPA finalized a rule designating PFOA and PFOS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 102(a). In addition to bringing these two PFAS into CERCLA's liability framework, the rulemaking also establishes reportable quantity thresholds for releases of these substances to the environment. In February 2024, USEPA proposed a new rule to list nine PFAS as hazardous constituents, which authorizes the Agency to address releases of these PFAS at permitted hazardous waste facilities under the RCRA corrective action requirements (89 Fed. Reg. 8606 (Feb. 8, 2024)). At this time, USEPA has not proposed listing any PFAS as hazardous wastes under RCRA. USEPA also released a final rule under EPCRA that added certain PFAS to the list of Lower Thresholds for Chemicals of Special Concern. This rule increases reporting of PFAS to the TRI beginning with the 2024 reporting year (due July 2025) by eliminating the de minimis exemption that allowed facilities to avoid reporting information on PFAS when those chemicals were used in small concentrations. Under this rule, certain PFAS will be subject to the same reporting requirements as other chemicals of special concern and USEPA will receive more comprehensive data on PFAS. Chemicals of special concern are excluded from the de minimis exemption, may not be reported on Form A (Alternate Threshold Certification Statement), and may have limits on the use of range reporting. In May 2024, USEPA published a new rule adding seven PFAS to the TRI list of reportable chemicals.

Prior to startup of operation, Micron would submit an application to OCDWEP for an IWDP. This application would include a Basis of Design report that specifies a recommended engineering treatment technology for Micron's wastewater. The IWDP would be anticipated to include limits for PFOA and PFOS derived from the existing Oak Orchard WWTP's SPDES permit limits. Micron is evaluating possible wastewater treatment options as the development of technology in this area continues to evolve. Micron would operate a wastewater pretreatment system in accordance with the limits set forth in its IWDP.

Due to rapidly evolving PFAS wastewater treatment technology, Micron continues to assess emerging technologies and will select appropriate solutions for the Proposed Project as project design progresses. Micron is focused on technologies capable of effectively addressing PFAS concentrations at the ppt levels found in semiconductor fabrication wastewater, but that also minimize generation of PFAS-containing waste. For reference, one ppt is equivalent to a single drop of water in twenty Olympic-sized swimming pools. Early evaluations suggest that the most effective wastewater treatment solution for the Proposed Project will involve installation of PFAS segregation technology targeted to the relevant process wastewater streams. Micron's final design will include wastewater treatment for regulated PFAS-containing wastewater that meets current regulatory requirements under New York and Federal law prior to discharge to the IWWTP.

Micron also would segregate process solvent waste containing PFAS from facility wastewater streams to closed bulk storage systems for off-site management by licensed and permitted treatment and disposal facilities. Micron is also focused on identifying appropriate disposal or RRR operations for PFAS-containing wastes, such as solvent waste and end-of-life fab infrastructure (e.g., tools, tubing). Micron would dispose of or otherwise manage waste known to contain regulated PFAS in accordance with applicable regulations and as appropriate given its content and characteristics. In compliance with EPCRA TRI reporting, Micron would report the manufacture, process, or other use of individual TRI-listed PFAS that exceed reporting thresholds. Appendix L-1 provides further detail on the framework for management of PFAS-containing materials that will comply with applicable legal requirements and be consistent with USEPA's interim guidance on destruction and disposal of PFAS and PFAS-containing material.

The Rail Spur Site would generate minimal quantities of universal waste, such as fluorescent bulbs and aerosol cans, and would not otherwise generate hazardous waste. Operation of the Childcare Site and the Warehouse Site would not be anticipated to generate universal or hazardous waste. The National Grid improvements generally would not be anticipated to generate hazardous waste, except that the expanded Clay Substation would potentially generate minimal amounts of hazardous or universal waste consistent with its existing VSQG designation. OCWA anticipates that operation of its off-site utility improvements would generate limited amounts of hazardous and universal waste that would represent minimal to no change compared to its existing operational conditions and VSQG designations. OCDWEP anticipates that operation of the IWWTP would not generate universal or hazardous waste based on the anticipated scope of its operations. The industrial wastewater conveyance would not be anticipated to generate universal or hazardous waste.

Hazardous Materials

As fabs become operational, the Micron Campus would require delivery of various hazardous materials by truck. All hazardous materials would be subject to applicable USDOT and NYSDEC permitting, registration, and reporting requirements. The semiconductor manufacturing process involves the use of chemicals and materials such as photoresists, developers, chemical etchants, dopants, and gases that may be regulated as hazardous materials. Some of these chemicals may be subject to RCRA or related regulations based on hazardous characteristics, including ignitability, corrosivity, reactivity, or toxicity. Examples of the liquid and gas chemicals that would be used at the Micron Campus include HCI, ammonium hydroxide, sodium hydroxide, chlorine, silane, arsine, helium, and hydrogen chloride. To protect public health and the environment, these hazardous chemicals and materials would be properly stored in containers and drums in storage areas with secondary containment to provide added protection in the event of a spill or release.

Table 3.8-9 lists the types of hazardous materials that would be used in the manufacturing process at the Micron Campus, the potential hazards associated with each part of the process, and the controls that would be used to protect worker and public health and safety.

Table 3.8-9 Hazardous Material Types, Hazards, and Controls

Process Area	Hazardous Material Type	Controls
Thin Films (PCVD + DIFI)	Flammable gases, pyrophoric gases, corrosives, toxic gases, oxidizers, asphyxiants, flammable liquids, water reactive substances	Process Equipment Exhaust Conditioner (PEEC) systems, house scrubbers (ammonia and acid), interlocks (prevent tool running when PEEC systems are down), toxic gas monitoring (TGM), ionizing wet scrubbers
Dry Etch	Flammable gases, corrosives, toxic gases, oxidizers, asphyxiants, water reactive substances	Point-of-Use abatement systems, house scrubbers (acid), GHG abatement, interlocks, TGM
Wet Etch	Flammable liquids, corrosives, toxics, oxidizers	House scrubbers (ammonia and acid), leak detection, TGM, VOC units
Photo	Flammable liquids, corrosives, toxics, oxidizers	VOC units, leak detection
CMP	Flammable liquids, corrosives, toxics, oxidizers	Leak detection, house scrubbers

Notes: PCVD = Physical and Chemical Vapor Deposition; DIFI = Diffusion Implant; CMP = Chemical Mechanical Planarization; VOC = Volatile Organic Compound.

Hazardous materials would be stored in the HPM buildings associated with each fab (see Chapter 2, Figure 2.1-4 and Table 2.1-3). Table 3.8-10 lists the quantities and storage methods for specific types of liquid and gaseous chemicals that would be stored on-site.

Table 3.8-10 Hazardous Materials

Chemical Type	Storage Method	On-Site Storage Quantities per Fab
Liquids		
Acidic Solutions	Non-bulk (55-gallon drum)	224,000 lbs. / 17,900 gal.
Acidic Solutions	Bulk (ISO tanker)	1,930,000 lbs. / 155,000 gal.
Caustic Solutions	Non-bulk (55-gallon drum)	200,000 lbs. / 26,300 gal.
Caustic Solutions	Bulk (ISO tanker)	426,000 lbs. / 56,000 gal.
Liquid Corrosives	Non-bulk (55-gallon drum)	1,890,000 lbs. / 148,000 gal.
Liquid Corrosives	Bulk (ISO tanker)	137,000,000 lbs. / 13,500,000 gal.
Flammable	Non-bulk (55-gallon drum)	78,100 lbs. / 9,900 gal.
Flammable	Bulk (ISO tanker)	730,000 lbs. / 112,000 gal.
Peroxide	Bulk (ISO tanker)	1,150,000 lbs. / 124,000 gal.
Gases		
Non-Hazardous	Non-bulk (cylinder)	32,800 lbs.
Corrosive	Non-bulk (cylinder)	230,000 lbs.
Corrosive	Bulk (ISO container)	411,000 lbs.
Flammable	Non-bulk (cylinder)	251,000 lbs.
Oxidizer	Non-bulk (cylinder)	5,800 lbs.
Toxic	Non-bulk (cylinder)	94,600 lbs.

Source: Micron engineering estimates. Notes: Based on global high-volume manufacturing data from Micron's Boise and Taiwan facilities. Gases are pressurized and only reported in pounds.

Micron would be required to manage the delivery of hazardous materials to the Micron Campus and their shipment for off-site disposal under the HMTA and USDOT and NYSDOT regulations. Micron would apply for USDOT registration with the Pipeline and Hazardous Materials and Safety Administration and develop a Safety and Security Plan to adopt relevant personnel and facility security measures and provide USDOT training for relevant personnel (49 C.F.R. § 172.802).

Chemicals would be delivered to the Micron Campus by truck (see Appendix K-6 for information on anticipated truck routes to and from the campus) using a variety of packaging and containment methods, including tanks, drums, and pallets. Micron would maximize the use of closed systems and automation for chemical delivery in accordance with industry standards, and would install and maintain leak detectors and employ toxic gas monitoring for hazardous chemical and gas delivery systems in accordance with State and international fire codes.

Once on the Micron Campus, Micron would store hazardous chemicals in the specially designed HPM buildings as noted above, which would include secondary containment measures, and would track the chemicals as they are transferred to and used in the fabs through an automated chemical management system equipped with unintentional release detection and control mechanisms. Micron would contract with carriers and shippers of hazardous materials that maintain 24/7 emergency response support in the event of hazardous materials spills prior to and during transit, and appropriate incident reporting protocols.

Under EPCRA, Micron would be required to submit Tier II reports listing hazardous chemicals stored on-site above applicable threshold quantities to USEPA, the New York State Division of Homeland Security and Emergency Services, and local fire departments. Micron also would be required to submit TRI data using Form R reports to USEPA by July 1 of each year identifying the chemicals subject to the TRI used on-site and describing the toxic chemical management and release prevention activities that occurred on-site during the previous calendar year, information which USEPA would make publicly available.

In addition, under Section 112(r) of the CAA and USEPA regulations, Micron would develop an RMP for regulated flammable and toxic "extremely hazardous substances" above applicable threshold quantities (40 C.F.R. § 68.130) that would be used in covered on-site processes. Pending further review based on evolving Micron Campus designs, Micron would expect the RMP to cover eight regulated chemicals (ammonium hydroxide, anhydrous ammonia, hydrogen, hydrogen chloride, silane, chlorine, dichlorosilane, and HF) and would evaluate and add additional chemicals to the RMP on a case-by-case basis.

The RMP would incorporate: (1) a hazard assessment detailing the potential effects of any accidental chemical release that could occur at the Micron Campus, with an evaluation of worst-case and alternative accidental release scenarios; (2) a chemical accident prevention program including safety precautions, maintenance and monitoring measures, and employee training; and (3) a chemical accident emergency response program detailing the emergency response procedures Micron would provide for emergency employee care and notify relevant agencies, local first responders, and the public should an accident occur. Copies of the RMP would be provided to local police, fire, and emergency medical response personnel, and the public to foster local community emergency response planning and public awareness. Micron would be required to update and resubmit the RMP to USEPA every five years with a history of any accidents that occurred in the five years prior and share all updates with local emergency responders. In the event of a reportable chemical accident, Micron would be required to hold a public meeting within 90 days following the accident (40 C.F.R. § 68.210(b)).

Under the NYSDEC CBS Program, chemical storage tanks on the Micron Campus would be subject to registration and inspection. Under Federal law and the CBS Program, Micron also would prepare a combined SPCC, SPR, and Process Safety Plan (see Section 3.9, Human Health and Safety) prior to accepting delivery of hazardous chemicals. This plan would incorporate chemical safety-related engineering controls, including secondary containment, overfill protection, and other measures. Micron would update the plan annually.

Micron would hire external contractors for services involving fungicides, insecticides, or rodenticides and require such contractors to purchase, track, and dispose of chemicals in accordance with applicable regulations. Micron would not use herbicides on-site and would not anticipate the need to store fungicides, insecticides, or rodenticides on-site.

Under Federal law and the NYSDEC PBS and MOSF Programs, fuel storage tanks on the Micron Campus also would be subject to various requirements. Although oil and petroleum products are not directly used in the semiconductor manufacturing process, they support ancillary facility operations, such as emergency generators, fire water pumps, operating machinery (compressors, generators, expanders), elevators, recycling balers, electrical transformers, on-site utility vehicles and equipment, and on-site kitchens. The Micron Campus would have an aggregate aboveground oil or petroleum product storage capacity of approximately 1.55 million gallons, which would store diesel, gasoline, lubricating oil, hydraulic fluid, dielectric oil (mineral, silicon, or vegetable oil), transformer oil, and cooking oil.

Based on this storage capacity, Micron would be responsible for preparing the SPCC portion of the combined plan noted above prior to construction of on-site fuel storage tanks and receipt of oil or petroleum products. The SPCC plan would incorporate appropriate bulk fuel storage tank and container registration and licensing, spill prevention, contingency planning, incident reporting, emergency response coordination, and recordkeeping procedures in accordance with Federal and State requirements. Once aggregate oil and petroleum product storage in stationary tanks on-site exceed 400,000 gallons, Micron would be required to obtain an MOSF license from NYSDEC. Emergency generators on-site would be self-contained on concrete pads adjacent to the buildings they serve. Diesel fuel for the generators would be delivered by a commercial fuel vendor directly to the generator tanks or fire pump tanks, which would be equipped with secondary containment.

Operation of the Rail Spur Site, Childcare Site, and Warehouse Site would not be anticipated to involve the use, generation, or storage of hazardous materials.

Operation of the National Grid improvements would not require chemical bulk storage or non-bulk containers of hazardous materials, or any increase in petroleum bulk storage capacity.

OCWA anticipates that operation of its off-site utility improvements would require an increase in chemical bulk storage at the LOWTP Site and the Terminal Campus Site from a combined 30,720 gallons to approximately 50,000 gallons and an increase in petroleum bulk storage at the Terminal Campus Site from 3,420 gallons to approximately 5,000 gallons. The increase in storage volume would only require an update to OCWA's existing registration with NYSDEC, and spill prevention measures would continue in accordance with applicable regulations.

Operation of the IWWTP would require the liquid chemical bulk storage quantities shown in Table 3.8-11 (showing quantities associated with each fab).

Table 3.8-11 IWWTP Chemical Bulk Storage Quantities

Chemical Type	Storage Type	Tanks	Quantity per Fab
Phosphoric acid (70%)	Bulk Tank	2	7,400 gal.
Sulfuric acid (93%)	Bulk Tank	2	7,400 gal.
Sodium hydroxide (50%)	Bulk Tank	2	7,400 gal.
Neat polymer	Bulk Tank	2	7,400 gal.
HCL (32%)	Bulk Tank	3	30,000 gal.
Supplemental carbon	Bulk Tank	2	30,000 gal.

Magnesium hydroxide	Bulk Tank	2	7,500 gal.
Aluminum sulfate	Bulk Tank	2	20,000 gal.

All chemical storage, use, and transfer areas will have containment.

OCDWEP would plan to amend the Oak Orchard site's existing CBS and PBS tank registrations to accommodate these storage needs, subject to further evaluation as IWWTP planning progresses.

Growth Inducing Effects

Induced growth resulting from the Proposed Project would generate additional solid waste over time. To develop conservative projections of how much additional solid waste would be generated, this analysis multiplied the higher induced household growth estimates included in Section 3.15 (Socioeconomic Conditions) by average county household size to derive estimated induced population growth, and multiplied those population figures by the average daily MSW produced per person, based on available county-specific MSW data.[93] The per capita MSW figures represent the total MSW collected within each county's solid waste management system, including residential, commercial, and institutional MSW. Table 3.8-12 shows the resulting incremental MSW projections from induced growth.

Table 3.8-12 Induced Growth Incremental MSW Projections

Locality	Baseline	Incremental Change by 2041
Onondaga County	276,396 tpy (2023)	35,200 tpy* / 12.7% increase
-- Town of Clay	13,886 tpy (2024)	5,800 tpy / 41.8% increase
-- Town of Cicero	(No data available)**	3,500 tpy increase
Oswego County	52,095 (2022)	6,800 tpy / 13.1% increase
Madison County	53,339 (2023)	5,100 tpy / 9.6% increase
Cortland County	26,325 (2022)	2,200 tpy / 8.4% increase
Cayuga County	44,565 tpy (2020)	3,500 tpy / 7.9% increase

Notes: *The Onondaga County 2041 projection includes the 2041 projections for the Towns of Clay and Cicero. **MSW collection data specific to the Town of Cicero was not available from the Town of Cicero's contracted hauler.

As shown in the table, induced growth under the Preferred Action Alternative would be anticipated to gradually result in an increase of approximately 35,200 tons of MSW per year

[93] The household unit growth projections detailed in Section 3.15 (Socioeconomic Conditions) estimated the creation of approximately 16,568 new households in Onondaga County by 2041 at the low end and 23,518 new households at the high end. In 2023, the U.S. Census Bureau estimated that Onondaga County has approximately 198,700 households. The average household size is 2.4 for Onondaga and Oswego Counties, 2.3 for Cayuga and Cortland Counties, and 2.5 for Madison County, based on 2018-2022 data from the 2022 American Community Survey (ACS) (USCB, 2022a). Per capita waste generation rates are provided in the LSWMPs for Onondaga County (3.43 lbs. per person per day), Cayuga County (3.23 lbs. per person per day), and Madison County (4.67 lbs. per person per day) (OCRRA, 2023; Cayuga County Department of Planning & Economic Development, 2023; Madison County Department of Solid Waste, 2023). Onondaga County rates were used for Oswego and Cortland Counties.

(approximately 96 tons per day) within Onondaga County by 2041. Combined with the MSW generated by the Preferred Action Alternative in 2041, approximately 78,800 tons (216 tons per day) would be generated, an approximately 29 percent increase from the amount of MSW collected by OCRRA in 2023.

As noted above, independent of the Proposed Project, OCRRA currently has an application pending with NYSDEC to renew and modify its permit for the Ley Creek Transfer Station to accept up to 1,200 tons per day of MSW (and CDD) on a first come first served basis, which would be in addition to the RCR Transfer Station's current 800 ton per day capacity.

Micron is currently evaluating these and other local and regional facilities to determine whether they would be able to meet the Proposed Project's near-term and long-term disposal needs. With the phasing of the Micron Campus, it is anticipated that these disposal facilities could adjust their services as necessary to meet the new demand as it gradually increases, both related and unrelated to Micron, and that disposal capacity would be available at landfills throughout the region (see Appendix K-2).

Of the four other counties for which induced growth was estimated, Oswego County is anticipated to experience the greatest induced growth and therefore the greatest increase in MSW generation (similar to Onondaga County, an approximately 13 percent increase). The Oswego County Energy Recovery Facility operated well below its permitted capacity in 2021 and 2022, and the Bristol Hill Landfill's remaining life is estimated to be more than 25 years based on remaining authorized landfill capacity not yet constructed (see Appendix K-2). These facilities (with additional constructed landfill capacity) could accommodate the approximately 6,800 tpy of MSW from induced growth within Oswego County by 2041.

Although Madison County Landfill's remaining life based on currently constructed capacity would likely be exhausted by the time Proposed Project construction commences, its remaining life is estimated to be more than 121 years based on remaining authorized landfill capacity not yet constructed. However, the County is concerned with the long-term financial sustainability of its solid waste management system, which currently is funded solely by user fees, and is evaluating options to optimize operations to self-fund capital projects, including seeking a permit modification from NYSDEC to accept additional tonnage, including from outside of Madison County (see Appendix K-2). If Madison County proceeds with constructing a portion of the remaining authorized capacity, then the user fees generated from the MSW from induced growth within Madison County could contribute to the landfill's financial sustainability. If the landfill is instead closed, Madison County would construct a transfer station to handle waste previously sent to the landfill.

Cayuga County's most recent LSWMP projects a decrease in population between 2023 and 2032 of approximately 3,149 people, whereas induced growth under the Preferred Action Alternative would be anticipated to result in a maximum increase of approximately 2,562 people in the County by 2041. Therefore, it is possible that Cayuga County's overall population could decline over the next decade even with induced growth from the Proposed Project.

The Cortland County Landfill operated approximately 4,000 tons below its permitted capacity on average from 2018 to 2022 (see Appendix K-2). Therefore, the landfill could potentially accommodate the approximately 2,200 tpy of MSW from induced growth within

Cortland County by 2041. However, the landfill's estimated remaining life of 13 years would need to be re-evaluated over the next decade to determine how much longer it could continue to operate.

Induced growth under the Preferred Action Alternative would not be anticipated to generate significant quantities of hazardous waste that could not be accommodated at existing hazardous waste disposal facilities, including out-of-state facilities. The Micron Campus would continue to be the primary generator of hazardous waste within the area. Induced residential growth would generate general household waste but would not be anticipated to generate hazardous waste. Although induced growth may include new businesses that generate hazardous waste, such as semiconductor supply chain companies locating to the area, these businesses would generally be subject to the same Federal and State regulatory regimes applicable to the Proposed Project discussed in this section, and the quantities of hazardous waste they would generate would generally be transported to specialized off-site facilities authorized to accept hazardous waste, including out-of-state facilities, that accept hazardous waste from across multiple states.

Taken together, the growth inducing effects of the Preferred Action Alternative could result in the further gradual generation of significant quantities of solid and hazardous waste over time, but the longer-term modification and expansion of solid waste disposal facilities in the five-county region would be anticipated to accommodate those gradual, longer-term waste increases.

Similarly, induced growth under the Preferred Action Alternative would not be anticipated to result in significant effects relating to the use, storage, and management of hazardous materials. Although, as noted above, induced growth may include new businesses locating to the area that would need to use and store additional quantities of hazardous materials, these businesses generally would be subject to the same Federal and State hazardous materials regulations applicable to the Proposed Project discussed in this section, and would be responsible for preparing their own plans to manage potential accidents and releases, such as under applicable local and community right-to-know programs.

Summary of Effects

In sum, over time, the Preferred Action Alternative would result in the generation of substantial quantities of solid and hazardous waste and use of substantial quantities of hazardous materials, primarily associated with the construction and operation of the Micron Campus. However, with certain permit modifications and expansions, solid waste disposal facilities in the five-county region are anticipated to be able to accommodate the solid waste flows from the Proposed Project. In addition, Micron's RRR Program and other waste minimization procedures would help reduce waste-to-landfill volumes.

The Micron Campus would manage hazardous waste in compliance with all applicable Federal and State requirements and would contract with private haulers to collect and safely transport hazardous waste to off-site treatment, storage, and disposal facilities authorized to collect such waste, including relevant out-of-state facilities. Micron also would manage hazardous and universal materials through its RRR Program to the greatest extent practicable to reduce the volume of material that would need to be managed as hazardous waste. Micron would be required to manage all hazardous materials in compliance with applicable Federal and State laws and regulations, including the HMTA, EPCRA, USEPA RMP regulations, and the State CBS, PBS, and MOSF Programs, and would prepare combined plans to safely manage all hazardous materials consistent with these requirements.

Generation of solid or hazardous waste or the use of hazardous materials from construction and operation of the Connected Actions would be negligible to limited and would be subject to similar regulatory requirements.

Increased solid and hazardous waste generation and use of hazardous materials over time associated with induced population growth would similarly be managed consistent with the requirements and plans described above.

Therefore, the Preferred Action Alternative would not result in significant adverse effects relating to the generation of solid or hazardous waste or the management of hazardous materials.

3.8.4 BMPs and Mitigation Measures

As described above, Micron's implementation of the Proposed Project would be subject to several Federal and State regulatory programs in this area and extensive plans and procedures developed pursuant to those programs. As part of or in addition to those plans, Micron also would implement several BMPs, as shown in Table 3.8-13 below, to address solid and hazardous waste generation and the use of hazardous materials over time and minimize the amount of waste that is generated and requires disposal.

Table 3.8-13 Best Management Practices

Category	Activity	BMP	Purpose
Solid Waste	Construction	To the extent practicable, excavated material to be removed would be beneficially reused in accordance with 6 NYCRR § 360.13.	Minimizes excavated material sent to landfill.
Solid Waste	Construction; Operations	Separate and dispose debris in a manner that maximizes recycling, where feasible.	Minimizes solid waste generation.
Solid Waste	Construction; Operations	Achieve 95% reuse, recycling, and recovery of solid waste by end of calendar year 2030.	Enhances recycling and minimize solid waste generation.
Solid Waste	Construction; Operations	Eliminate or reduce certain solid waste streams by maximizing reuse, recovery, and recycle management methods when feasible. Use waste stream segregation to facilitate recycling or reuse.	Minimizes solid waste generation.
Solid Waste	Construction; Operations	Achieve LEED Gold and/or Platinum certification for the Fab and Administration buildings and the childcare canter, healthcare center, and recreation center.	Minimizes solid waste generation through goal of managing at least 75 percent of the waste generated through the RRR program.

Solid Waste	Operations	Segregate food waste for composting and potentially other beneficial uses.	Minimizes solid waste generation.
Hazardous Waste	Operations	Achieve near-zero hazardous waste-to-landfill by end of calendar year 2030.	Minimizes hazardous waste-to-landfill.
Hazardous Waste	Operations	Employ material management methods, including sending certain drummed used acids and metal bearing acid streams to an appropriate facility for acid and metals reuse or recovery.	Minimizes hazardous waste-to-landfill.
Hazardous Waste	Operations	Material streams such as bulk solvent, drummed solvent, and contaminated debris would be reused/recovered in fuel blending/energy recovery at approved permitted cement kilns.	Minimizes hazardous waste-to-landfill.
Hazardous Materials	Operations	Maximize use of closed hazardous material storage systems and optimize use of automated chemical delivery. Install and maintain leak sensors and toxic gas monitoring for hazardous chemical and gas delivery systems per International Fire Code.	Controls toxic or hazardous emissions, minimizing the potential for worker or public exposure, and controls safety hazards.
Hazardous Materials	Construction; Operations	Hazardous chemical storage would include secondary containment to prevent and minimize release to the environment. Spill kits and equipment would be stationed across the site to facilitate quick spill response. Spill kits would be audited to ensure they are in good working condition.	Minimizes the potential for effects on surface and groundwater resources.
Hazardous Materials	Construction; Operations	Micron would prepare a release response procedure and contingency plan to reflect hazardous material storage on the site.	Controls the potential for exposure to hazardous materials, minimizing the potential for worker or public exposure, and controls safety hazards.
Hazardous Materials	Construction; Operations	Micron would maintain an on-site ERT for deployment, if necessary, to assess, manage, and respond to spills and emergency situations. Micron would also maintain on-call contracts with trained professionals to support Micron ERT, as needed or requested.	Minimizes the potential for effects to surface and groundwater resources, as well as the potential for worker or public exposure, and controls safety hazards.
Hazardous Materials	Construction; Operations	Micron would implement an internal chemical management system tracking and hazard communication process.	Controls toxic or hazardous materials, minimizing the potential for worker or public

			exposure and controls safety hazards.

Although the Preferred Action Alternative would result in the gradual generation of significant quantities of solid and hazardous waste and the use of substantial quantities of hazardous materials over the course of the Micron Campus' 16-year construction period and longer-term operation, with certain permit modifications and expansions, solid waste disposal facilities in the five-county region are anticipated to be able to accommodate the waste flows from the Proposed Project. In addition, Micron's RRR Program and other waste minimization procedures would help reduce waste-to-landfill volumes. The Preferred Action Alternative would not result in any significant adverse effects relating to solid waste, hazardous waste, or hazardous materials. Therefore, no mitigation measures are required.

3.9 HUMAN HEALTH AND SAFETY

This section evaluates the effects of the Preferred Action Alternative on human health and safety, which includes an analysis of potential risks to worker and public safety, health, and well-being from construction and operation of the Proposed Project and Connected Actions, and the measures that would be implemented to protect workers and the public from such risks.

3.9.1 Legal and Regulatory Setting

Table 3.9-1 below identifies the Federal, State, and local laws and regulations relevant to the analysis of human health and safety. These include Federal and State laws that prescribe EHS requirements to protect workers and local communities, such as those administered by the Occupational Safety and Health Administration (OSHA), USEPA, NYSDEC, and the New York State Department of Labor (NYSDOL).

Section 3.9 focuses primarily on potential risks associated with the proposed Micron Campus, building on the discussion in Section 3.8 (Solid Waste, Hazardous Waste, and Hazardous Materials). Appendix L-1 provides further detail on the anticipated use of PFAS-containing materials at the Micron Campus and Micron's compliance with applicable legal requirements and planned implementation of BMPs to avoid and minimize risk to human health and safety. For a list of the OSHA general industry and construction standards relevant to semiconductor manufacturing projects, see Appendix L-2. For general information on Micron's Emergency Response Management System (ERMS), see Appendix L-3. For additional discussion of Proposed Project effects on fire departments and emergency medical services that would respond to human health and safety events at Proposed Project facilities, see Section 3.14 (Community Facilities, Open Space, and Recreation). Potential effects on communities with environmental justice concerns are discussed separately in Section 3.16 (Environmental Justice).

Table 3.9-1 Legal and Regulatory Setting

Law or Regulation	Description
Federal	
Occupational Safety and Health Act, 29 U.S.C. § 651 et seq.; OSHA regulations, 29 C.F.R. Parts 1910, 1926	Authorizes the U.S. Department of Labor to set mandatory occupational safety and health standards for certain businesses in all 50 states. OSHA, a division of the U.S. Department of Labor, promulgates both general industry and construction standards, including standards relating to hazard communication, electrical safety, machinery safety, personal protective equipment (PPE), and training.
Hazardous Materials Transportation Act (HMTA), 49 U.S.C. § 5101 et seq.; 49 C.F.R. Parts 100-180	Prescribes requirements and procedures applicable to offerors and shippers of hazardous materials, including requirements for registration, preparation of materials for transport, recordkeeping and reporting, and emergency preparedness.
Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. §	Prescribes requirements for facility emergency planning and emergency release notifications. Requires compliance with the Tier II reporting program under EPCRA Section 312, which requires facilities that store hazardous chemicals

11001 et seq.; 40 C.F.R. Parts 300-399	above threshold quantities to report their inventory to State SERCs, LEPCs, and local fire departments. Also requires compliance with the TRI Program under EPCRA Section 313, which supports informed decision-making by communities, government agencies, companies, and others relating to toxic chemical releases and pollution prevention activities reported by industrial and Federal facilities.
Clean Air Act (CAA) Section 112(r), 42 U.S.C. § 7412(r); Accidental Release Prevention / Risk Management Plan Rule, 40 C.F.R. Part 68	Provides guidance for chemical accident prevention for facilities using substances that pose the greatest risk of harm from accidental releases and requires the development of a RMP to reduce chemical risk at the local level. RMP information assists local fire, police, and emergency response personnel (who must prepare for and respond to chemical accidents), and is useful to citizens in understanding chemical hazards in local communities.
State	
NYSDEC Chemical Bulk Storage (CBS) Program, 6 NYCRR Parts 597-598	The New York State Hazardous Substances Bulk Storage Act and implementing regulations at 6 NYCRR Parts 597- 598 govern bulk storage of hazardous substances in New York State to protect human health and the environment from risks posed by storage of large quantities of hazardous materials. NYSDEC is charged with promulgating and enforcing standards for design, operation, and maintenance of hazardous bulk storage facilities to prevent accidental releases or spills.
New York State Labor Law Article 27	Prescribes workplace safety and health requirements to protect employees who might otherwise fall outside of OSHA jurisdiction. Section 27-d of the Labor Law, which is part of the NYS Health and Essential Rights Act, requires private employers with at least 10 employees to allow the formation of Workplace Safety Committees (WSCs). WSCs foster collaboration between employees and employers to identify and address potential hazards, helping to reduce workplace injuries, accidents, and illnesses across New York State. The NYSDOL Safety, Health, & Essential Rights (SHER) Program oversees the WSCs, Airborne Infectious Disease Exposure Prevention Plans, the Warehouse Worker Protection Law, the COVID Paid Sick Leave program, and the Construction Industry Fatality Registry.

3.9.2 Affected Environment

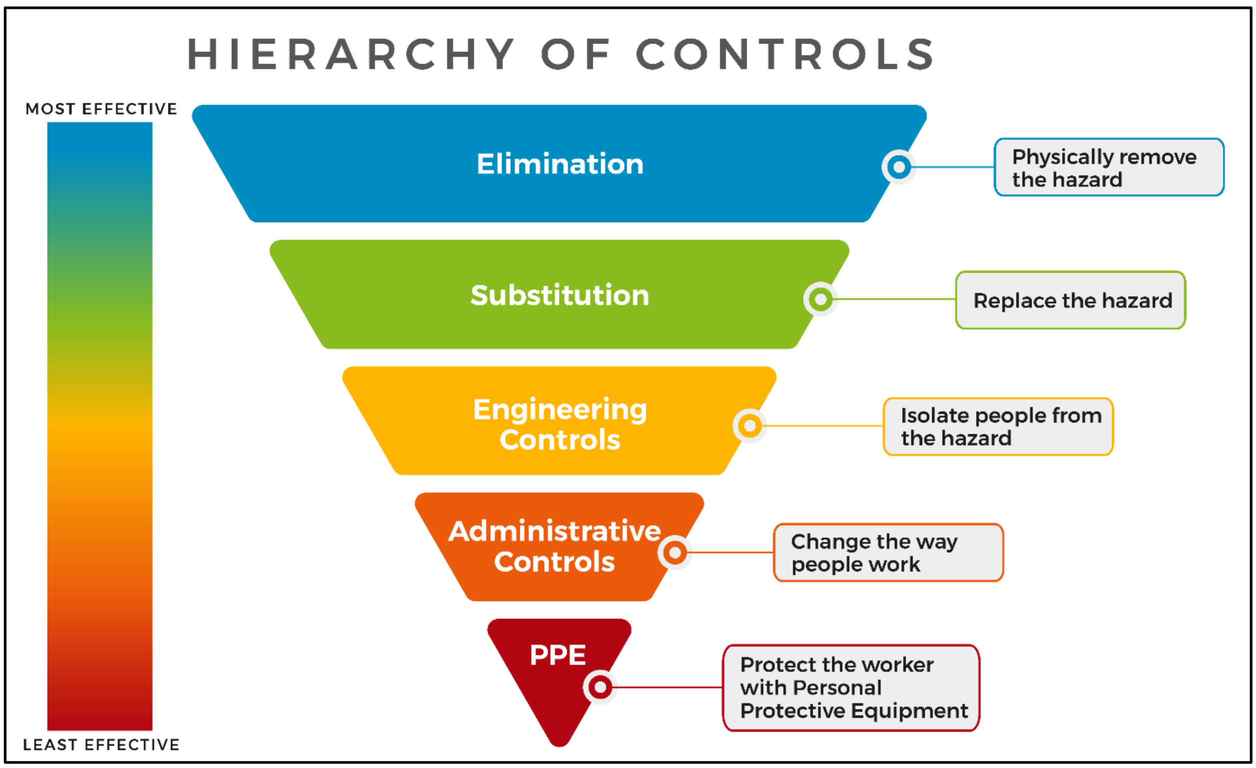
Over the past 30 years, many semiconductor manufacturing-related health risks have been addressed and reduced through stricter regulations on emissions of toxic and hazardous substances, as well as requirements for chemical handling, storage, disposal and reporting under the CAA, RCRA, EPCRA, TSCA,[94] and applicable OSHA standards. These improvements have also been supported by the widespread adoption of industry BMPs. U.S. Bureau of Labor Statistics (BLS)

[94] Section 3.9 focuses primarily on human health and safety issues relevant to OSHA standards and the CAA RMP; for information on the applicability of RCRA, EPCRA, and TSCA to the Proposed Project, see Section 3.8 (Solid Waste, Hazardous Waste, and Hazardous Materials).

data show that the 2023 injury or illness incident rate in the U.S. semiconductor industry (North American Industry Classification System (NAICS) code 33441) was 1.0 per 100 workers, compared to 3.2 for all manufacturing sectors and 3.0 for all economic sectors (BLS, 2024a). This is also lower than the incident rate for all private industries in the U.S., which is 2.4 cases per 100 (BLS, 2024b). This lower incident rate is due in part to advancements in modern semiconductor equipment safety controls, including advanced leak detection, toxic gas monitoring, enclosed automated handling, emergency alarms, tool decontamination, and automatic shutdown systems. PPE, including respiratory protection, hearing protection, and protective clothing, has also improved, providing additional worker protection. Overall, semiconductor industry incident rates have steadily declined over three decades due to increased regulation, stricter standards, technological advances, and automation (NIST, 2024).

As shown in Figure 3.9-1 below, the National Institute for Occupational Safety and Health (NIOSH) developed a Hierarchy of Controls as guidance to industry on the most to least effective measures to protect workers from injuries, illnesses, and fatalities. These range from avoiding the creation of hazards in the workplace to managing unavoidable hazards through administrative controls, PPE, and other measures. The hierarchy is illustrative of the types of controls that are typically required under the laws and regulations outlined in Section 3.9.1 or customary for industries to implement at large scale manufacturing facilities.

Figure 3.9-1 NIOSH Hierarchy of Controls



Source: NIOSH (2021).

3.9.3 Environmental Consequences

3.9.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. Therefore, the No Action Alternative would not have any effects on human health and safety.

3.9.3.2 Preferred Action Alternative

Construction Effects

Construction of the Proposed Project would primarily involve human health and safety risks relating to construction site injuries.[95] Construction site hazards generally would be those reasonably expected to be present at any large-scale infrastructure project, and could include those relating to heavy construction machinery and equipment; vehicle and equipment strikes; falling trees during tree clearing; falls, slips, and trips; loud noise exposure; injuries from use of hand and power tools; and exposure to hazardous materials used in construction, such as equipment fuel oil or other flammable materials. Construction workers could also be exposed to chemicals (e.g., paints and paint thinners, solvents, and glues), welding fumes, and airborne dust. BLS data from 2023 show 2.4 non-fatal injuries or illnesses per 100 full-time equivalent workers, and a construction fatality rate of 9.6 per 100,000 full-time equivalent workers, or less than one fatality (0.4) in a peak construction year (BLS, 2024b; BLS, 2024c).

To address these risks, Micron would adhere to all applicable OSHA construction standards at 26 C.F.R. Part 1926 (see Appendix L-2). This would include ensuring safe construction workplace standards and practices relating to heavy equipment and tool use; welding and cutting; scaffolding; fall protection; PPE; hazardous materials handling, storage, and disposal; and other protections. In accordance with OSHA noise exposure standards, Micron also would implement a hearing conservation program that would include regular noise monitoring, audiometric testing for affected workers, provision of hearing protection devices, and worker training on noise hazards and protection methods, as applicable. Additionally, Micron would implement engineering controls (quieter equipment, sound barriers, and equipment enclosures) and administrative controls to limit exposure time via worker rotations and monitoring. For additional information on potential noise and vibration effects on the surrounding area, see Section 3.12 (Noise and Vibration).

In addition to adhering to all applicable OSHA standards, Micron would require its construction contractors to adopt and incorporate its Global EHS Construction Safety Performance Standard (included in Appendix L-4) into their site-specific safety plans and to apply the standard

[95] For purposes of the analysis in Section 3.9, the potential human health and safety effects from construction and operation of the Connected Actions are generally assumed to be similar to those from construction and operation of the Proposed Project at most, and are likely to pose a lesser degree of risk given the comparatively minor degree of hazards associated Connected Action construction and operations relative to the Proposed Project and the Micron Campus in particular. In general, the Connected Actions would be subject to similar laws and regulations relating to human health and safety, and National Grid, OCWA, and OCDWEP would each undertake construction and operational safety measures similar to those described for the Proposed Project.

to subcontractors. The standard serves as Micron's framework for its construction contractors to implement a full range of construction health and safety measures during construction activities, including hazard communication protocols, lock-out/tag-out procedures, confined space safeguards, stop work authority, fatality prevention, material storage and pollution prevention protocols, inclement weather protocols, construction worker well-being and fatigue management, overtime limitations, drug and alcohol screening, and other measures.

As part of the Proposed Project, Micron also would implement its ERMS beginning with construction. The ERMS is Micron's internal set of policies, procedures, and resources to govern emergency management at its facilities and construction activities at those facilities. As a component of the ERMS, Micron employs a dedicated internal ERT comprised of Micron employees trained in OSHA hazardous communication and emergency response standards and State and National EMT-B standards. The ERT would be on hand throughout Proposed Project construction to respond to any emergencies or construction worker injuries. In addition, Micron would establish an on-site construction occupational health clinic to provide care to Proposed Project construction workers and treat construction injuries.[96] For additional detail on the ERMS and ERT, the construction clinic, and Micron's procedures for responding to emergency incidents and coordinating with local first responders, see Appendix L-3.

Reducing potential human health and safety effects from construction activity was also a key consideration for the inclusion of the Rail Spur Site in the Proposed Project design. The Rail Spur Site would substantially reduce the need for construction-related truck traffic. As a result, it would reduce the risk of accidents, and it would reduce adverse effects on air quality and noise and vibration. Freight rail accidents occur at a much lower rate than truck accidents (3.6 versus 11 fatalities per 10 billion ton-miles), freight rail-related non-fatal accidents are one-fifth that of truck accidents, and rail accidents that cause property damage are 62 times less frequent compared to truck accidents (OneRail, 2016). Although rail accidents cannot be ruled out, the use of the Rail Spur Site to transport construction material to the Micron Campus (see Chapter 2, Proposed Action and Alternatives) would substantially reduce the safety risks compared to relying entirely on truck transport. The independent operator of the Rail Spur Site would be required to comply with Federal Railroad Administration regulations at 49 C.F.R. Parts 200-299, which include freight car safety standards, track maintenance, operating procedures, and training requirements.

Based on the above requirements and measures that Micron would put in place to reduce the risk of construction accidents and injuries, construction of the Proposed Project would not result in significant adverse effects on human health and safety.

Operational Effects

Proposed Project operations would primarily involve human health and safety risks relating to hazards to employees from the semiconductor manufacturing process. As noted in Section 3.9.2, the U.S. semiconductor industry incident rate is substantially lower than the U.S. manufacturing and economic sector incident rates, and semiconductor industry incident rates have steadily

[96] Onsite orientation and drug/alcohol testing, in accordance with State law, would be required prior to issuance of badging for construction site access to reduce the potential of impairment that could lead to accidents. At a minimum, orientation training would include construction site policies, safety and health expectations and requirements, crisis management communication protocol, zero tolerance policy expectations, and environmental responsibilities.

declined over the past three decades. Although injuries can still occur, stricter regulations and industry practices incorporate measures to prevent and mitigate industry hazards.

Micron's Global EHS program would be responsible for overseeing the implementation of risk management measures at the Micron Campus, consistent with the internal risk management measures Micron has implemented at its existing facilities in Boise, ID and Manassas, VA. Micron's EHS team would be responsible for reviewing the facility's engineering design and developing occupational safety and health procedures, protocols, and training in accordance with OSHA, USEPA, and NYS Labor Law Article 27 requirements. Micron would establish WSCs to foster collaboration among management and employees and a structured process to proactively identify and address potential hazards and raise any safety concerns.

Micron also would seek ISO 45001 and 14001 certification for the Micron Campus, consistent with certifications at its existing facilities, which are globally certified to ISO 45001:2015 and ISO 14001:2015. ISO 45001 is the international standard for occupational health and safety and incorporates leadership commitment, worker participation, hazard identification and risk assessment, legal and regulatory compliance, emergency planning, incident investigation, and continual improvement standards. ISO 14001 is the international standard for environmental management systems and incorporates environmental compliance, resource use, waste management, monitoring, training, employee engagement, and stakeholder communication standards.

In addition, Micron would manage potential risks from use and operation of semiconductor manufacturing equipment in accordance with the Semiconductor Equipment and Materials International (SEMI) S2 standard, which serves as the semiconductor industry-wide EHS guideline for semiconductor manufacturing equipment and covers installation, gas effluent handling, exhaust ventilation, fire risk avoidance and minimization, and electrical design and hazards. Micron would require its semiconductor manufacturing equipment suppliers to provide SEMI S2 compliance reports prior to equipment purchase to ensure that all equipment at the Micron Campus would meet the standards and industry best practices.

Table 3.9-2 identifies the most prevalent types of semiconductor worker safety and health hazards, and the general types of risk management measures that Micron would implement to avoid and minimize those hazards at the Micron Campus.

Table 3.9-2 Micron Campus Process Hazards and Risk Management Measures

Hazard	Description	Risk Management Measures
Flammable	Substances with flash point < 100 °F that ignite easily and burn rapidly.	Process enclosures, interlocks, deluge systems (fire suppression system that releases large amounts of water or other agent to extinguish a fire), and continuous monitoring.
Combustible	Substances with flash point ≥ 100 °F and < 200 °F capable of igniting and burning.	Process enclosures, interlocks, continuous monitoring.
Pyrophoric	Substances capable of igniting spontaneously when exposed to air.	Ultraviolet infrared (UVIR) detection, interlocks, process enclosures.

Hazard	Description	Risk Management Measures
Oxidizing	Substances that can support combustion and cause unwanted or hazardous chemical reactions.	Process enclosures, interlocks, nitrogen blanketing, automation, continuous monitoring.
Corrosive	Substances that can cause tissue destruction upon contact or inhalation.	Process enclosures, interlocks, automation, continuous monitoring.
Irritating	Substances that can cause temporary effects (redness, inflammation, pain, or coughing).	
Toxic	Substances capable of causing dose-dependent toxic effects via inhalation, absorption, ingestion, or injection.	Process enclosures, interlocks, local exhaust / ventilation, automation, continuous monitoring.
Sensitizing	Substances capable of causing chronic allergic responses after repeated exposure.	
Water Reactive	Substances that undergo chemical or physical changes upon contact with water or moisture.	Process enclosures, interlocks, continuous monitoring, alternative fire suppression systems.
Ergonomic	Workplace conditions that can cause poor posture, repetitive motion, twisting movements or heavy lifting.	Preventative assessments, lift assists, automation.
Radiation	X-ray or gamma radiation exposure, lasers, radio frequency hazards, etc.	Process enclosures, shielding, periodic radiation surveys.
Electrical	Harmful contact with active or stored electrical energy.	Energy isolation procedures, no energized work without approval and permit, PPE.
Mechanical	Contact with sharp edges, lacerations, pinches, crush injuries, robotic motion, overhead bump hazards.	Use of caps and covers on Unistrut metal framing systems, machine guarding, PPE.
Falls, Slips, and Trips	Work at height, uneven walking surfaces, trip hazards.	Scaffolding, elevated work platforms, catwalks, guardrails, fall protection.
Noise	Sound levels > 85 dBA (maximum recommended exposure limit over an 8-hour time weighted average).	Compliance with 29 C.F.R. § 1910.95 guidelines to protect workers from excessive noise in the workplace, including through equipment design, time limits, and hearing protection.
Maintenance Personnel	Risks from maintaining technical or hazardous equipment.	Maintenance procedures, job hazard analysis, PPE, hazardous work assessment reviews, and control measures.

To address the process hazards described above, Micron's RMP for the Micron Campus would include measures such as pre-task planning (PTP), job hazard analyses (JHA), permit-to-work (PTW), critical risk checklists, and PPE. Micron EHS professionals would be responsible for conducting risk assessment reviews consistent with the PTP, JHA, and PTW procedures. These measures would be applied across the fabs consistent with the NIOSH hierarchy of controls (see

Figure 3.9-1), as reflected in Table 3.9-3 below.

Table 3.9-3 Micron Campus Example Hazard Control Measures

Measure	Definition	Micron Campus Example Hazard Control Measures
Elimination	Removal of hazard at source; preferred solution so that no exposure can occur.	All new chemicals would undergo review and could be rejected for use based on safety, environmental, or other concerns. Micron would adhere to an internal banned or restricted chemicals list. Bulk chemical delivery systems would eliminate the manual pouring of hazardous chemicals. The Automated Material Handling System (AMHS) would eliminate manual handling of semiconductor wafer transport pods.
Substitution	Use of safer alternatives without creating new risks.	Chemical review procedures would identify less hazardous alternatives. Review of engineering design would inform selection of optimally protective facility equipment.
Engineered Solution	Controls to reduce or prevent hazards from encountering workers.	The facility would incorporate leak detection and automatic shutdown systems, containment systems for spills or releases, local exhaust ventilation systems, process enclosures (exhausted cabinets, fully enclosed chambers), interlocks (circuit systems designed to automatically prevent incompatible actions from occurring at the same time), machine guarding, and current-limited robotics.
Administrative Controls	Work practices reducing exposure duration, frequency, or intensity.	Controls would include EHS procedures, energy isolation procedures, workplace standard operating procedures, signs and labeling, restricted hazardous chemical storage access (keylock and badging), and training requirements (e.g., training for confined space, work at height, and hazardous energy conditions and training in PPE and respiratory protection use). In addition, operational technicians would remain on-site 24/7 to address equipment concerns or releases, and emergency technicians would remain on-site 24/7 to respond to emergency events.
PPE	Equipment worn to minimize exposure.	PPE would include chemical-resistant clothing, gloves, goggles, hard hats, respirators, fall protection, hearing protection, etc.

To address potential hazards associated with semiconductor process chemical exposure, Micron would implement chemical monitoring and exposure controls in the fabs based on more protective standards than the OSHA permissible exposure limits (PELs). An OSHA PEL is a legal limit for exposure of an employee to a chemical substance or physical agent that represents the maximum allowable concentration or level of a substance that a worker can be exposed to over a specific time period without experiencing adverse health effects, and is usually expressed as an eight-hour, time-weighted average exposure limit.

In developing its safety procedures for the Proposed Project, Micron shall incorporate the most protective occupational exposure limit (OEL), pursuant to the American Conference of

Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs), biological exposure indices (BEIs), or Micron's own limit if lower than the ACGIH TLVs, for the chemicals used in the facility manufacturing processes for the relevant scenarios (e.g., overarching, equipment-specific, or task specific) in which they are applied. To ensure maximum worker exposure protection, Micron would install toxic gas monitoring systems, exposure detection and evacuation alarms, and automatic equipment shutdown mechanisms based on these exposure limits and Immediately Dangerous to Life and Health (IDLH) atmospheric concentration values.

In addition to chemical exposure limits and protection measures, Micron would implement a comprehensive industrial hygiene (IH) program to control environmental factors or stressors in the workplace that could lead to discomfort, illness, or impaired health. Micron's EHS team would be responsible for verifying the implementation and effectiveness of IH controls, such as worker health monitoring systems. Micron would incorporate all applicable OSHA general industry standards (see Appendix L-2), including noise protection standards to protect employees from potential hearing damage from prolonged exposure to loud machinery and equipment in the fabs, including cleanroom environments where specialized tools and ventilation systems can generate high noise levels. Micron would install equipment noise reduction features and enclosures around loud equipment, provide hearing protection to employees, and incorporate noise safety protocols as part of workplace monitoring and training programs. Table 3.9-4 lists additional IH program measures that would be implemented at the Micron Campus.

Table 3.9-4 Micron Campus Additional IH Program Measures

IH Category	IH Program Health and Safety Elements
Hazard Identification and Risk Assessment	Job hazard analysis program and training.
Hazard Communication Program	Labeling and training.
Laboratory Safety (Chemical Hygiene Plan)	Inventory management, medical examinations, employee exposure limit monitoring, and training.
Radiation and Laser Safety	Inventory management, periodic radiation detection surveys, and training.
Respiratory Protection	Medical evaluation, annual training, and fit testing.
Hearing Conservation	Sound level surveys, annual audiograms, and annual training.
Ergonomics	Qualitative risk assessments for both manufacturing and office environments, and training.

As noted above under Construction Effects, Micron would implement its ERMS and deploy its ERT beginning with construction. The ERMS and ERT also would be in place and govern emergency response throughout continuous Proposed Project operations. As part of the ERMS, Micron management and the ERT would conduct regular emergency drills and would implement site-specific emergency response protocols in coordination with local first responders, including specialized emergency response measures developed in collaboration with the Clay Fire Department, and would establish an emergency response support agreement with the Syracuse Fire Department. Micron also would be responsible for implementing its RMP, Process Safety Plan, and other measures consistent with USEPA regulations (see Section 3.8, Solid Waste, Hazardous

Waste, and Hazardous Materials). Micron would ensure its emergency response protocols align with facility hazard monitoring systems, including leak detection and automatic shutdown systems and emergency evacuation alarms.

In addition, Micron would establish an on-site operational occupational health clinic (separate from the healthcare center at the Childcare Site and the construction clinic described above) to provide care to Micron Campus employees, focusing on occupational health, illness, and injury care and management. For additional details on the ERMS and ERT, the operational clinic, and Micron's procedures for responding to emergency incidents and coordinating with local first responders, see Appendix L-3.

Based on the above requirements and measures that Micron would put in place to avoid and minimize worker and employee hazards, Proposed Project operations would not result in significant adverse effects on human health and safety.

Growth Inducing Effects

Because the anticipated human health and safety effects as described in this section would largely be limited to potential hazards for construction and operation of the Micron Campus, the Preferred Action Alternative is not anticipated to result in any growth inducing effects on human health or safety. In general, other projects in the semiconductor supply chain that would locate in the region would be subject to all applicable laws and regulations to protect human health and safety and would be anticipated to implement controls for their operations similar to those that Micron would implement as part of the Proposed Project.

Summary of Effects

As described above, the Preferred Action Alternative, and the construction and operation of the Micron Campus in particular, would pose potential human health and safety risks based on hazards to construction workers and hazards present in the semiconductor manufacturing process. However, Micron would develop and implement a comprehensive set of procedures to manage these risks in accordance with all applicable laws and regulations, and consistent with EHS programs it has implemented at its other existing facilities. Although potential incidents cannot be ruled out, given the comparatively low incident rate in the semiconductor industry and the risk management programming Micron would implement as part of the proposed project, the human health and safety risks to construction workers, employees, and the surrounding community are low. Therefore, the Preferred Action Alternative is not anticipated to result in significant adverse effects on human health or safety.

3.9.4 BMPs and Mitigation Measures

Micron would implement the BMPs described in Table 3.9-5 to address the potential human health and safety effects of Proposed Project construction and operations.

Table 3.9-5 BMPs for Human Health and Safety

Activity	BMP
Construction	Manage construction worker risk through implementation of PTP, JHA, and a PTW system.
Construction	Apply risk activity assessments and audits for construction workers.
Construction	Require construction contractors to submit fatigue management plans in the event overtime work is required.
Construction	Conduct drug/alcohol testing and orientation prior to issuance of badging for construction site access.
Construction; Operations	Maintain a crisis management plan with established mustering locations and coordinate plan with local emergency service agencies.
Construction; Operations	Implement site-specific BMPs as part of the IH program (see Table 3.9-4).
Construction; Operations	Install facility perimeter fencing and provide for 24/7 security coverage to ensure that only authorized personnel can access Proposed Project sites and restricted areas where hazardous chemicals are stored.
Operations	In developing its safety procedures for the Proposed Project, Micron shall incorporate the most protective occupational exposure limit (OEL), pursuant to the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs), biological exposure indices (BEIs), or Micron's own limit if lower than the ACGIH TLVs, for the chemicals used in the facility manufacturing processes for the relevant scenarios (e.g., overarching, equipment-specific, or task specific) in which they are applied.
Operations	Require SEMI S2 compliance reports from potential suppliers before purchasing and installing semiconductor manufacturing equipment.
Operations	Partner with local fire and EMS to provide documentation of hazardous materials stored on-site and coordinate emergency response readiness and preparedness.

With implementation of the foregoing BMPs, the Preferred Action Alternative would not result in significant adverse effects on human health and safety, and no separate mitigation measures would be required.

3.10 UTILITIES AND SUPPORTING INFRASTRUCTURE

Utilities and supporting infrastructure are the system of public works, utilities, and energy networks that provide the basic framework for a community. This includes electricity, natural gas, water, wastewater management, and broadband internet services, along with their physical components (supporting infrastructure), such as substations, pipelines, treatment facilities, and communication networks.

The Proposed Project would require certain utility expansion and supporting infrastructure upgrades to meet its construction and operational needs for electricity, natural gas, water, wastewater discharge, and broadband internet service (see Sections 2.1.5 through 2.1.9). The Proposed Project would result in increased demands on existing utility capacity in the region, which Micron and utility providers would seek to address through the Connected Action upgrades and long-term planning.

Section 3.10 (Utilities and Supporting Infrastructure) focuses on analyzing and quantifying where feasible the proposed Micron Campus' reasonably foreseeable effects on current and planned utility infrastructure and capacity. The section does not include a detailed quantitative analysis of related effects from the Rail Spur or Childcare Sites, which would be *de minimis* compared to the proposed Micron Campus needs and would not be anticipated to materially change the degree of effects from the Proposed Project as a whole. The section considers growth inducing effects within the discussion of each type of utility service where appropriate.

3.10.1 Legal and Regulatory Setting

This section outlines laws and regulations and planning processes relevant to the analysis of utilities and supporting infrastructure.

The NYSPSC, established under Article I, Section 4 of the New York State PSL, is responsible for regulating electric, gas, steam, and telecommunications services in the State. The NYSPSC incorporates environmental standards into its actions and decisions by requiring certain utilities and regulated entities to comply with State and Federal environmental regulations, including those pertaining to energy conservation and renewable energy development. Under PSL Chapter 48, Article VII, regulated entities such as electric or gas utility companies must obtain a Certificate of Environmental Compatibility and Public Need (CECPN) from the NYSPSC before constructing or operating any major electric or gas transmission line or related facility in the State. The CECPN ensures that new energy utility construction will serve the public interest, convenience, and necessity while meeting applicable environmental standards.

The NYISO is a non-profit entity that manages New York State's power system, oversees the stability and performance of the electrical grid, and operates the wholesale electricity market in the State. Through its Comprehensive System Planning Process, which considers changes that could affect grid operation over a ten-year period, NYISO engages in long-term planning to evaluate energy usage, reliability requirements, and proposed infrastructure solutions to ensure that the grid can meet current and future demands, including integration of renewable energy sources. NYISO's interconnection process facilitates the integration of new generation, transmission, and certain substantial load interconnections into the New York State power system. The NYISO interconnection process involves three key studies: a Feasibility Study, to assess potential issues at the point of interconnection; a System Impact Study (SIS), to evaluate the impact of a project on the existing electrical system, including upgrades needed to accommodate the project; and a Facilities Study, to analyze the cumulative impact of multiple projects on the grid.

NYSDEC is responsible for managing the State's water resources, including regulating water use, promoting water conservation, and protecting water quality pursuant to ECL Articles 15 and 17 and in accordance with the Great Lakes–St. Lawrence River Basin Water Resources Compact (Great Lakes Water Compact). Before any facility with an existing water withdrawal permit (including a permitted facility that is owned or operated by a local water utility) may make any changes, upgrades, or modifications to its system that could impact the facility's source, use, or capacity for water use, the permittee must apply to NYSDEC for a water withdrawal permit modification (6 NYCRR Part 601). In addition, any changes, upgrades, or modifications to a wastewater treatment facility that will impact its method of treatment or capacity or effects on the receiving water must apply to NYSDEC for a modification to its SPDES permit.

OCWA was established under Title 7 of Article 5 the New York State Public Authorities Law to manage and provide water services within Onondaga County (Pub. Auth. L. §§ 1150-1173). The NYSDOH oversees OCWA's compliance with drinking water standards under the Safe Drinking Water Act and Article 11 of the Public Health Law, and reviews and approves all construction plans for improvements to public water systems under 10 NYCRR § 5-1.22.

OCDWEP was established under the Onondaga County Administrative Code, Article XXII, Section 22, and Appendix 11-A, Sections 11.53g, 11.53j, and 11.67-11.79, and is under the direction of the County Commissioner. Onondaga County's Rules and Regulations Relating to the Use of the Public Sewer System govern direct and indirect discharges of stormwater, well water, groundwater, cooling water, unpolluted water, industrial wastewater, sewage, and other wastewater into the County sewer system. The regulations also require County approval for connections to the County sewer system and require industrial users to obtain a discharge permit before connecting to or discharging to the County sewer system.

3.10.2 Affected Environment

This section describes the affected environment for utilities and supporting infrastructure, which encompasses the current state of existing utilities that would undergo changes based on the alternatives, including existing and anticipated or planned utility demand and capacity, and their broader infrastructure systems and service areas.

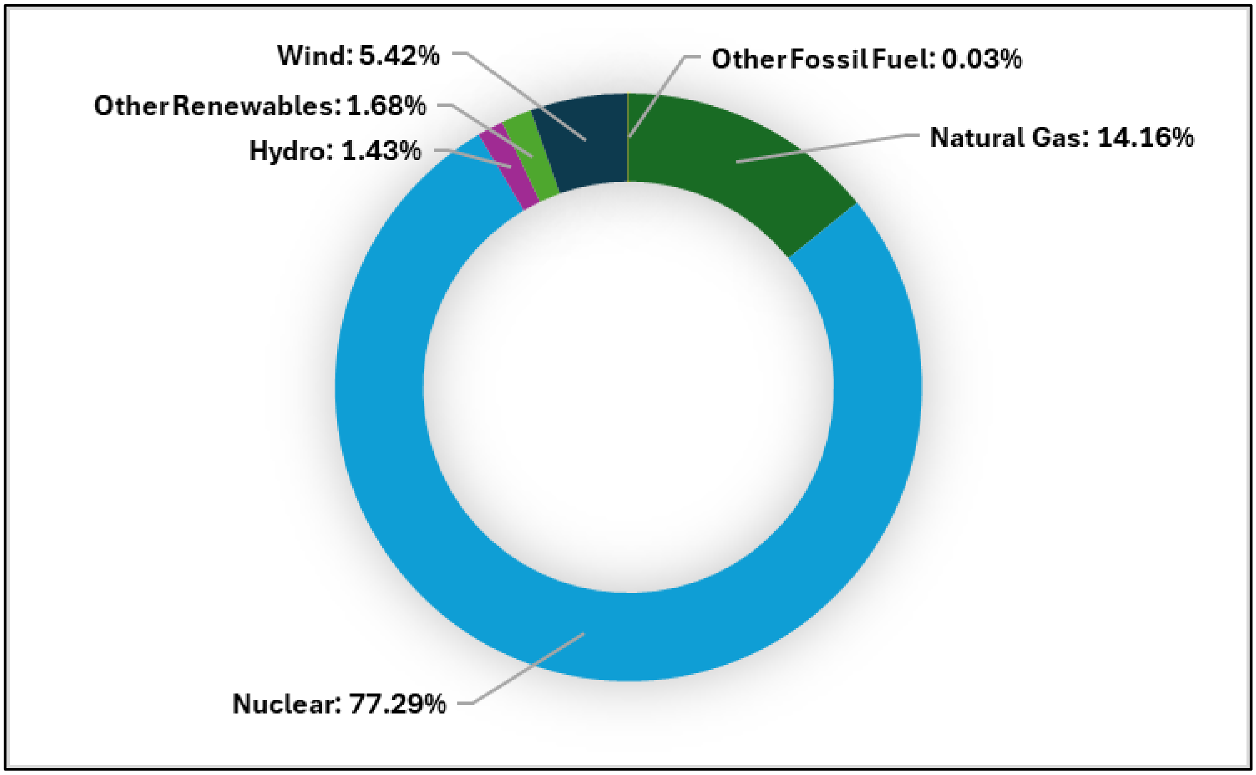
3.10.2.1 Electricity Supply

As noted above, NYISO manages New York State's power system and oversees the stability and performance of the electrical grid in the State. To facilitate grid planning, NYISO divides the State into 11 load zones, each with a unique electricity supply and demand profile. NYISO is responsible for managing electricity supply and demand across these load zones using a high-voltage interconnected transmission system. When local generation cannot meet local demand, NYISO coordinates the transfer of electricity across the transmission system, both from other load zones and through imports from out-of-state sources.

The Micron Campus would be located in Load Zone C, which in 2023 had the highest annual net electricity generation out of all load zones in the State, at 29,776 gigawatt-hours (GWh)

(NYISO, 2024a). Customers in Load Zone C consumed approximately 14,693 GWh of electricity in 2023, or approximately 49 percent of its electricity generation (NYISO, 2024a). The remainder of Load Zone C's electric generation currently flows to other load zones and demand areas, including downstate zones that are net consumers of electricity and out of state as electricity currents and demands fluctuate across North America's integrated electric grid. As shown in Figure 3.10-1, Load Zone C's electricity generation reflects a diverse mix of energy sources, with approximately 86 percent of its electricity generated from carbon-free energy sources.

Figure 3.10-1 2023 Load Zone C Net Electricity Generation



Source: NYISO 2023-2042 System & Resource Outlook Report data (NYISO, 2024b).

According to NYISO's 2023-2042 System & Resource Outlook Report data, New York State electricity consumption is projected to increase by roughly 50 to 90 percent over the next 20 years. Although this includes projected demand from new grid interconnections, particularly for manufacturing facilities and data centers, the primary driver of increased future electricity demand is the State's anticipated electrification of fossil fuel-dependent energy systems to achieve the mandates of the CLCPA (NYISO, 2024b). This increase in demand will necessitate increased generation both within and outside the State of New York.

National Grid transmits and distributes electricity to more than four million customers throughout the approximately 25,000 square-mile service area in Upstate New York, which includes the five-county region and Load Zone C (National Grid, 2023/24). National Grid currently operates the Clay Substation (#229) southwest of the intersection of Verplank and Caughdenoy Roads in the Town of Clay. As part of its "Upstate Upgrade" initiative in its Long-Term Plan, National Grid is investing more than $4 billion in projects to enhance grid resiliency and increase the interconnection of clean and renewable energy to meet current and future demands. One such project, the Black River-Clay project, will upgrade approximately 60 miles of electric transmission lines, benefiting Onondaga, Oswego, and Jefferson Counties.

3.10.2.2 Natural Gas Supply

National Grid provides natural gas service to approximately 640,000 customers in Upstate New York, including 590,000 residential customers, 47,000 commercial customers, and 425 industrial or large customers on special contracts. Upstate New York Customers receive natural gas through approximately 9,220 miles of gas pipelines, which are supplied by interstate pipelines, including the Eastern Gas Transmission and Storage Pipeline, Empire Pipeline, Tennessee Pipeline, and Iroquois Pipeline (National Grid, 2024b). The gas distribution system includes 24 gas compression stations where the transmission company transfers control and responsibility of natural gas to National Grid and 370 gas regulator stations where gas pressure is adjusted to the appropriate operating level for customer use and safety (NYSERDA, 2024).

The NYSPSC requires each gas utility in the State to establish and maintain a long-term plan to accommodate anticipated future gas demand and infrastructure needs associated with population and demand growth. National Grid's Long-Term Plan "Upstate Upgrade" initiative is designed in part to ensure that it will have sufficient capacity to meet the future gas supply needs of all of its service areas in Upstate New York, including based on anticipated population and demand growth.

Based on National Grid's Long-Term Plan, Upstate New York customers' projected or base case peak natural gas demand for winter 2024-2025 was 349 billion cubic feet (Bcf) per year (or 957 mega-dekatherms (MDth) per day), which represents approximately 76 percent of the currently contracted service area capacity of approximately 457 Bcf per year (or 1,253 MDth per day) (National Grid, 2024b). National Grid is implementing demand-side management programs to reduce annual gas consumption and has set a goal to eliminate fossil energy sources from the existing gas network by 2050 by replacing them with renewable natural gas and green hydrogen (National Grid, 2024b).

3.10.2.3 Water Supply

OCWA manages public water treatment and distribution systems in Onondaga County and surrounding counties and supplies water to approximately 104,833 residential customers and commercial accounts, including 48 industrial customers and four municipal wholesale water accounts. OCWA currently supplies water from three main sources, with a combined permitted water withdrawal limit of 85.5 MGD, but a combined water supply capacity of approximately 77 MGD.

First, OCWA treats water from Lake Ontario at the LOWTP, subject to a permitted water withdrawal limit of up to 62.5 MGD (NYSDEC, 2023c), though the LOWTP has a maximum capacity of 60 MGD and currently only has a practical sustained output of approximately 54 MGD. To access Lake Ontario water, OCWA currently shares the operation of an existing raw water tunnel, from approximately 6,280 feet out in Lake Ontario to the shoreline. The tunnel has a reported capacity of 125 MGD. OCWA's total maximum allowable share of the tunnel capacity is 93.5 MGD. The balance belongs to the City of Oswego. From the shoreline, water is pumped to the LOWTP for treatment, and is then pumped to the Terminal Campus in Clay, where it is further distributed through the system.

Second, OCWA treats and delivers water from Otisco Lake via the Otisco Water Treatment Plant, subject to a permitted water withdrawal limit of up to 20 MGD (OCWA, 2024a). Third, OCWA has contracted to purchase up to 3 MGD from the City of Syracuse, which obtains its water from Skaneateles Lake (Onondaga County, 2019). OCWA also maintains 63 water storage facilities with a total volume of more than 170 million gallons to provide additional capacity during times of peak demand or system maintenance (OCWA, 2024b).

The current total annual average water usage in the OCWA service area is approximately 36 MGD, with usage potentially increasing to approximately 55 MGD at peak times, such as during prolonged heat waves (OCWA, 2024b). Water supply from the LOWTP accounts for approximately 17.7 MGD or approximately 49 percent of the annual average water usage in the OCWA service area (OCWA, 2023).

OCWA maintains several infrastructure improvement programs, including the Capital Improvement Program, to address aging infrastructure and manage future demands. The LOWTP has undergone several upgrades since initial construction in 1967. OCWA is currently upgrading the LOWTP, including by replacing clarifiers, the filter surface wash system, electrical power distribution and control systems, and lighting, plumbing, heating, and ventilation systems, as well as replacing two clearwells with larger ones (OCWA, 2022).

3.10.2.4 Wastewater Treatment and Discharge

OCDWEP operates and maintains the sanitary system that collects and treats domestic, commercial, and industrial wastewater within Onondaga County's Consolidated Sanitary District (OCDWEP, 2024a). OCDWEP's system processes more than 33 billion gallons of wastewater per year through six wastewater treatment plants within the district. The existing OOWWTP has an average treatment rate for sanitary wastewater of approximately six MGD, with a maximum month-rated treatment capacity of 10 MGD (OCDWEP, 2024b).

Onondaga County's 2024-2029 Capital Improvement Plan includes two planned OCDWEP projects: the OOWWTP Major Upgrade Project and the White Pine/NYS Route 31 Municipal Sewer Expansion (Onondaga County, 2023). Planning for these two expansion projects predates and is independent of the Proposed Project.

The OOWWTP Major Upgrade Project, which is still in the design phase, will increase the OOWWTP's sanitary wastewater treatment capacity to a maximum of approximately 25 MGD to accommodate anticipated higher flows and loads within the Oak Orchard service area regardless of whether the Proposed Project is built. The upgrade is anticipated to include the addition of biosolids processing and recycled water supply, and a new outfall. This upgrade is still in the design and planning phases, with construction planned to start in 2026 and conclude in 2030.

The White Pine/NYS Route 31 Municipal Sewer Expansion, which also will proceed with or without the Proposed Project, will consist of a municipal pump station and force main, with construction anticipated to be completed in 2025 (Onondaga County, 2023).

3.10.2.5 Broadband Internet Connectivity

The Central New York Regional Planning and Development Board (CNYRPDB) and partnering counties (Cayuga, Cortland, Madison, Onondaga, and Oswego) commissioned a study to assess rural area broadband capacity and identify opportunities for broadband expansion (CNYRPDB, 2021). The study results concluded that all five counties have broadband service rates in excess of 95 percent, with Onondaga County exceeding 98 percent. The WPCP and the proposed Rail Spur and Childcare Site locations are within a high-speed fiber optic network coverage area. This network provides high-bandwidth fiber-to-the-home (FTTH) services with speeds ranging from 940 megabits per second to one gigabit per second (CNYRPDB, 2021). According to the CNYRPDB study, multiple service providers offer broadband infrastructure in Onondaga County, including providers that have installed robust fiber optic cable lines delivering gigabit-range download and upload speeds.

3.10.3 Environmental Consequences

3.10.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur and Childcare Sites would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. Annual electricity demand in Load Zone C and statewide would continue to rise as anticipated due to the ongoing shift from fossil fuels to electric-powered alternatives, such as electric vehicles and electric heating and cooling. To support this growth and meet the State’s goals under the CLCPA, National Grid will continue its $4 billion investment in the Upstate Upgrade to improve grid resilience and expand renewable energy delivery. Similarly, the capacity of the power system would continue to increase in accordance with current State and utility plans to meet the growing electricity demand. Natural gas consumption would remain at currently anticipated levels, with National Grid conservatively forecasting a 0.5 percent annual demand increase from 2024 to 2049 (National Grid, 2024b). There would be no increased need for broadband internet connectivity associated with the Proposed Project.

OCWA would continue its planned water system upgrades through its current capital improvement programs but would not need to expand system capacity. The OOWWTP Major Expansion Upgrade will proceed as planned, which will increase the OOWWTP’s sanitary wastewater treatment capacity and create new facilities for biosolids processing and recycled water supply. The White Pine/NYS Route 31 Municipal Sewer Expansion also will proceed as planned and will provide public sewer service to the WPCP, but OCDWEP would not construct a separate industrial wastewater treatment plant or industrial water reuse facility to accommodate industrial wastewater discharges from the Proposed Project.

Even under the No Action Alternative, there would be a significant effect on electricity demand resulting from anticipated future electrification of transportation, increased building use, and new industrial load growth in New York State (as noted above, the NYISO 2023-2042 System & Resource Outlook Report projects a 50 to 90 percent nominal increase in New York State electricity demand over the next 20 years). However, this effect would not be adverse, because the NYISO planning process and National Grid initiatives outlined above are anticipated to provide sufficient capacity and transmission to meet present and future demand. The No Action Alternative would not result in any significant adverse effects on natural gas consumption, water usage or water system capacity, wastewater treatment infrastructure, or the telecommunications system.

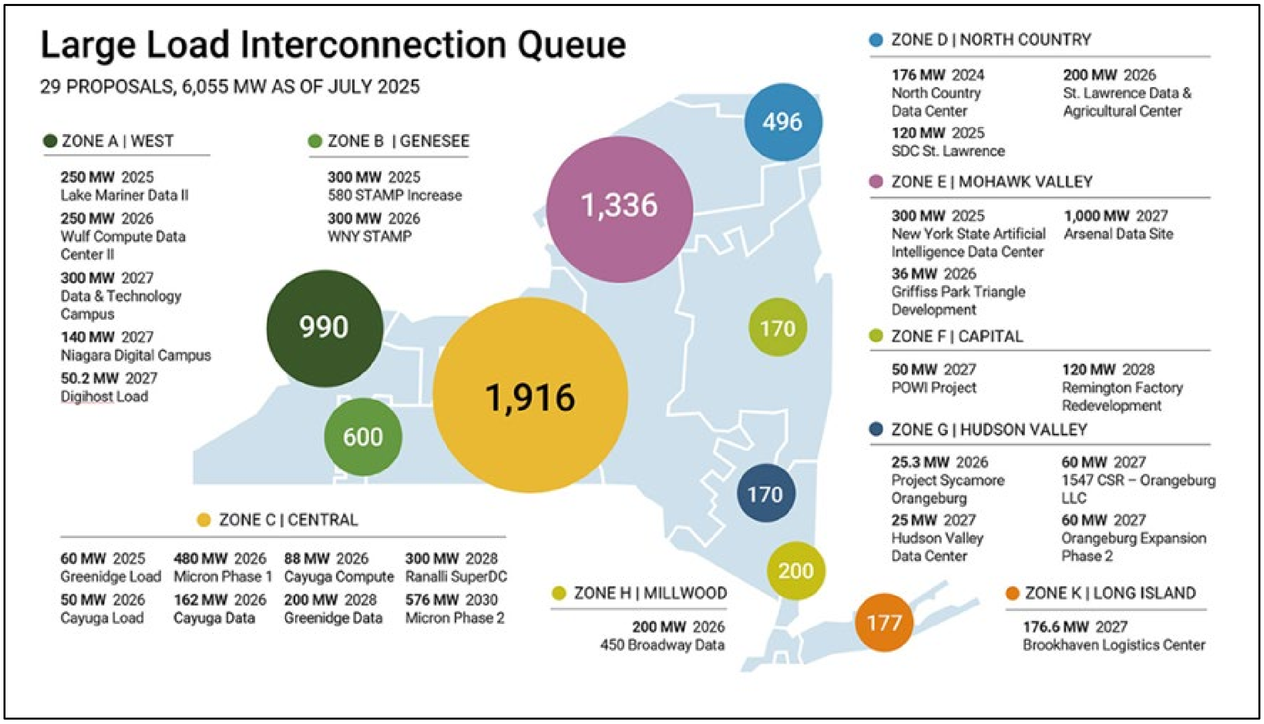
3.10.3.2 Preferred Action Alternative

Electricity Consumption and Capacity

New York State faces the combined challenge of implementing increased electrification efforts to achieve statewide climate goals while interconnecting large, energy intensive economic development projects, including the Proposed Project (NYISO, 2024b). As noted in Section 3.10.2.1, the data shows the State, as a whole, is currently experiencing a net electricity deficit, consuming more electricity than it generates. Within this system, Load Zone C is currently a net generator. In 2023, Load Zone C generated 29,776 GWh of electricity, of which 49 percent (14,693 GWh) was consumed by existing customers in Load Zone C (NYISO, 2024a), leaving 15,083 GWh or 51 percent capacity that is transmitted to other load zones within the interconnected grid. When new customers are added within the load zone, they draw first from local generation facilities, whereas those who previously used that power use power generated from a different source on the interconnected grid.

The Proposed Project has been designed to minimize electricity demand to the greatest extent practicable. Although fab utility usage varies across companies depending on semiconductor tool mixes, processes, and conservation measures, in general, fab energy use is directly proportional to cleanroom size. The Proposed Project's estimated electricity consumption is consistent with that of other large-scale, state-of-the-art semiconductor manufacturing facilities. As currently projected, 41 percent of the electricity consumed by the Proposed Project would be used for production tools, 31 percent for HVAC and water treatment, 24 percent for nitrogen and gas systems, and four percent for site support, such as office and other miscellaneous uses. As shown in Figure 3.10-2 below, NYISO's base case large load projection for 2030 accounts for the first phase of the Proposed Project (Fabs 1-2) as the largest of several large loads expected to interconnect into the State electric grid by that date. The Proposed Project would primarily draw power from local generation facilities in Load Zone C.

Figure 3.10-2 NYISO 2030 Base Case Large Load Projection (Fabs 1-2)



Source: NYISO 2025 (NYISO, 2025).

The Proposed Project's electricity consumption would increase over the course of its 16-year construction period as the fabs are built in phases. Accounting for the staggered fab construction schedule, the Proposed Project as a whole would be estimated to consume up to 3,261 GWh in 2029, 6,925 GWh in 2030, 11,042 GWh in 2035, and a maximum 15,674 GWh at full build-out in 2041, as shown in Table 3.10-1.

Table 3.10-1 Estimated Proposed Project Annual Electricity Consumption

Phase	Fabs	Electricity consumption	Remaining Spare Capacity in Load Zone C
Base Case	-	-	15,083 GWh / 51%
Phase 1A (2025-2029)	Fab 1	3,261 GWh	11,822 GWh / 40%
Phase 1B (2028-2030)	Fabs 1-2	6,925 GWh	8,158 GWh / 27%
Phase 2A (2033-2035)	Fabs 1-3	11,042 GWh	4,041 GWh / 14%
Phase 2B (2039-2041)	Fabs 1-4	15,674 GWh	-591 GWh / -2%

Table 3.10-1 shows that the Proposed Project's estimated electricity consumption, when added to current customer demand, ultimately would exceed Load Zone C's base case capacity by

approximately two percent in 2041, assuming no other increase in demand. As noted in Section 3.10.1, NYISO administers a Comprehensive System Planning Process to conduct long-term planning for additional energy generation and reliability in the State, which operates on an interconnected electricity grid, and to ensure the grid can meet current and future demands, including substantial new interconnections. The NYISO interconnection process requires a Feasibility Study, a SIS, and a Facilities Study to evaluate the impacts of a proposed project on the existing electrical grid. Micron would be required to apply for interconnection approval from NYISO for each fab before the fab could connect to the grid.

At the time the Draft EIS was circulated for public comment, NYISO was reviewing Micron's interconnection applications for Fabs 1 and 2 (interconnection queue positions 1536 and 1627, respectively). The NYISO completed a SIS for Fab 1 prior to Draft EIS finalization and was preparing a SIS for Fab 2.

NYISO approved the SIS for Fab 1 on December 12, 2024. The specific purpose of the SIS was to evaluate the impact of the proposed interconnection of Fab 1 on the reliability of the New York State Transmission System, in conformance with section 3.9 of the NYISO Open Access Transmission Tariff. The SIS, among other things, performed thermal, voltage and stability transfer analyses for summer peak conditions for certain interface limits associated with aspects the transmission system located outside of the project area. The SIS observed that the interconnection of the Project degrades the studied interfaces' transfer limits. In addition to the upgrades to the Clay Substation, the SIS identified two network upgrades on the system to mitigate these observed system impacts: (1) construction of a 125 Mega Volt-Ampere Reactive (MVAR) switched shunt network upgrade at the Oakdale 345 kilovolt (kV) substation (owned and operated by NYSEG); and (2) construction of a 50 MVAR capacitor bank at the New Rochester (Station 255) 345 kV substation (owned and operated by Rochester Gas & Electric). These additional two upgrades are to be undertaken within the footprint of the existing substations.

NYISO approved the SIS for Fab 2 on August 14, 2025, and identified the need for an additional substation/switchyard. Pursuant to this determination, National Grid, the regional electric delivery service provider, has tentatively identified a general location in Lysander, New York, near the intersection of the two series of lines referenced in the SIS report (i.e., the Clay – Pannell 1 & 2 345 kV lines and the Oswego – Elbridge/Lafayette 345 kV line) for the new substation/switchyard. A specific location has yet to be identified. Once National Grid identifies a specific proposed location for the future substation/switchyard, it will complete site specific resource studies[97] and engineering design and will apply to the NYSPSC for authorization to build the substation/switchyard, likely in the form of an amendment to its Article VII certificate for the Oswego-Lafayette 345 kV line.

Under New York law, Micron would be required to apply for interconnection approval from the NYISO for Fabs 3 and 4.

Further, NYPA has awarded Micron a power allocation through the ReCharge NY program

[97] Before National Grid will be able to assess the reasonably foreseeable environmental impacts of the substation, National Grid must obtain access to numerous properties to perform certain field work-related to wetlands and streams, noise, visual impacts, archeological or cultural resources, agricultural impacts, threatened and endangered species and electromagnetic fields.

to meet the Proposed Project's short-term electricity requirements. The ReCharge NY program provides qualified companies with seven-year contracts for NYPA power in exchange for certain job and economic commitments in New York State. Micron's initial ReCharge NY allocation consists of 140,000 kW (or 1,226 GWh), 50 percent of which is NYPA hydropower. In addition to the ReCharge NY allocation, Micron also has been approved for a 404,000 kW (or 3,539 GWh) High Load Factor (HLF) allocation for ten years. The ReCharge NY and HLF allocations would likely come from sources outside of Load Zone C. The HLF allocation is provided to energy-intensive industries and is sourced from the market. Based on the current spare capacity in Load Zone C and these additional allocations, even without new generation, existing grid capacity would be estimated to adequately supply the Proposed Project's needs through 2030, during construction and interconnection of Fabs 1 and 2.

The NYSPSC and National Grid are engaging with Micron in resource planning for the transmission system to accommodate the power needs of the Proposed Project's full build-out in 2041 (with construction and interconnection of Fabs 3 and 4). To provide additional distribution capacity to the Proposed Project amid anticipated demand growth in the service area, National Grid filed a petition with the NYSPSC seeking a CECPN (Case No. 24-T-0120) from the NYSPSC to construct new underground 345 kV transmission service laterals between the Clay Substation and the proposed Micron Campus and to expand the existing footprint of the Clay Substation (see Section 2.1.5). National Grid anticipates completing these upgrades between Q4 2025 and 2027. On October 17, 2025, the NYSPSC issued National Grid an Order Adopting the Terms of a Joint Proposal (Order), granting a CECPN pursuant to PSL Article VII to construct, operate, and maintain 345-kilovolt (kV) underground transmission service laterals between its existing Clay Substation and the proposed Micron Technology semiconductor manufacturing campus. In providing the Certificate, the PSC found that the "transmission project satisfies a public need and avoids or minimizes significant adverse impacts to the extent practicable given the state of available technology, the nature and economics of various alternatives, and all other pertinent considerations."[98] .

Induced growth throughout the five-county region would be anticipated to increase electricity demand in addition to the increased electricity demand associated with the Preferred Action Alternative. This would include additional demand generated from potential supply chain operations that may locate in close proximity to the Proposed Project as well as increased residential development. Although it cannot be predicted exactly when, or to what degree, the increased electricity demand from induced growth would occur, it is anticipated that the additional demand would expedite the time in which Load Zone C's current generation capacity is exhausted.

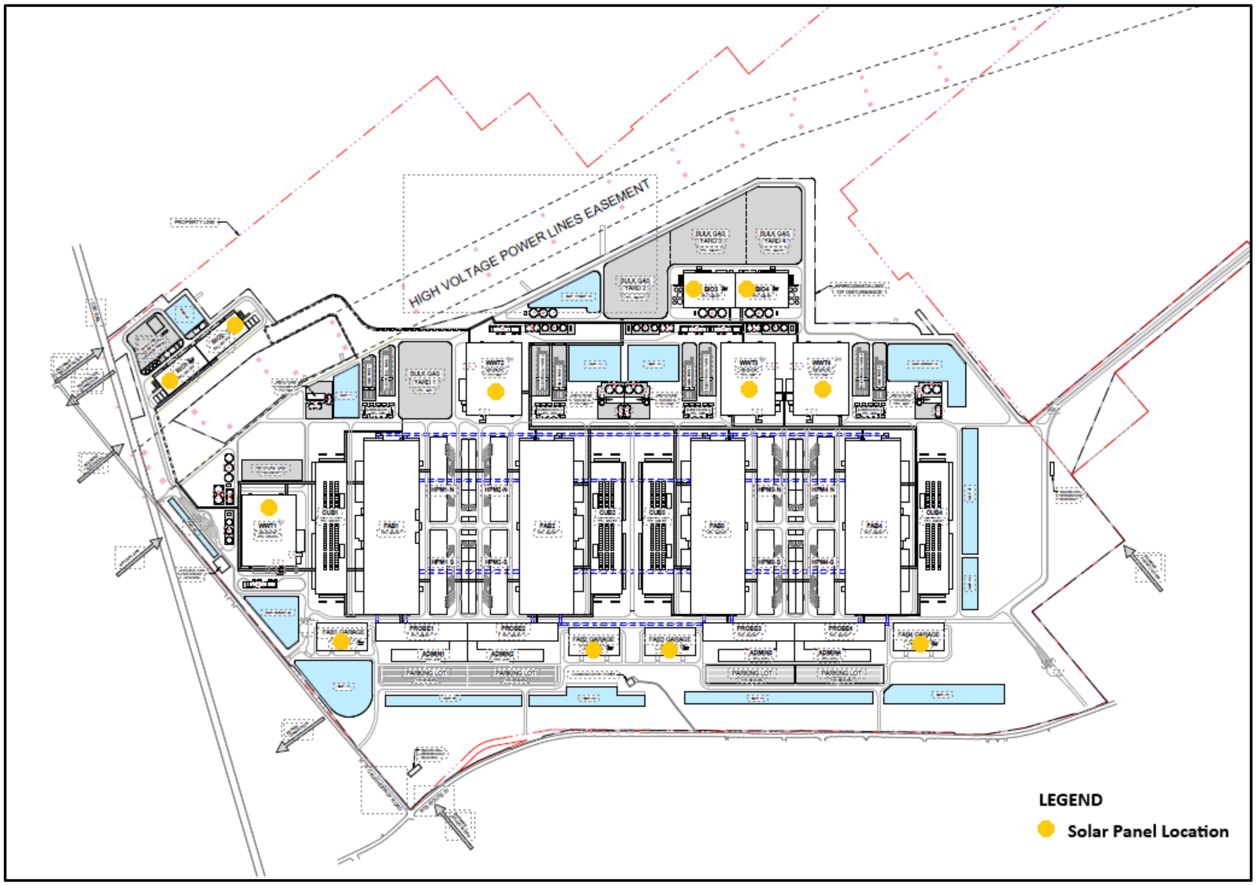
As a result, the Preferred Action Alternative would have a significant effect on electricity and transmission demand in Load Zone C, primarily because it would cause a greater and earlier exceedance of Load Zone C's local generation capacity than anticipated under the No Action Alternative, which may affect future planning for Load Zone C electricity supply. However, this effect would be adverse only if the NYISO and National Grid planning processes fail to ensure that additional generation capacity is adequate to support total electricity demand projected in Load Zone C and the remainder of the State when needed, whether in 2041 or earlier. The comprehensive State and utility planning processes would be anticipated to adequately prepare for the future

[98] Order, p. 2; see also Order, pp. 7-14

electricity demands associated with the Proposed Project, along with the future electricity demands in the State. Based on this long-term planning capacity, the Preferred Action Alternative would result in significant, but not adverse, effects on electricity demand and transmission resources.

As a BMP, Micron would plan to install solar panels on the roofs of certain Micron Campus buildings to generate renewable energy and help meet sustainability goals. Although the locations of the panels have not been finalized, Figure 3.10-3 shows current planned installation locations, including the roofs of the parking garages, WWT facilities, and BIO buildings.

Figure 3.10-3 Planned Solar Panel Locations



Source: Micron Technology (n.d.).

Natural Gas Consumption and Capacity

As noted in Section 3.10.2.2, National Grid's current peak (winter) service area capacity is approximately 457 Bcf per year or 1,253 MDth per day, approximately 76 percent of which is consumed by existing customers (National Grid, 2024b), leaving approximately 24 percent spare capacity that could supply new customers connecting to the system.

The Proposed Project's natural gas consumption would gradually increase over the course of its 16-year construction period as the fabs are built in phases (see Section 3.7.3.2 for natural gas use in operations). Accounting for the staggered fab construction schedule, the Proposed Project as a whole would be conservatively estimated to consume up to 2.17 Bcf in 2029, 4.34 Bcf in

2030, 6.51 Bcf in 2035, and a maximum 9.7 Bcf during peak usage at full build-out in 2041. As these are annual estimates, the Proposed Project would be conservatively estimated to have an average daily natural gas consumption rate at full build-out of 0.03 Bcf per day or 27 MDth per day. When compared to the current base case for natural gas demand in Upstate New York, this daily consumption would conservatively represent approximately two percent of existing peak capacity. Actual consumption would likely be lower when substitutable energy sources become available to replace natural gas in operations.

Table 3.10-2 shows the Proposed Project's gradually increasing natural gas consumption per phase as described above and the remaining spare capacity that could supply new customers beyond existing customers and the Proposed Project.

Table 3.10-2 Estimated Proposed Project Annual Peak Natural Gas Consumption

Phase	Fabs	Natural Gas Consumption	Remaining Spare Capacity
Base Case	-	-	108 Bcf / 24%
Phase 1A (2025-2029)	Fab 1	2.17 Bcf/year	106 Bcf / 23%
Phase 1B (2028-2030)	Fabs 1-2	4.34 Bcf/year	104 Bcf / 23%
Phase 2A (2033-2035)	Fabs 1-3	6.51 Bcf/year	102 Bcf / 22%
Phase 2B (2039-2041)	Fabs 1-4	9.7 Bcf/year	98 Bcf / 22%

These conservative estimates show that National Grid's existing gas supply and distribution system in Upstate New York would be able to readily accommodate the Proposed Project's natural gas demands from construction through full build-out while still preserving approximately 22 percent spare capacity, even in the absence of new supply growth.

Nevertheless, National Grid's Long-Term Plan Upstate Upgrade initiative specifically takes into account the anticipated needs of the Proposed Project and future anticipated growth in planning for future gas supply needs (National Grid, 2024b). As part of this initiative, National Grid is designing natural gas delivery system upgrades in coordination with Micron to ensure that sufficient natural gas delivery and system infrastructure capacity would be in place as the Proposed Project's demands would increase throughout construction and operations. National Grid also is basing its planning on a conservative future reference case to ensure it can continue to meet future system reliability requirements. As described in Section 2.1.6, the Connected Actions would include National Grid's expansion of GRS 147 and the new natural gas line from GRS 147 to the proposed Micron Campus. National Grid anticipates completing these upgrades between Q4 2025 and 2028.

In sum, the Proposed Project, at full build-out in 2041, when conservatively compared to the 2024-2025 base case, would account for approximately two percent of National Grid's existing Upstate New York service area capacity and leave approximately 22 percent spare capacity on top of the demand from the Proposed Project and the existing customer base. Although the actual figure in 2041 could change based on growth in the region throughout the Proposed Project's incremental 16-year construction period, National Grid's Long-Term Plan Upstate Upgrade initiative already accounts for additional anticipated capacity needs from the Proposed Project based on National Grid's conservative future reference case for gas demand in Upstate New York. Under the Preferred Action Alternative, National Grid and Micron would engage in cooperative long-term planning to accommodate the Proposed Project's increasing gas demand and anticipated growth in Upstate New York, including in the five-county region, and including induced growth as a result of the Proposed Project. This cooperative planning would include additional natural gas delivery contracting and system infrastructure installation and upgrades to ensure that the region's natural gas needs would continue to be more than adequately met. Micron also would commit to minimizing natural gas usage at Proposed Project facilities (see Section 3.7 (Greenhouse Gas Emissions, Climate Change, and Climate Resiliency) and Table 3.10-5 below). Therefore, the Preferred Action Alternative would not result in any significant adverse effects on natural gas consumption or capacity.

Water Usage and Capacity

As noted in Section 3.10.2.3, OCWA's current combined water supply capacity is approximately 77 MGD, an annual average 36 MGD or 47 percent of which is used by existing customers (during peak times, the average is up to 55 MGD or 71 percent).

The Proposed Project's water usage would increase over the course of its 16-year construction period as the fabs are built in phases. Accounting for the staggered fab construction schedule, the Proposed Project as a whole would be conservatively estimated to use up to 7.85 MGD in 2029, 17.4 MGD in 2030, 30.3 MGD in 2035, and 48 MGD at full build-out in 2041.

Table 3.10-3 shows the Proposed Project's increasing freshwater usage and remaining spare capacity in the OCWA system per phase.

Table 3.10-3 Estimated Proposed Project Average Freshwater Usage

Phase	Fabs	Freshwater Usage[1]	Remaining Spare OCWA System Capacity[2]
Base Case	-	-	41 MGD / 53%
Phase 1A (2025-2029)	Fab 1	7.85 MGD	33.2 MGD / 43%
Phase 1B (2028-2030)	Fabs 1-2	17.4 MGD	23.6 MGD / 31%
Phase 2A (2033-2035)	Fabs 1-3	30.3 MGD	10.7 MGD / 14%
Phase 2B (2039-2041)	Fabs 1-4	48 MGD	-7 MGD / -9%

Notes: [1] Estimates take into account anticipated supply of treated reclaimed water from OCDWEP as a result of Micron municipal flows provided to OCDWEP, but do not take into account anticipated additional supply of up to 12 MGD treated reclaimed water as a result of Micron flows provided to OCDWEP. [2] Potable water system capacity expansion planning is performed on a maximum-day basis where initial and remaining capacity is less as noted above.

Table 3.10-3 shows that the Proposed Project's estimated 2041 water usage, when added to current user demand, would exceed OCWA's base case water capacity by approximately nine percent. However, it is important to note that this is a static projection that does not account for two divergent factors. First, the projection does not account for other increases in water demand in the OCWA service area by 2041; the Proposed Project would be anticipated to induce residential growth in Onondaga County by an approximately 16,500 to 23,500 new households by 2041, which could increase current water usage by approximately 6.6 to 9.4 MGD.[99] At the same time, the above projection also assumes that the service area's total capacity would remain static (i.e., would not expand through new capacity improvements or conservation measures) over the course of the Proposed Project's 16-year construction period. Based on currently available information, and uncertainty relating to these two divergent factors, it is currently not feasible to determine whether or exactly when the Proposed Project would begin to pose capacity constraints in the OCWA service area, particularly in the years after 2029, during construction of Fabs 2 through 4. Therefore, the effects of the Proposed Project on water usage and capacity must be considered in the context of OCWA's longer-term planning.

The 48 MGD that would be required for the full build-out of the Proposed Project would be sourced from Lake Ontario through the LOWTP, which currently has a practical sustained output of approximately 54 MGD, a maximum capacity of 60 MGD, and a permitted water withdrawal limit of up to 62.5 MGD. OCWA's existing infrastructure could accommodate the freshwater demand exclusively from Fabs 1 and 2 with minor upgrades. However, to accommodate the freshwater demand beyond Fabs 1 and 2 and induced growth, OCWA has commenced the process of amending its water withdrawal permit under NYSDEC regulations consistent with the Great Lakes Water Compact. The application seeks to increase OCWA's existing permitted withdrawal from 62.5 MGD to 93.5 MGD. Notice of Compete Application was issued by the NYSDEC on July 25, 2025, and notice was given to the Great Lakes Compact for comment on July 29, 2025 (NYSDEC, n.d.-c). The permit amendment process remains ongoing and subject to further NYSDEC review and coordination.

Local water management authorities in the five county region, including OCWA, maintain plans for future growth that incorporate and subsume projections for induced growth associated with the Proposed Project.[100] To ensure continuous service, OCWA is designing its planned infrastructure improvements with redundancy measures, including redundant parallel pipelines and N+1 redundancy for critical equipment. These features enhance infrastructure resilience, minimizing risks to service reliability during maintenance or emergencies.

In addition, under the Preferred Action Alternative, Micron would commit to achieve up to a 75 percent water conservation rate by 2030 through on-site and off-site water reclamation, recycling, and reuse. Micron also is working with OCDWEP to develop additional methods for off-site water reuse, including evaluating two sources of recycled water to further reduce the Proposed Project's anticipated demand for freshwater supply from OCWA (see additional details

[99] This is based on an average household water consumption of 400 gallons per day (USEPA, 2008).

[100] See*, e.g.*, OCWA Annual Report Documentation (OCWA, 2023b), representative of planning documents from local water management authorities.

below under Wastewater Treatment and Discharge Capacity). Micron currently plans to receive up to 12 MGD of reclaimed water from OCDWEP.

Based on the above, the Preferred Action Alternative would have no significant effect on water usage and capacity, as the necessary system modifications and upgrades (see Section 2.1.7), the required withdrawal permit modifications, and the construction of required supply infrastructure, together with OCWA's and local water management authorities' planning processes, would collectively ensure adequate water system capacity to serve the Proposed Project and the increased customer base in 2041.

Wastewater Treatment and Discharge Capacity

As noted in Section 3.10.2.4, the existing OOWWTP has an average treatment rate for sanitary wastewater of approximately six MGD, with a maximum month-rated treatment capacity of 10 MGD (OCDWEP, 2024b). However, OCDWEP's planned Major Upgrade Project, which will proceed regardless of whether the Proposed Project is built, will increase the OOWWTP's sanitary wastewater treatment capacity up to 25 MGD to accommodate anticipated higher flows and loads within the Oak Orchard service area. The upgrade is still in the design and planning phases, with construction planned to start in 2026, wastewater upgrades planned to be completed in 2030, and the solids handling upgrades planned to be completed in 2034. OCDWEP's planned White Pine/NYS Route 31 Municipal Sewer Expansion, which also will proceed with or without the Proposed Project, will consist of a municipal pump station and force main, with construction anticipated to be completed in 2025 (Onondaga County, 2023).

The Proposed Project would involve the discharge of two different types of wastewater streams: sanitary wastewater and industrial wastewater. The Proposed Project would result in the discharge of approximately 2.6 MGD of sanitary wastewater at full build-out in 2041 for treatment at the OOWWTP. Treatment of this sanitary wastewater would be within the OOWWTP's current maximum month-rated treatment capacity of 10 MGD and within the planned Major Upgrade Project capacity of up to 25 MGD by 2041. The planned Municipal Sewer Expansion would further support the system's sanitary sewage capacity.

The Proposed Project's industrial wastewater discharges would increase over the course of its 16-year construction period as the fabs are built in phases. Accounting for the staggered fab construction schedule, the Proposed Project as a whole would be conservatively estimated to discharge up to 8.25 MGD of industrial wastewater in 2029, 16.5 MGD in 2030, 23.6 MGD in 2035, and 33.5 MGD at full build-out in 2041.

Table 3.10-4 shows the Proposed Project's increasing industrial wastewater discharges and remaining spare treatment capacity in the OCDWEP system per phase.

Table 3.10-4 Estimated Proposed Project Annual Industrial Wastewater Discharge

Phase	Fabs	Annual Industrial Wastewater Discharge[1]
Base Case	-	-
Phase 1A (2025-2029)	Fab 1	8.25 MGD
Phase 1B (2028-2030)	Fabs 1-2	16.5 MGD
Phase 2A (2033-2035)	Fabs 1-3	23.6 MGD
Phase 2B (2039-2041)	Fabs 1-4	33.5 MGD

Note: [1] Estimates are based on average of anticipated summer and winter daily flows and take into account Micron's planned measures for biological treatment and water reclamation on the Micron Campus.

Under the Preferred Action Alternative, OCDWEP would construct a new IWWTP and water reuse facilities on approximately 36 acres of land on its Oak Orchard site and a new industrial wastewater and reclaimed water conveyance system between the Oak Orchard site and the Micron Campus, both as Connected Actions to support the Proposed Project. Subject to NYSDEC approvals, the new IWWTP would be designed to serve the Micron Campus and anticipated industrial growth in the Oak Orchard service area.

OCDWEP would oversee the design, construction, operation, and maintenance of the IWWTP, water reuse facilities, and industrial wastewater and reclaimed water conveyance. As with the OOWWTP, OCDWEP would design the IWWTP and its associated systems and infrastructure with redundancy measures, including redundant pipelines and N+1 backup for critical infrastructure, to ensure continuous operation, enhance resilience, and minimize risks to service reliability in the event of failure. Accounting for redundancy and excess capacity, the IWWTP would be designed to accommodate a total maximum industrial wastewater discharge volume of 42 MGD.

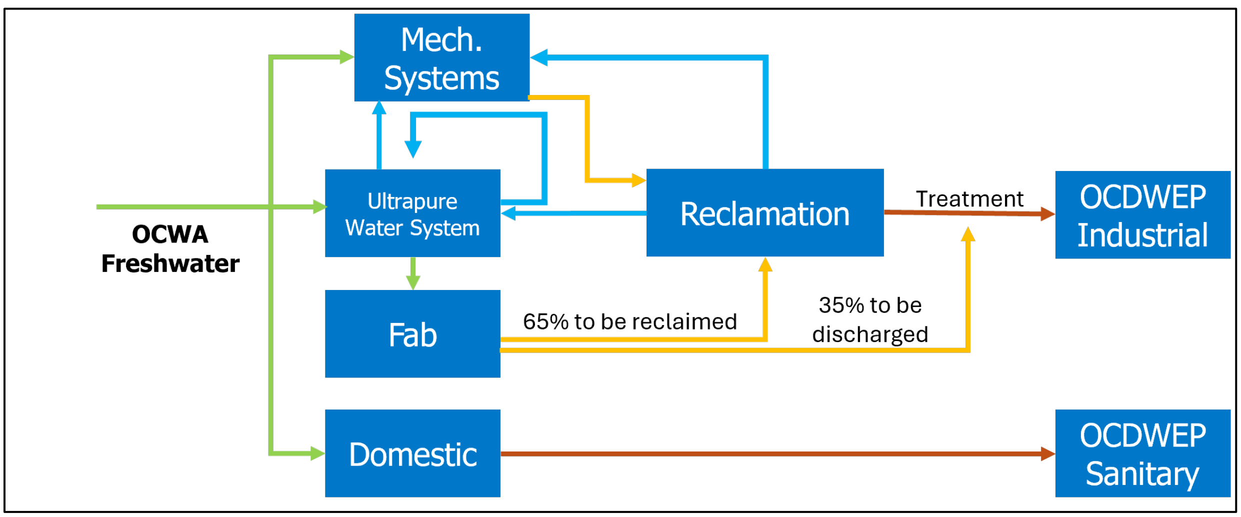
Construction of the IWWTP, water reuse facilities, and industrial wastewater and reclaimed water conveyance would occur in two stages: Stage 1 would be constructed from 2026 to 2029 to accommodate Proposed Project Phases 1A to 1B (i.e., Fabs 1-2), and Stage 2 would be constructed from 2033 to 2035 to accommodate Phases 2A to 2B (Fabs 3-4) (see Table 3.10-4 above and Section 2.1.8).

During the construction stages of the IWWTP, in addition to receiving sanitary wastewater from the Proposed Project, the OOWWTP would receive startup industrial wastewater from the Micron Campus. Under the Preferred Action Alternative, OCDWEP would undertake additional improvements to the OOWWTP as needed, such as a bridging project between the OOWWTP and under-construction IWWTP to accommodate the Micron Campus startup industrial wastewater flows, which would vary throughout construction, with anticipated peak flows ranging from approximately one to 3.7 MGD. The bridging project would provide interim treatment capacity and additional biological processes to accommodate and treat these startup flows until the Major Upgrade Project is completed.

Under the Preferred Action Alternative, the Proposed Project would seek to address longer-term industrial wastewater treatment and discharge needs as it approaches full build-out through two methods: water reclamation and water recycling.

First, Micron is designing the Proposed Project to reclaim as much industrial wastewater from the manufacturing process as possible for reuse within the manufacturing facility before it would need to be directed to OCDWEP's systems. Under this process, industrial wastewater flows from the manufacturing process would first be directed to the Micron Campus' internal water reclamation facility, which would reclaim a portion of the industrial wastewater for reuse in the manufacturing facility's mechanical systems and another portion for repurification in the facility's ultrapure water system for reuse in the fabs. Any industrial wastewater that could not be reclaimed would be pretreated by Micron to meet or exceed OCDWEP's pretreatment and water quality standards set by the IWDP before being discharged to the new IWWTP.[101] At this stage of the Proposed Project and IWWTP planning processes, reclamation and remaining wastewater flow rate estimates are not yet available. Figure 3.10-4 below illustrates the on-site water reclamation and reuse process.

Figure 3.10-4 Micron Industrial Wastewater Reclamation Process



Source: Micron Technology (n.d.).

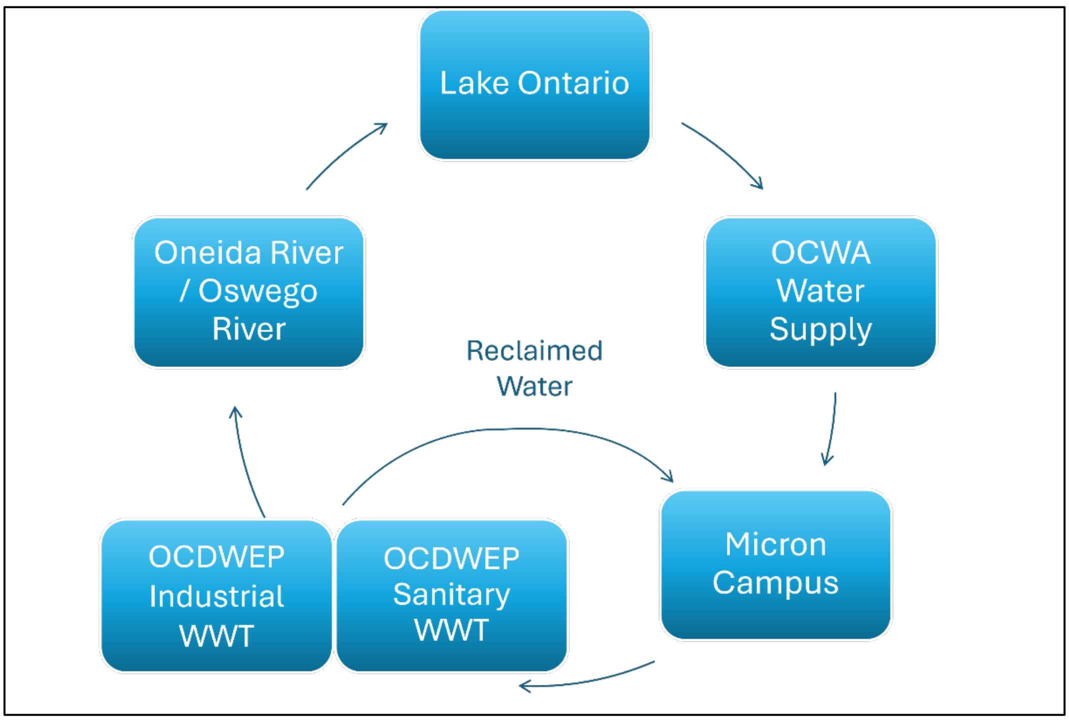
Second, under the Preferred Action Alternative, OCDWEP and Micron would collaborate to develop two primary sources of recycled water to resupply the Proposed Project's industrial water needs and reduce overall demands on the wastewater system. First, OCDWEP and Micron would develop a plan to reuse treated sanitary effluent volumes from the OOWWTP to supplement potable water deliveries from OCWA to the Micron Campus in the form of makeup water for the manufacturing facility's ultrapure water system (and potential other industrial end users). Second,

[101] Industrial wastewater pretreatment involves reducing or eliminating contaminants (e.g., suspended solids, biochemical and chemical oxygen demand, heavy metals, and fluoride) to comply with applicable effluent discharge limitations, which have not yet been determined at this stage of the IWWTP design and are subject to USEPA review and approval. The industrial wastewater also would be neutralized prior to discharge to the IWWTP. After pre-treatment, the wastewater would be pumped to a pump house in the northwest corner of the proposed Micron Campus and directed to the IWWTP via the new industrial wastewater conveyance.

OCDWEP and Micron would develop a plan to reuse treated industrial effluent volumes as makeup water for the facility's cooling towers and other mechanical systems.

Any treated effluent from the IWWTP that is not recycled and returned to the Micron Campus would be discharged into the Oneida River. The treated effluent would ultimately drain back into Lake Ontario, the freshwater source from which the water was originally withdrawn. This cyclical process—withdrawal, use, treatment, and return—would ensure the continued availability of Lake Ontario's water for future withdrawal. This water life cycle is depicted in Figure 3.10-5. Although Lake Ontario offers significant resilience due to its size, the lake remains vulnerable to water quality impacts, potentially affecting its suitability for withdrawal. However, the treated effluent from the Proposed Project and the IWWTP would be subject to NYSDEC SPDES permit terms and conditions, which would incorporate applicable technology and water quality-based effluent limitations for discharge of treated wastewater to the Oneida River, ultimately protecting Lake Ontario water quality (see Section 3.3, Water Resources).

Figure 3.10-5 Proposed Project Water Life Cycle



Source: Micron Technology (n.d.).

Induced growth from the Proposed Project is anticipated to increase sanitary wastewater discharge from new residential and commercial development. This development is expected to be located in existing, high-density areas, such as the City of Syracuse, which already have robust infrastructure. Therefore, additional wastewater infrastructure required due to growth induced by the Proposed Project is expected to be minimal. The affected counties responsible for wastewater infrastructure and wastewater treatment routinely plan for anticipated growth in their areas of jurisdiction and are factoring induced growth from the Proposed Project into their planning. OCDWEP is separately planning its OOWWTP Major Upgrade Project, which will increase the municipal wastewater treatment capacity to the greater Oak Orchard service territory. Across the five-county region, there would be a moderate increase in the demand for wastewater treatment. This increased demand is anticipated to be met by both the current and planned wastewater infrastructure managed by local wastewater management authorities.

The Preferred Action Alternative would require treating an increased volume of sanitary wastewater at the OOWWTP due to area growth and at other wastewater facilities within the broader five-county region. However, local wastewater management authorities plan for and accommodate this and other reasonably foreseeable growth. The Preferred Action Alternative would also require treating a high volume of industrial wastewater at the IWWTP, which would be constructed to accommodate the needs of the Proposed Project. With the existing, planned, and future wastewater infrastructure, the Preferred Action Alternative is not anticipated to have a significant adverse effect on the wastewater treatment infrastructure capacity.

Broadband Internet Connectivity Capacity

As noted in Section 3.10.2.5, the five-county region predominantly consists of historically developed areas with established comprehensive telecommunications networks serving residents and businesses with broadband service rates exceeding 95 percent. The existing fiber optic infrastructure would be fully capable of providing high-speed broadband internet connectivity and capacity to accommodate the Proposed Project. As part of the Connected Actions, the existing fiber-optic lines along Caughdenoy Road and NYS Route 31 would be extended to connect to the Micron Campus (see Section 2.1.9). The Proposed Project would include an underground fiber optic cable network and telecommunications system designed to provide high-speed broadband connectivity, full network coverage, and ample bandwidth capacity. This system also would include capacity for future expansion, featuring two separate, redundant fiber pathways to ensure continuity.

To the extent the Proposed Project would induce new residential and commercial growth in the five-county region, such new development would likely occur primarily in existing high-density residential and business areas, where telecommunications infrastructure is already robust and relatively easy to expand to new units. Most new development would involve occupation or re-occupation of existing structures using existing telecommunications systems, with little to no effect on existing networks. Any necessary expansion of telecommunications networks to accommodate growth in or outside of existing high-density areas would be completed in accordance with federal, state, and local requirements and would be anticipated to meet the consistent high service rates and quality experienced across the region.

Based on the above, the Preferred Action Alternative would not result in any significant adverse effects on broadband internet connectivity or capacity or the existing telecommunications networks in the region.

3.10.4 Summary of Effects

As outlined above, the Preferred Action Alternative likely would have significant, but not adverse, effects on electricity and transmission demand in Load Zone C, due to a potentially earlier and greater exceedance of local generation capacity compared to the No Action Alternative. However, long-term grid and transmission planning by the appropriate entities is expected to ensure adequate capacity to meet future electricity demands, regardless of where the generation occurs. Although natural gas demand under the Preferred Action Alternative would require system upgrades and expanded infrastructure, coordinated long-term planning between Micron and National Grid is expected to ensure sufficient delivery capacity, resulting in no significant adverse effects on natural gas consumption or capacity. The Proposed Project would have no significant adverse effect on water usage and capacity, as necessary system upgrades, permitting, and infrastructure development led by OCWA and local water authorities are expected to maintain adequate capacity. Wastewater treatment needs, including both sanitary and industrial wastewater, would be accommodated by existing and planned infrastructure, including construction of the IWWTP, avoiding any significant adverse effects on wastewater treatment capacity. The Preferred Action Alternative would not result in any significant adverse effects on broadband internet connectivity or telecommunications infrastructure, as existing systems are expected to meet both current and future regional demand.

3.10.5 BMPs and Mitigation Measures

As described in Section 3.10.3.2, the Preferred Action Alternative is anticipated to have a significant, but not necessarily adverse, effect on electricity generation and transmission resources. Micron anticipates that over the course of the long-term construction of the Micron Campus, the agencies with jurisdiction over New York State’s energy generation and transmission resources will plan and implement measures to meet Micron’s forecasted energy demand and the demands of other users of energy in the State. However, neither Micron, nor the Federal or State agencies issuing this EIS, have jurisdiction over regional or statewide planning for future electricity demand (including the future demands of the Proposed Project), or for determining the precise measures that will be undertaken in the future to ensure that those demands are met. Accordingly, the authority for ensuring that such demands are met are delegated to separate State and regional electricity planning entities with their own public administrative and adjudicatory processes, no specific mitigation measures are identified to address the Preferred Action Alternative’s significant demand on electricity resources.

As shown in Table 3.10-5, the Proposed Project design includes a number of measures intended to provide on-site electricity generation and reduce energy demand, including installation of solar panels where feasible, and the use of energy-saving methods and practices at all Proposed Project facilities, including the Micron Campus, as a part of day-to-day operations. Though these on-site energy generation facilities would not themselves substantially offset the total grid demand associated with the Micron Campus, they do maximize efficient use of the Micron Campus for carbon-free energy generation. Micron has additionally committed to working with State entities including NYPA, ESD, and NYSERDA to identify reasonably feasible opportunities to procure new renewable or carbon-free electricity projects in New York and is also reviewing opportunities for 24/7 and/or time-matching-based renewable energy sources related to storage.

Table 3.10-5 BMPs for Utilities and Supporting Infrastructure

<table>
<tr><th>Activity</th><th>BMP Description</th></tr>
<tr><td>Operations</td><td>Reduce electricity consumption through energy-efficiency measures:
Achieve LEED Gold certification for all fabs and use commercially reasonable efforts to achieve LEED Platinum certification for all office buildings.
Install on-site renewable energy systems, such as solar panels, and on-site battery storage systems to supplement the Proposed Project’s energy supply to the extent practicable.
Optimize tool processes to reduce power consumption.
Use energy efficient heating, ventilation, and air conditioning equipment.
Use light-emitting diode fixtures where feasible and appropriate.</td></tr>
<tr><td>Operations</td><td>Reduce water consumption through water conservation measures:
Achieve LEED Gold certification for all fabs and use commercially reasonable efforts to achieve LEED Platinum certification for all office buildings.
Increase and maximize water recycling, reuse, and restoration, where feasible.</td></tr>
<tr><td>Operations</td><td>Reduce natural gas consumption by researching and implementing fuel alternatives, where feasible.</td></tr>
</table>

3.11 TRANSPORTATION AND TRAFFIC

This section summarizes the transportation analysis that identifies and assesses the traffic impacts of the Proposed Project, which includes the Micron Campus, Childcare Site, and Rail Spur Site. To analyze the traffic impacts of the Proposed Project, this section describes the effects of the No Action Alternative and the Preferred Action Alternative. Additionally, this section assesses the effects of the recommended mitigations on reducing the impacts of the Proposed Project.

In support of the transportation analysis, a Traffic Impact Study (TIS) was prepared to assess the traffic impacts of the Proposed Project, analyze the impacts of alternatives, and identify and evaluate potential transportation improvements to minimize significant impacts resulting from the Proposed Project. In accordance with the Final Scope agreed upon with NYSDOT, the TIS defines the transportation roadway network that could be impacted by the Preferred Action Alternative. The TIS is referenced herein and included in its entirety as Appendix M.

3.11.1 Legal and Regulatory Setting

The transportation analysis for the Proposed Project consists of roadways under various federal, state, and local jurisdictions, each governed by independent design standards and permitting requirements outlined in Table 3.11-1.

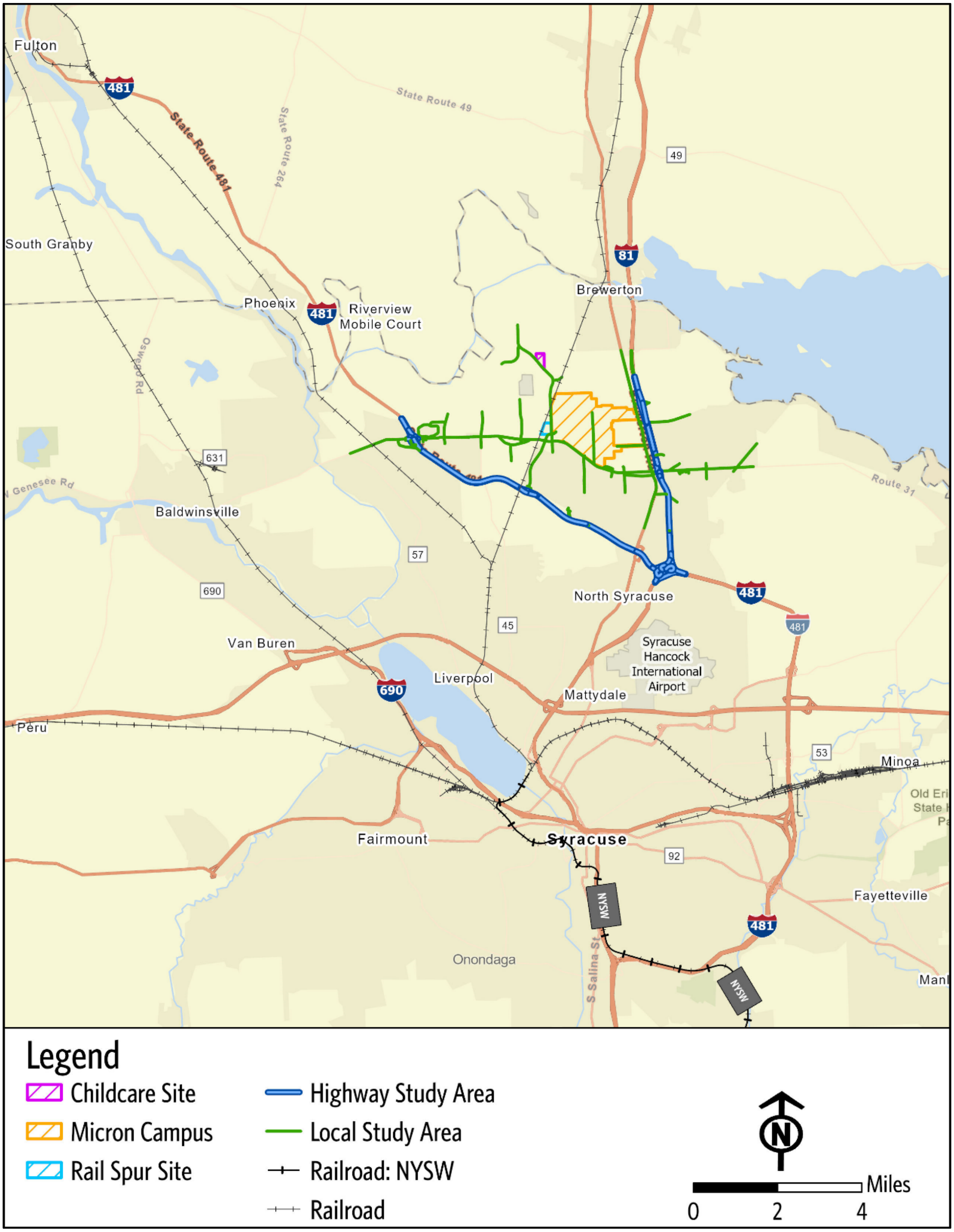
Table 3.11-1 Transportation Legal and Regulatory Setting

Statute, Regulation, Guideline	Description
MOU between Federal Highway Administration (FHWA) and Department of Commerce (DOC), signed December 4, 2024.	Establishes the role of FHWA as a participating agency in providing input related to FHWA's area of technical expertise for this EIS.
New York State Code Rules and Regulations Title 17, Part 15.	Establishes additional procedures for the implementation of the SEQRA by the NYSDOT.
New York State Highway Law, Article 3, Section 52 (Permits for work within state highway rights-of-way (ROW)).	Establishes the requirement that necessary permits must be obtained from the NYSDOT before work within a state highway ROW can commence.
NY General Municipal Law Section 239-f and NY Highway Law Section 136.	Regulates the construction or modification of buildings, driveways, and miscellaneous means of access, related to any proposed or existing county road or drainage system in Onondaga County.

3.11.2 Affected Environment

This section describes the existing transportation characteristics in the transportation study area. In 2023 and 2024, a comprehensive data collection effort was conducted throughout Onondaga County on NYSDOT, Onondaga County Department of Transportation (OCDOT), and New York State Thruway Authority (NYSTA) transportation facilities. The traffic data was collected at several locations to establish the transportation study area and existing traffic conditions. A map of the study area transportation network is shown in Figure 3.11-1 and discussed further in Appendix M, Section 2, Methodology and Assumptions, and Section 3, Existing Transportation System.

Figure 3.11-1 Study Area: Transportation Network



3.11.2.1 Methodology

The identified traffic analysis software and methodology were utilized to generate traffic data, including delays, congestion, and queuing, consistent with the standard of practice set forth by NYSDOT. For a detailed description of the methodology, see Appendix M, Section 2. Methodology and Assumptions.

Traffic analysis software:

- Synchro (Trafficware): Synchro software, version 11, was used to evaluate the non-freeway roadway networks (signalized and unsignalized intersections) in the transportation study area and to optimize signal timing for future-year scenarios.
- VISSIM (PTV): VISSIM is a microscopic simulation software program. Version 2023 was used to perform detailed traffic operations analysis of freeway networks in the transportation study area.
- VISUM (PTV): VISUM was used to forecast future traffic based on land use projections, socioeconomic patterns, and transportation system characteristics. The VISUM software runs the travel demand model by calculating daily and peak-period volumes and future demand.
- Regional Travel Demand Model: SMTC maintains a regional travel demand forecasting model (the Regional Model) for the Syracuse metropolitan region, which covers Onondaga County, the Town of Sullivan in Madison County, and the Towns of Hastings, Schroeppel, and West Monroe in Oswego County. Like VISUM, the Regional Model predicts future travel demand based on land use projections, socioeconomic patterns, and transportation system characteristics. The regional model forecasts also include induced demand caused by the proposed project and components that utilize existing facilities.

Traffic Metrics:

- The Highway Capacity Manual (HCM) quantifies traffic flow quality in terms of level of service (LOS) (National Academies of Sciences, Engineering, and Medicine, 2022). There are six LOS designations, ranging from LOS A (indicating little or no delay) to LOS F (indicating high delays). The LOS rating is based on the level of congestion, which is represented by a four-tier system ranging from light congestion (characterized by free-flowing traffic with minimal delay) to severe congestion (excessive delay and stop-and-go conditions). Moderate congestion and heavy congestion represent traffic conditions between minimal and severe congestion.
- Table 3.11-2 and Table 3.11-3 show the LOS criteria for intersections and freeways, respectively. Roundabouts are assessed using the same LOS criteria as signalized intersections.
- The analysis applied Synchro, VISSIM, VISUM, and the Regional Model to the future No Action Alternative and the Preferred Action Alternative, and is discussed further in Section 3.11.3.

- Based on traffic data collected and the construction and operations shift schedule of work at the Micron Campus, two hours were analyzed in the morning and evening peak periods: 6:00 a.m. to 8:00 a.m. and 4:00 p.m. to 6:00 p.m. This captures the existing commuter peaks at 7:00 a.m. and 5:00 p.m., and the construction workers peak at 6:00 a.m. and 4:00 p.m.

Table 3.11-2 LOS at Intersections

LOS	Congestion Level	Signalized	Unsignalized
		Average Delay (seconds/vehicle)	
A	Light	<= 10	<= 10
B		> 10–20	> 10–15
C		> 20–35	> 15–25
D	Moderate	> 35–55	> 25–35
E	Heavy	> 55–80	> 35–50
F	Severe	> 80	> 50

Sources: Transportation Research Board 2022 HCM 7 (National Academies of Sciences, Engineering, and Medicine, 2022)

Table 3.11-3 LOS at Freeways

LOS	Congestion Level	Freeway Basic Segment	Freeway Merge or Diverge Segment	Freeway Weave Segment
		Average Density (pc/mi/ln)		
A	Light	<=10	<=11	<=11
B		> 10–18	> 11–20	> 11–20
C		> 18–26	> 20–28	> 20–28
D	Moderate	> 26–35	> 28–35	> 28–35
E	Heavy	> 35–45	> 35–45	> 35–45
F	Severe	> 45	> 45	> 45

Source: Transportation Research Board 2022 HCM 7 (National Academies of Sciences, Engineering, and Medicine, 2022)

Table 3.11-4 shows the thresholds developed using HCM as the baseline to define significant impacts. If operations in the No Action Alternative are identified at the LOS levels noted below and those same operations degrade to the LOS identified in the Preferred Action Alternative, then the impact is defined as significant. These thresholds were established in collaboration with NYSDOT and align with those used in EISs for other major sites across New York State.

Table 3.11-4 Significant Impacts Criteria

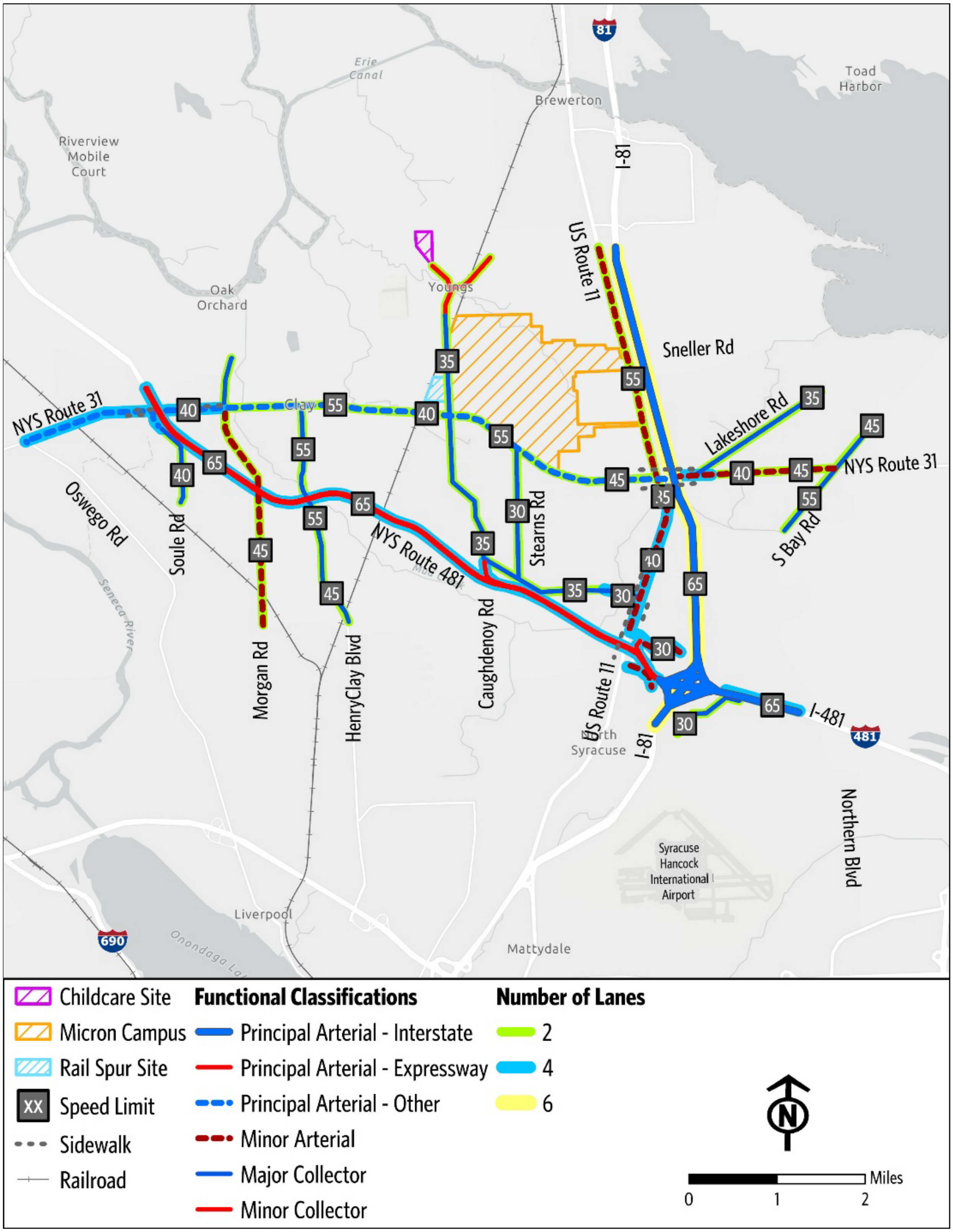
Metric	No Action Alternative	Preferred Action Alternative
Overall Intersection LOS	LOS A, B, C, or D	LOS E or F
	LOS E or F	LOS E or F with an increase in average delay of 5 seconds/vehicle or more when compared to the No Action Alternative.
Freeway Segment LOS	LOS A, B, C, or D	LOS E or F
	LOS E	LOS F
	LOS F	LOS F with a reduction in speed of 5 mph or more along a segment 500 feet or longer.

3.11.2.2 Roadway System

The roadway network in the transportation study area is shown in Figure 3.11-2. The network comprises limited-access facilities, such as I-81 and NYS Route 481, arterials, including U.S. Route 11 and NYS Route 31, and collector roads, including Caughdenoy Road and Morgan Road. Appendix M, Section 3, Existing Transportation System, provides a detailed description of the characteristics of roadways in the transportation study area.

Traffic data collected in 2023-2024 were analyzed using the traffic analysis tools described in 3.11.2.1. Figure 3.11-3 and Figure 3.11-4 summarize the LOS for freeway segments and intersections.

Figure 3.11-2 Roadway Characteristics



Source: NYSDOT (2023); Micron Technology (n.d.)

Figure 3.11-3 Freeway LOS (Existing Conditions)

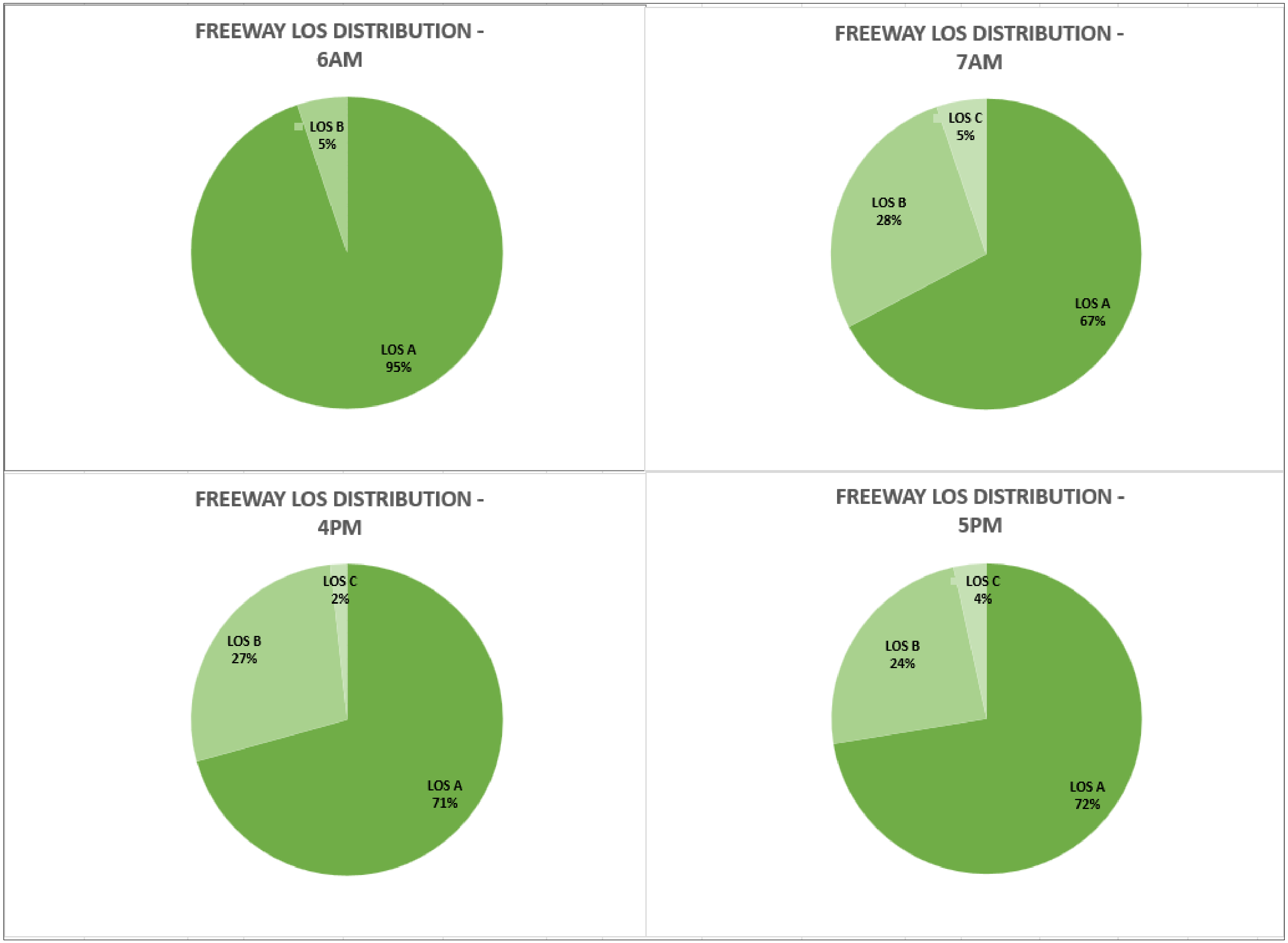
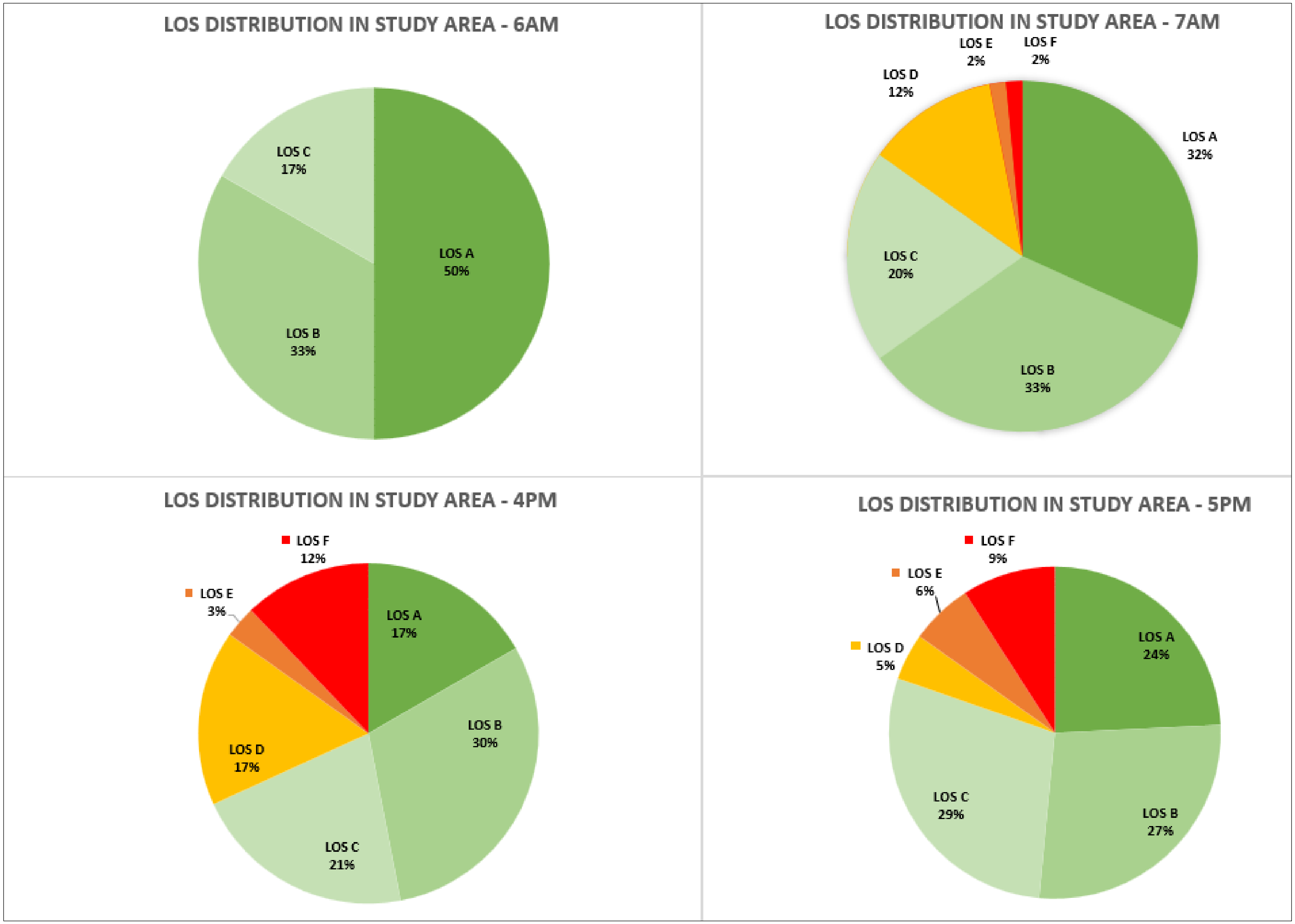


Figure 3.11-4 Intersection LOS (Existing Conditions)



Under existing conditions, all freeway segments operate at LOS C or better in peak hours. About two percent of the intersections operate at LOS E and F at the 7:00 a.m. peak. In the p.m. peak hours, about 15 percent of the intersections operate at LOS E or worse in both the 4:00 p.m. and 5:00 p.m. peak hours. Table 3.11-5 shows the list of intersections operating at LOS E or worse in peak hours.

Table 3.11-5 Intersections with High Delays (Existing Conditions)

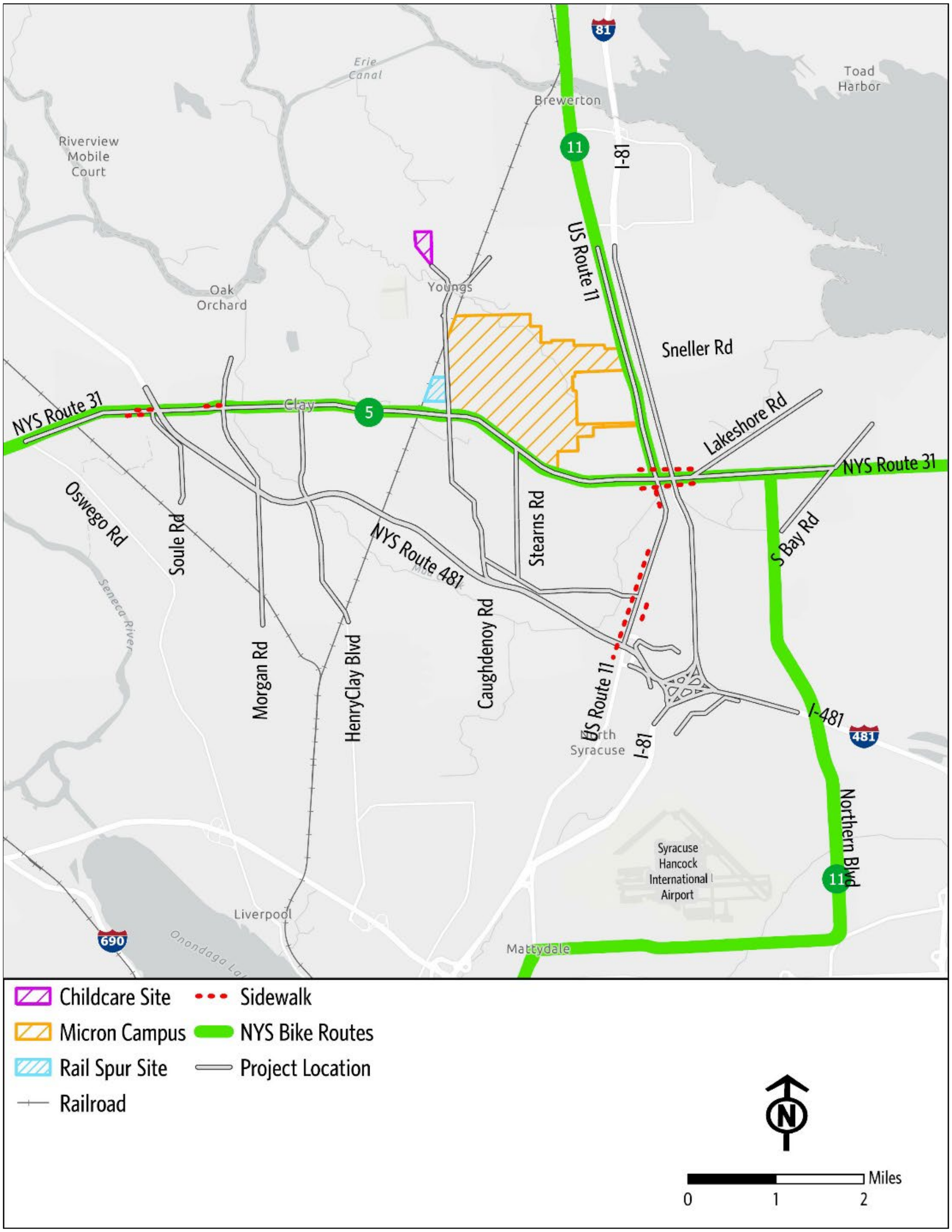
No.	Intersection Name	2023 Existing			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		6 AM		7 AM	
1	Morgan Road and NYS Route 31	30	C	59	E
2	NYS Route 31 and Lakeshore Road*	16	C	51	F
		4 PM		5 PM	
1	Grange Road West and NYS Route 31*	52	F	48	E
2	NYS Route 31 and I-81 SB Ramp	79	E	59	E
3	Thompson Road/Torchwood Lane and NYS Route 31	217	F	145	F
4	U.S. Route 11 and Bear Road	66	E	56	E
5	U.S. Route 11 and Crabtree Lane*	>300**	F	>300**	F
6	McNamara Drive/Driveway and NYS Route 31*	>300**	F	229	F
7	Doreen Avenue and NYS Route 31*	58	F	39	E
8	NYS Route 31 and Lakeshore Road*	288	F	155	F
9	NYS Route 31 and Oswego Road	125	F	80	F

Note
* Unsignalized Intersections
**Intersections that experience an average delay of more than 300 seconds are shown as ">300" and are anticipated to have significant delays and queues.

3.11.2.3 Bicycle and Pedestrian Facilities

The existing bicycle and pedestrian infrastructure within the transportation study area is shown in Figure 3.11-5 and is limited and fragmented. Concrete sidewalks exist along limited sections of NYS Route 31 within the study area between Lakeshore Road and U.S. Route 11. There are no sidewalks on the NYS Route 31 bridge across NYS Route 481. On U.S. Route 11, concrete sidewalks exist along limited sections near the NYS Route 31 intersection.

Figure 3.11-5 Bicycle and Pedestrian Facilities



Sections of NYS Route 31 and U.S. Route 11 (north of NYS Route 31) are designated as New York State bike routes, where bicyclists must share the travel lanes with motor vehicles. While these facilities offer some connectivity, they lack continuity and connections needed to support significant employment and activity centers, such as the Proposed Project. For further details, see Appendix M, Section 3.2, Multimodal Transportation.

3.11.2.4 Public Transportation

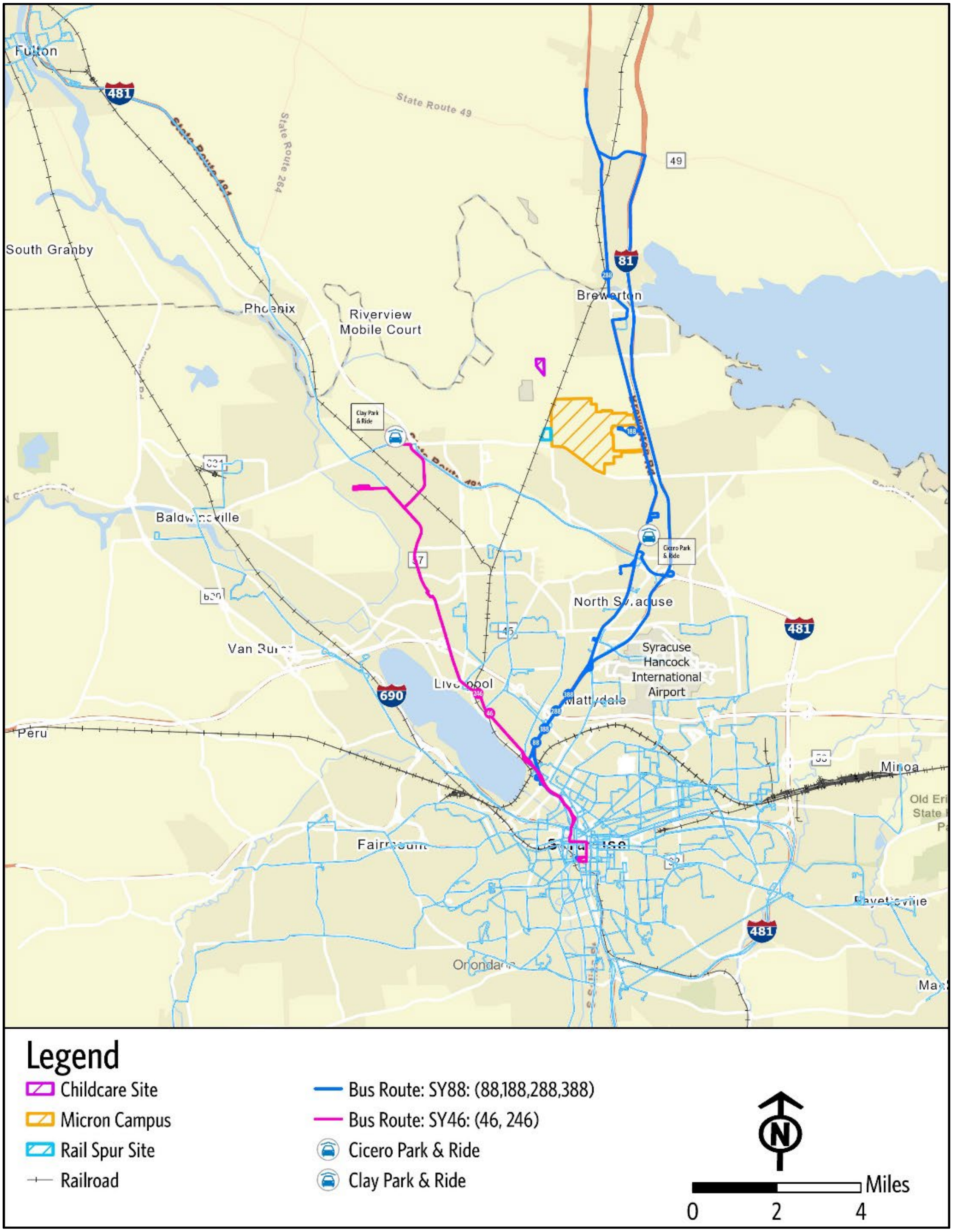
The Central New York Regional Transit Authority (Centro) provides public transportation services throughout Onondaga County and the surrounding regions. Eight Centro bus routes operate daily within the transportation study area and are regional rather than local, resulting in widely spaced and infrequent stops. Details are presented in Table 3.11-6 and shown in Figure 3.11-6.

Table 3.11-6 Existing Bus Transit Services

Bus Route	Description
Route 46 (Liverpool – Route 57 – Great Northern Mall (GNM))	Route 46 follows NYS Route 31 for a short segment in the northwest portion of the transportation study area. The route travels on NYS Route 31 to provide access to the Clay Park-and-Ride Lot but does not serve anywhere else in the transportation study area. The bus services this lot approximately seven times daily at approximately 2-hour intervals in both directions between Liverpool and downtown Syracuse.
Route 88 (N. Syracuse)	This route follows U.S. Route 11 to service the Cicero Park-and-Ride Lot northeast of the NYS Route 481 interchange with U.S. Route 11. The route runs three times weekly to the Cicero Park-and-Ride Lot, arriving in the morning and evening peak hours for the northern route from Syracuse.
Route 188 (N. Syracuse - Cicero)	This bus route follows U.S. Route 11 through the transportation study area to Central Square. The route parallels the eastern boundary of the WPCP. The service supplements Route 88 with weekday stops at the Cicero Park-and-Ride mid-morning before continuing north to Central Square.
Route 246 (Oswego – Syracuse via Fulton/Phoenix)	This bus route overlaps Route 46 within the transportation study area to serve the Clay Park-and-Ride Lot. The service supplements northbound Route 46 with morning, afternoon, and early evening stops between those for Route 46. In the southbound direction, this route makes one stop at the park-and-ride lot mid-morning.
Route 288 (N. Syracuse – Cicero – Central Square)	This route overlaps Route 188 within the transportation study area and parallels the eastern boundary of the WPCP. This route runs from Central Square to Syracuse, with two stops at the Cicero Park-and-Ride Lot during the evening peak hour.
Route 388 (Central Square)	Route 388 follows NYS Route 481 within the transportation study area between I-81 and U.S. Route 11 and then along U.S. Route 11 through the northeast portion of the transportation study area to Central Square. This route overlaps with Routes 188 and 288 to the north/east of the NYS Route 481 interchange with U.S. Route 11, paralleling the eastern boundary of the WPCP. The service supplements Route

Bus Route	Description
	88 with weekday northbound stops at the Cicero Park-and-Ride Lot during the evening peak hour.
Clay Park-and-Ride Lot	Routes 46 and 246 service this lot at the GNM in the northwest portion of the transportation study area. The lot is accessed from NYS Route 31, approximately 2.5 miles west of the WPCP.
Cicero Park-and-Ride Lot	Routes 188, 288, and 388 service this lot, located at the Wegmans parking lot, accessed from the U.S. Route 11 intersection with Caughdenoy Road. The lot is approximately 1.5 miles southeast of the WPCP.

Figure 3.11-6 Transit Routes



3.11.2.5 Rail System

The Proposed Project is located near two existing rail systems (the CSX freight line and the New York, Susquehanna, and Western Railway (NYSW) Main Line), which form an interconnected network supporting industries reliant on rail transport for raw materials, goods distribution, and passenger movement. The existing rail lines are shown in Figure 3.11-1. Rail crossings within the study area include:

- NYS Route 31, an at-grade rail crossing, is approximately 1,800 ft. west of the Caughdenoy Road intersection.
- Caughdenoy Road, an at-grade rail crossing, is approximately 1,500 ft. south of the Verplank Road intersection.
- Mud Mill Road, an at-grade rail crossing, is located approximately 1,110 ft. northeast of the Caughdenoy Road intersection.
- Maple Road, an at-grade rail crossing, is approximately 1.2 miles west of the Caughdenoy Road intersection.

The CSX freight rail line is adjacent to the WPCP and the proposed Rail Spur Site. Currently, there is only one train trip per day on this line. It generally runs east-west and north-south across New York State as a vital freight corridor, connecting intermodal hubs such as the Port of Albany, the Port of Oswego on Lake Ontario, the Port of Buffalo on Lake Erie, and the national rail network and international markets. The NYSW line generally runs north-south, connecting the City of Syracuse with the Port of New York and New Jersey. The CSX line feeds into the NYSW Main Line, providing regional freight connections throughout Central New York.

Amtrak also operates passenger trains on certain CSX-owned tracks in the region under lease agreements. Amtrak passenger trains do not run on the CSX rail line adjacent to the WPCP and Rail Spur Site.

3.11.2.6 Airport

The Syracuse Hancock International Airport (SYR) is the only internationally designated airport in Onondaga County. Figure 3.11-1 shows that SYR is located approximately 5.6 miles southeast of the Proposed Project. SYR serves several passenger and air cargo destinations across the northeast. The airport has two usable runways, measuring 9,003 ft. and 7,500 ft. in length (each 150 ft. wide). The Federal Aviation Administration designated SYR as a medium hub airport and served over 1.5 million passenger enplanements in 2024.

SYR is updating its Master Plan to meet the area's growing needs. This includes expanding unmanned aircraft systems (UAS), de-icing upgrades, increasing cargo capacity, and reviewing non-aeronautical land development. By 2040, SYR is expected to serve about two million passenger enplanements.

3.11.2.7 Safety

Crash data within the study area, compiled from 2018 to 2022, was used to calculate crash rates along study highway segments and at study intersections. These calculated crash rates were then compared with statewide average crash rates for similar facilities to identify locations exhibiting higher-than-average crash rates. Based on this comparison, the following locations were identified. Further details for the crash analysis can be found in Appendix M.

- No freeway segments were found to exhibit crash rates higher than the statewide average for similar facility types.
- All studied ramp segments (15 ramp segments) were found to exhibit crash rates higher than the statewide average for similar facility types.
- 28 study intersections were found to exhibit crash rates higher than the statewide average for similar facility types. These higher average crash rate intersections were focused along the following corridors:
  - eight intersections along U.S. Route 11
  - 18 intersections along NYS Route 31
  - two intersections along Caughdenoy Road

3.11.3 Environmental Consequences

This section analyzes how the No Action Alternative and Preferred Action Alternative would affect transportation in the evaluation area.

Construction of the Proposed Project is expected to commence in late 2025 and span 16 years. This process would result in continuous construction activity on the Micron Campus from 2025 to 2041. Construction workers and manufacturing employees engaged in building the successive phases of the four-fab campus would be co-located at the Micron Campus until full build-out in 2041. Overall, the number of workers on-site would continually increase until construction and internal outfitting of Fab 4 is complete, with final site work continuing into late 2041, internal equipment fit out continuing in 2042, and ramp up to full production by 2045, at which point the on-site construction workforce would be reduced to a continuous nominal presence required for the implementation of each new memory chip production technology node. From 2043 to 2045, as the campus ramps up to full production, the operational workforce would increase while the construction workforce would decrease. For more detailed information on the quantification of construction workers and manufacturing employees at the Micron Campus, see Section 2.1 and Figure 2.1-6 Proposed Project On-Site Construction, Operation, and Total Headcount (2025-2045).

Multiple signalized entrances are anticipated to be provided to the Micron Campus for operational staff, construction staff, and construction vehicles. Initially, four driveways and one construction access point would be provided. Towards the end of construction, six driveways and one construction access point would be provided.

3.11.3.1 Analysis Alternatives and Scenarios

The analysis considers two alternatives: the No Action Alternative and the Preferred Action Alternative. It also quantifies the ability of recommended improvements to mitigate the adverse impacts of the Preferred Action Alternative. Ultimately, the recommended improvements are within the jurisdiction of relevant federal, state, and local transportation agencies and would be subject to separate environmental review, with implementation also carried out by these agencies.

A comprehensive assessment of the transportation impacts of the Proposed Project was conducted for the following years.

- Existing conditions representing years 2023-2024. See Section 3.11.2.2 and Appendix M, Section 5, Existing Traffic Operations.
- Forecast year 2027 represents the ramp-up of construction activity at the Micron Campus, where operational and construction worker head count peaks prior to 2031. No significant transportation improvements are anticipated to be built by 2027 in response to the Proposed Project.
- Forecast year 2031 represents the peak activity associated with constructing and operating Fabs 1 and 2, and the transportation improvements that may be implemented in response to the Proposed Project are expected to be completed by 2031.
- Forecast year 2041 represents the peak activity associated with the construction and operation of the Micron Campus. Forecast year 2041 is expected to generate the most trips and, thus, have the greatest impact on the transportation system. This is due to the combined demand from construction trips generated by the construction of Fab 4, and operational trips from the three existing in-service fabs.

3.11.3.2 No Action Alternative Analysis

Under the No Action Alternative, the Proposed Project would not be built. The No Action Alternative includes future developments in the transportation study area that will alter traffic volumes and projects that will change the transportation study area roadway network, impacting traffic operations. Future land use and planned transportation network changes for the transportation study area that are known are assumed to be in place at defined target completion dates. Chapter 4 (Cumulative Effects), Table 4.2-1, details these anticipated future changes. Approved future developments and planned roadway improvement projects in the transportation study area were identified through coordination with NYSDOT, OCDOT, SMTC, and the Towns of Clay and Cicero, and incorporated into future analysis year study scenarios.

A summary of the No Action Alternative traffic analysis for the Years 2027, 2031, and 2041 is provided herein for comparison with the Preferred Action Alternative and recommended mitigations to determine significant impacts. For a detailed analysis, see Appendix M.

Table 3.11-7 provides a summary of the analysis results for all three years, while Figure 3.11-7 and Figure 3.11-8 display the 2027 results, Figure 3.11-9 and Figure 3.11-10 display the 2031 results, and Figure 3.11-11 and Figure 3.11-12 display the 2041 results.

Table 3.11-7 No Action Alternative Results Summary (2027, 2031 and 2041)

	Percentage of Facilities Operating at LOS E or F											
Facility Type	**2027 No Action Alternative**				**2031 No Action Alternative**				**2041 No Action Alternative**			
	6:00 AM	**7:00 AM**	**4:00 PM**	**5:00 PM**	**6:00 AM**	**7:00 AM**	**4:00 PM**	**5:00 PM**	**6:00 AM**	**7:00 AM**	**4:00 PM**	**5:00 PM**
Freeway Segments	0%	0%	0%	2%	0%	0%	3%	3%	0%	4%	2%	10%
Intersections	0%	0%	8%	4%	1%	5%	40%	24%	0%	6%	30%	21%

Figure 3.11-7 Freeway LOS (No Action Alternative in 2027)

Figure 3.11-8 Intersection LOS (No Action Alternative in 2027)

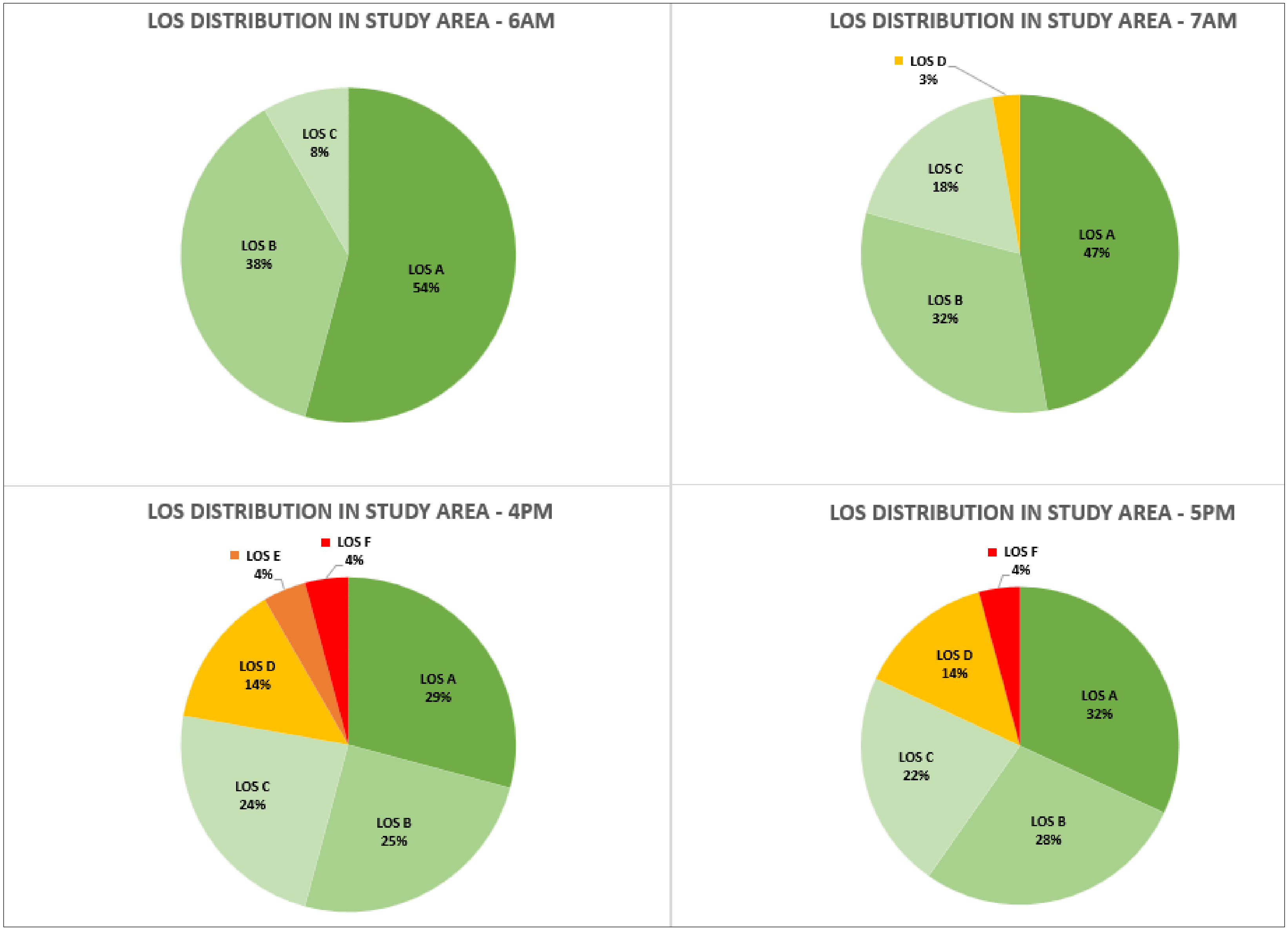


Figure 3.11-9 Freeway LOS (No Action Alternative in 2031)

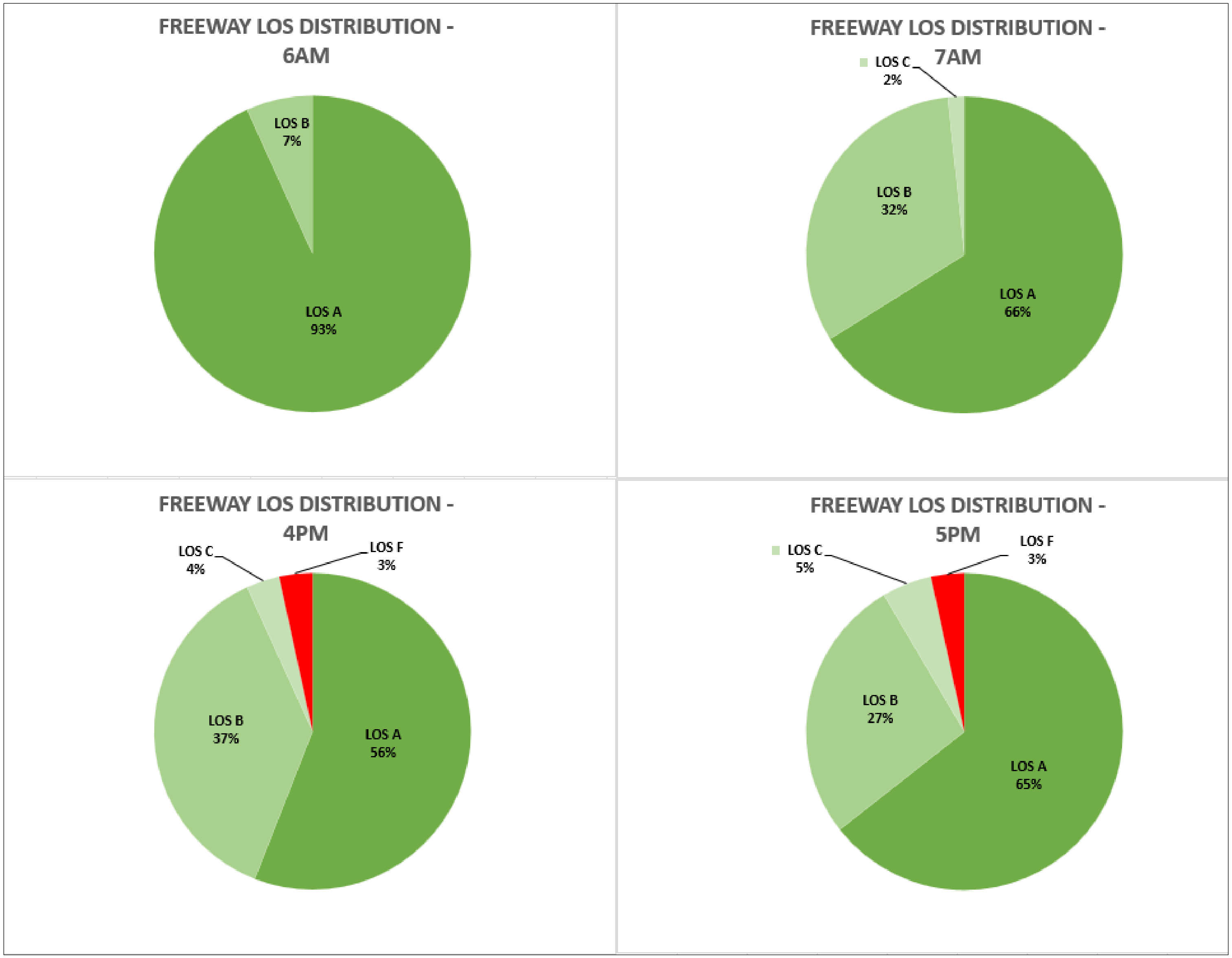


Figure 3.11-10 Intersection LOS (No Action Alternative in 2031)

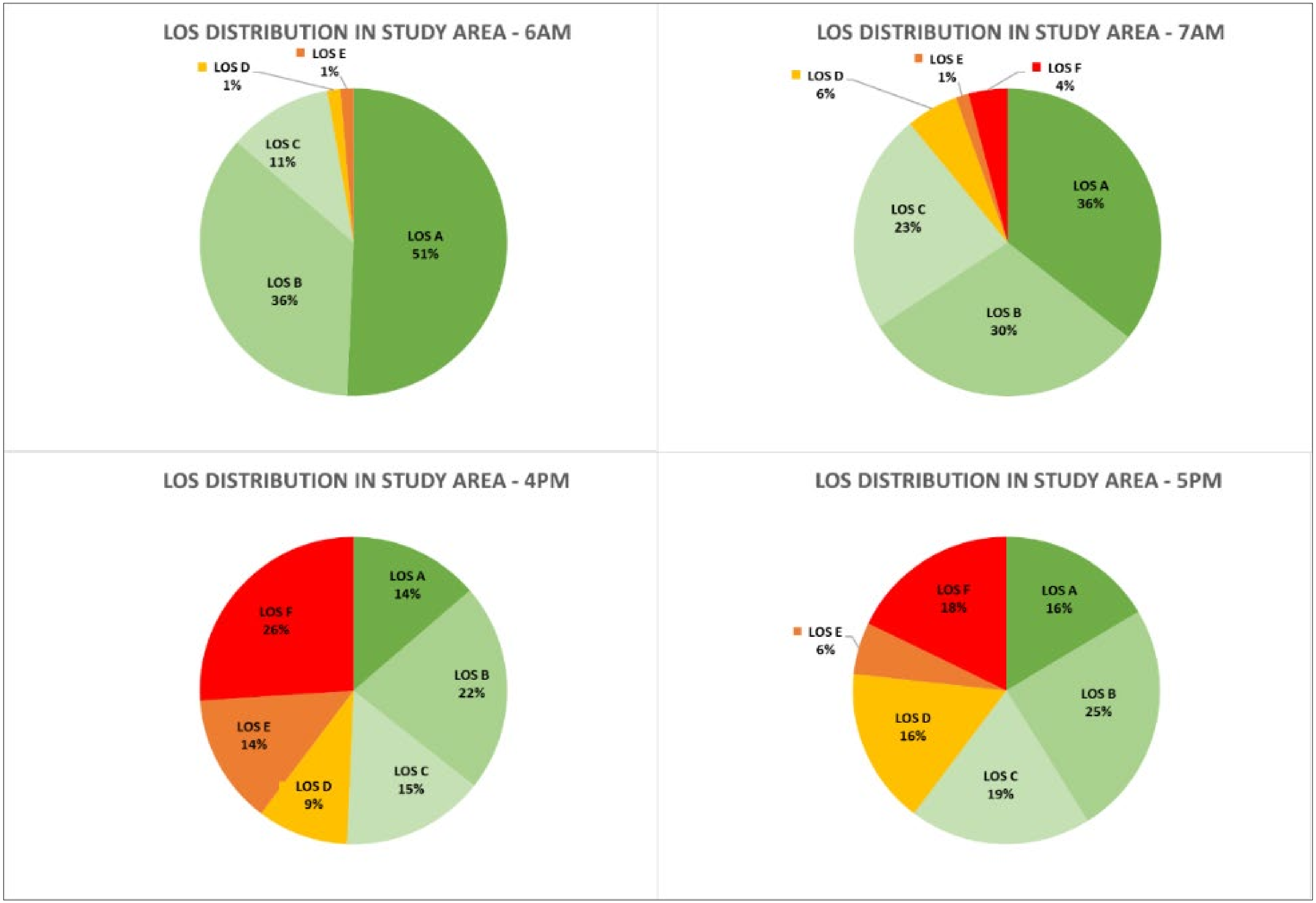


Figure 3.11-11 Freeway LOS (No Action Alternative in 2041)

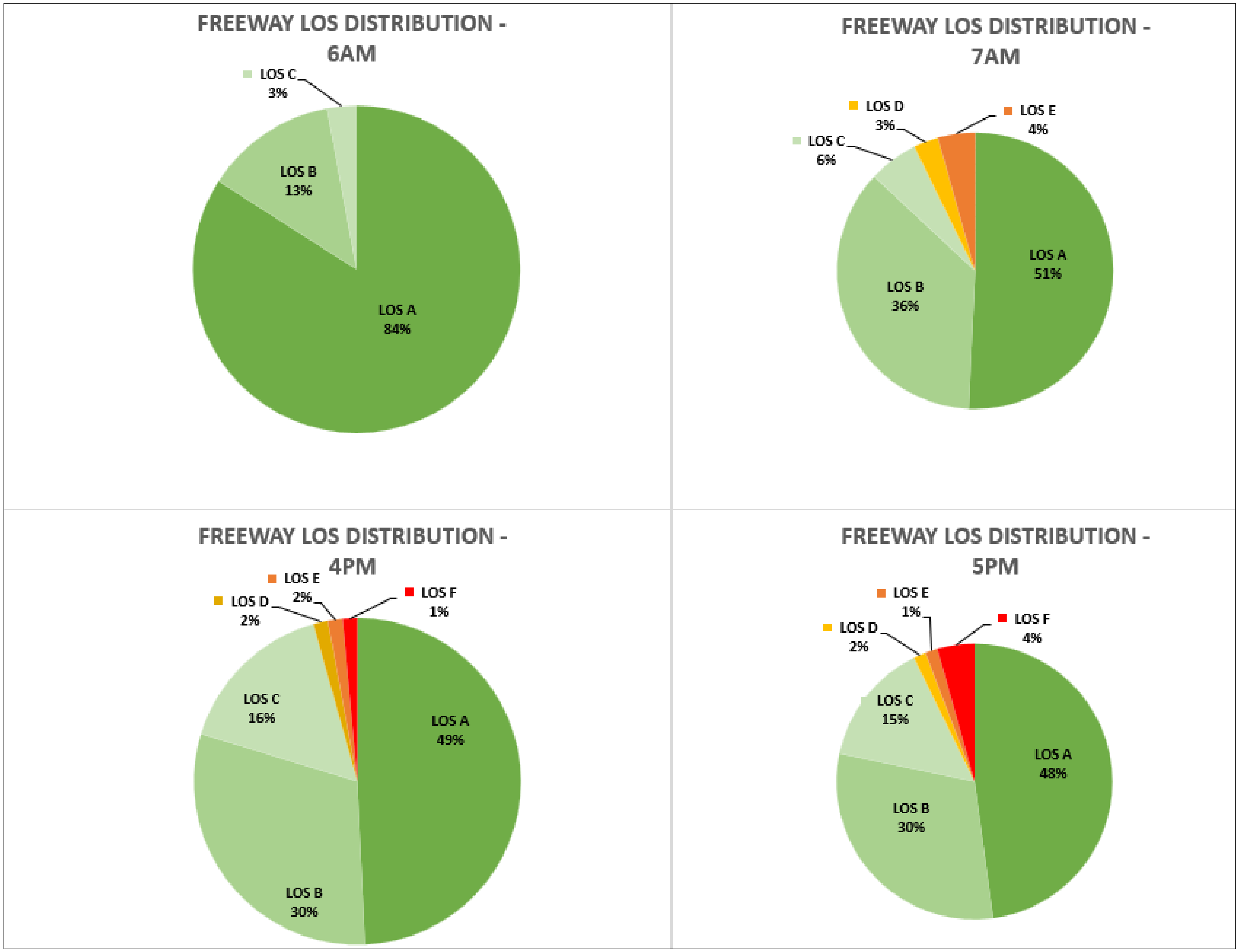
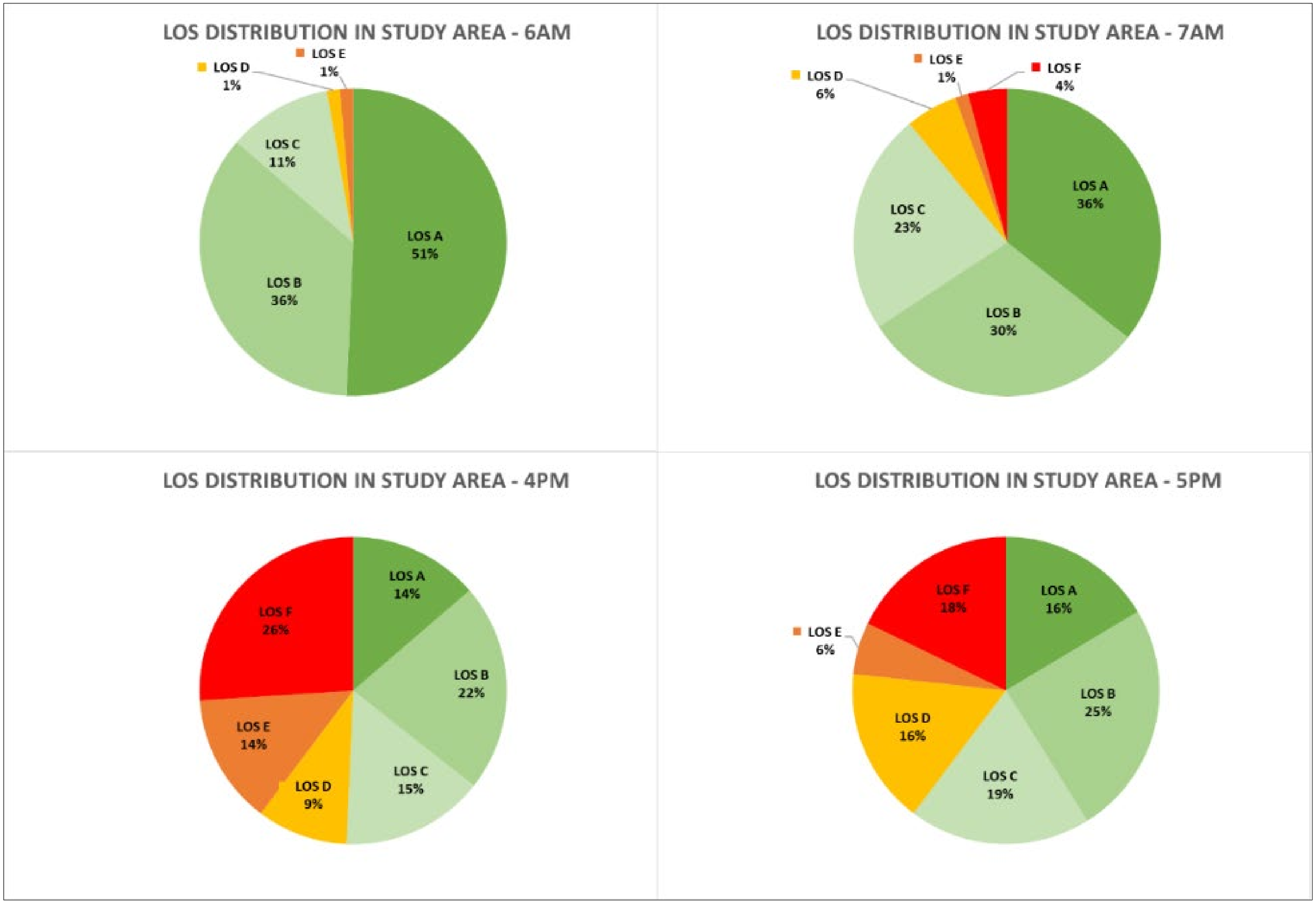


Figure 3.11-12 Intersection LOS (No Action Alternative in 2041)



3.11.3.3 Preferred Action Alternative Analysis

The Preferred Action Alternative includes construction of the Proposed Project and Connected Actions as described in Chapter 2. This alternative does not include recommended mitigations, which are discussed in Section 3.11.3.4. Figure 2.1-5 shows that the Micron Campus would have access driveways off Caughdenoy Road, NYS Route 31, and U.S. Route 11 at full build-out. A summary of the Preferred Action Alternative traffic analysis is provided, as well as a comparison of the Preferred Action Alternative and No Action Alternative to identify locations with significant impacts as defined in Section 3.11.2.1.

Preferred Action Alternative in 2027

Figure 3.11-13 and Figure 3.11-14 summarize the freeway and intersection LOS for the Preferred Action Alternative in 2027. All freeway segments operate at LOS B or better at the 6:00 a.m. peak hour. About two percent of the freeway segments operate at LOS E or worse at the 7:00 a.m. peak hour. For intersections, about one percent of the intersections operate at LOS E or worse at the 6:00 a.m. peak hour, and about six percent operate at LOS E or worse at the 7:00 a.m. peak hour.

All freeway segments operate at LOS D or better at the 4:00 p.m. peak hour, while about two percent of the segments operate at LOS E or worse at the 5:00 p.m. peak hour. For intersections, about 16 percent would operate at LOS E or worse at the 4:00 p.m. peak hour, while about 12 percent would operate at LOS E or worse at the 5:00 p.m. peak hour.

Table 3.11-8 and Table 3.11-9 show the list of significantly impacted locations in 2027 due to the Proposed Action. Along the freeways, the northbound I-81 Off-Ramp to NYS Route 31 begins to operate at LOS F during the 7:00 a.m. hour and LOS E during the 5:00 p.m. hour for the Preferred Action Alternative, compared to LOS B or better under the No Action Alternative. The number of intersections at LOS E or worse increases from zero to one percent during the 6:00 a.m. peak hour and zero to six percent during the 7:00 a.m. peak. Under the Preferred Action Alternative, the number of intersections at LOS E or worse increase from eight to 16 percent during the 4:00 p.m. peak hour, and four to 12 percent during the 5:00 p.m. peak hour.

Figure 3.11-13 Freeway LOS (Preferred Action Alternative in 2027)

Figure 3.11-14 Intersection LOS (Preferred Action Alternative in 2027)

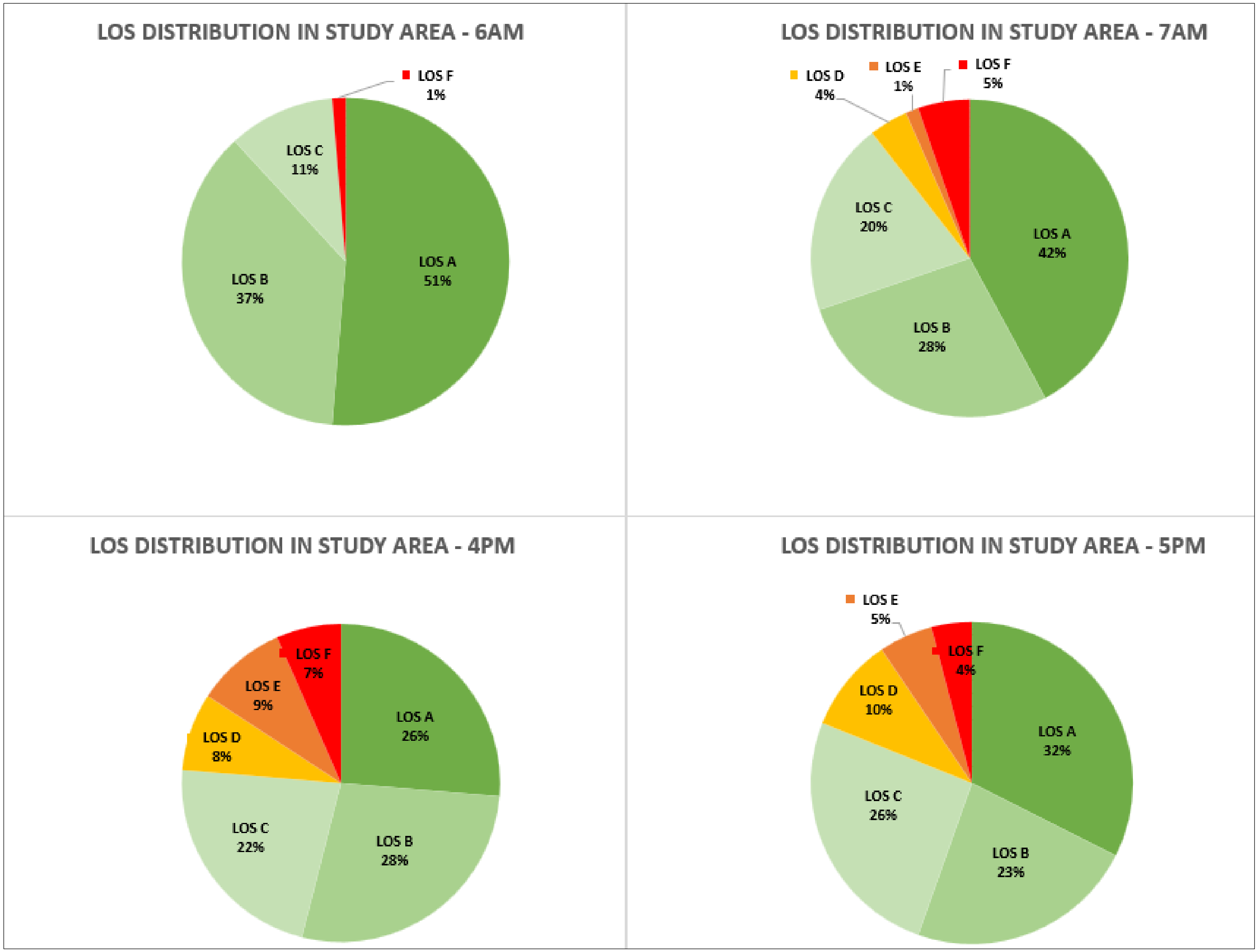


Table 3.11-8 Impacted Freeway Segments (No Action Alternative vs. Preferred Action Alternative in 2027)

Segment Direction	Segment Description	Segment Type	2027 No Action				2027 Preferred Action			
			Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
			6 AM		7 AM		6 AM		7 AM	
I-81 NB	I-81 NB Off-Ramp to NYS Route 31	Diverge	3.1	A	5.1	A	3.6	A	70.8	F
			4 PM		5 PM		4 PM		5 PM	
I-81 NB	I-81 NB Off-Ramp to NYS Route 31	Diverge	14.6	B	12.9	B	34.6	D	42.8	E

Table 3.11-9 Impacted Intersections (No Action Alternative vs. Preferred Action Alternative in 2027)

No.	Intersection Name	2027 No Action		2027 Preferred Action		2027 No Action		2027 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		6 AM		6 AM		7 AM		7 AM	
1	Bear Road & I-481 EB On/Off-Ramp	14	B	100	F	16	B	138	F
2	I-481 WB On/Off-Ramp & Circle Drive E	18	B	14	B	16	B	75	E
3	U.S. Route 11 & Crabtree Lane*	13	B	12	B	28	D	53	F
4	McNamara Drive/Driveway & NYS Route 31*	14	B	15	C	22	C	55	F
		4 PM		4 PM		5 PM		5 PM	
1	NYS Route 31 & NYS Route 481 NB	46	D	56	E	39	D	44	D
2	Morgan Road & NYS Route 31	43	D	59	E	35	C	58	E
3	U.S. Route 11 & NYS Route 31	48	D	57	E	41	D	82	F
4	McNamara Drive/Driveway & NYS Route 31*	>300	F	>300	F	216	F	>300	F
5	U.S. Route 11 & Crabtree Lane*	>300	F	>300	F	>300	F	>300	F
6	Doreen Avenue & NYS Route 31*	48	E	54	F	33	D	40	E

No.	Intersection Name	2027 No Action		2027 Preferred Action		2027 No Action		2027 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
7	NYS Route 31 & Button Road*	42	E	45	E	30	D	35	E
8	Morgan Road & Verplank Road*	32	D	42	E	27	D	36	E
9	NYS Route 31 & Oswego Road	50	D	58	E	43	D	50	D

* Unsignalized Intersections; ** New Intersections in the Preferred Action Alternative

Preferred Action Alternative in 2031

Figure 3.11-15 and Figure 3.11-16 summarize the LOS for the freeway and intersections for the Preferred Action Alternative in 2031. In the morning peak period, all studied freeway segments would operate at LOS B or better at the 6:00 a.m. peak hour, and about 97 percent would operate at LOS D or better at the 7:00 a.m. peak hour. For intersections, 99 percent would operate at LOS D or better during the 6:00 a.m. peak hour. During the 7:00 a.m. peak hour, 79 percent of the studied intersections would operate at LOS D or better, with five percent operating at LOS E and 16 percent operating at LOS F.

In the afternoon peak period, 97 percent of freeway segments would operate at LOS C or better at the 4:00 p.m. peak hour, with the remaining three percent operating at LOS E. During the 5:00 p.m. peak hour, 93 percent of freeways operate at LOS C or better with four percent operating at LOS E and three percent operating at LOS F. For intersections, 70 percent would operate at LOS D or better during the 4:00 p.m. peak hour, and 65 percent would operate at LOS D or better during the 5:00 p.m. peak hour. Table 3.11-10 shows the four freeway segments that would be significantly impacted in 2031 by the Preferred Action Alternative compared to the No Action Alternative. Table 3.11-11 shows the 13 intersections impacted by the Preferred Action Alternative in the a.m. peak period and 21 in the p.m. peak period in 2031, compared to the No Action Alternative.

Figure 3.11-15 Freeway LOS (Preferred Action Alternative in 2031)

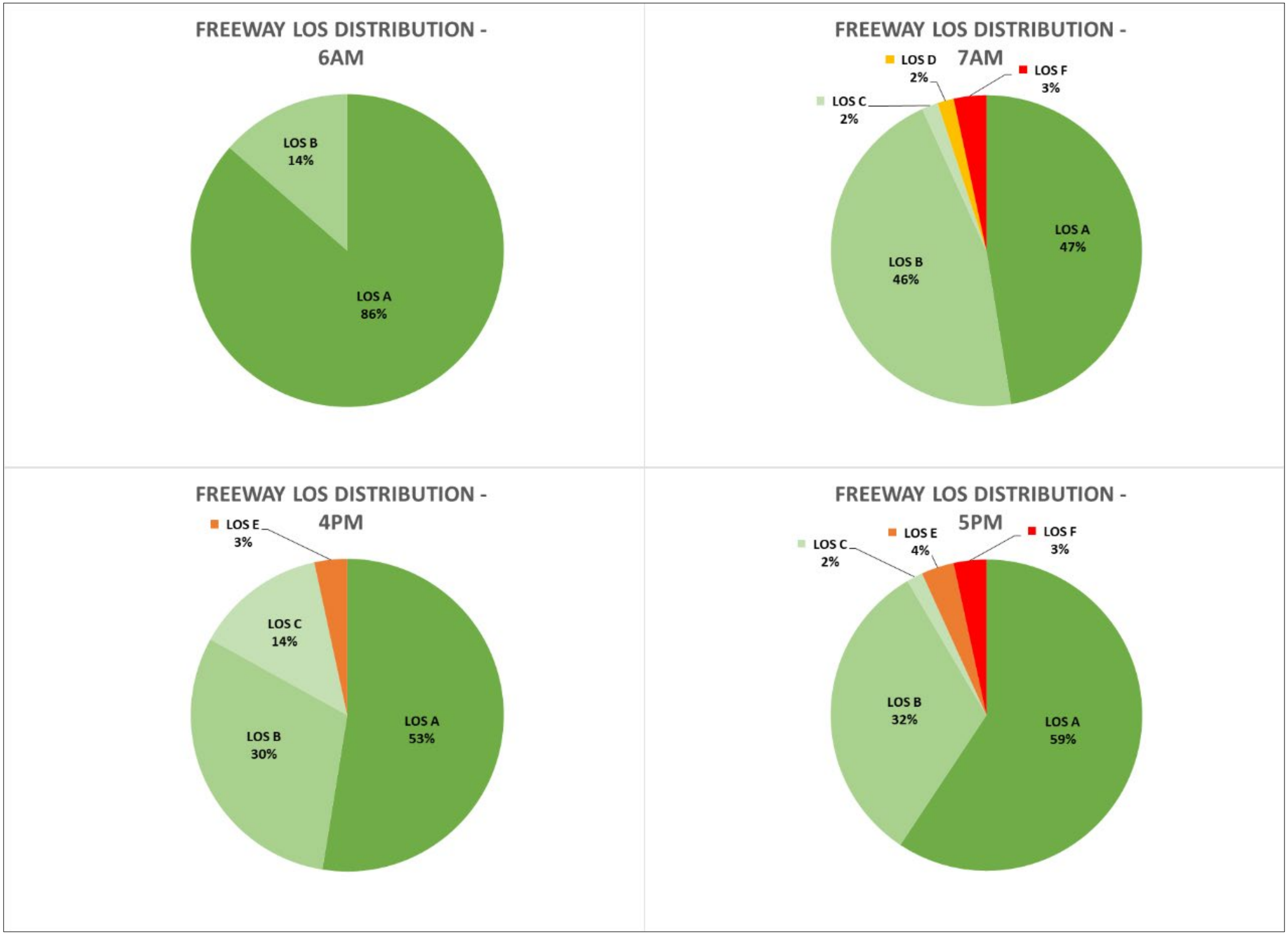


Figure 3.11-16 Intersection LOS (Preferred Action Alternative in 2031

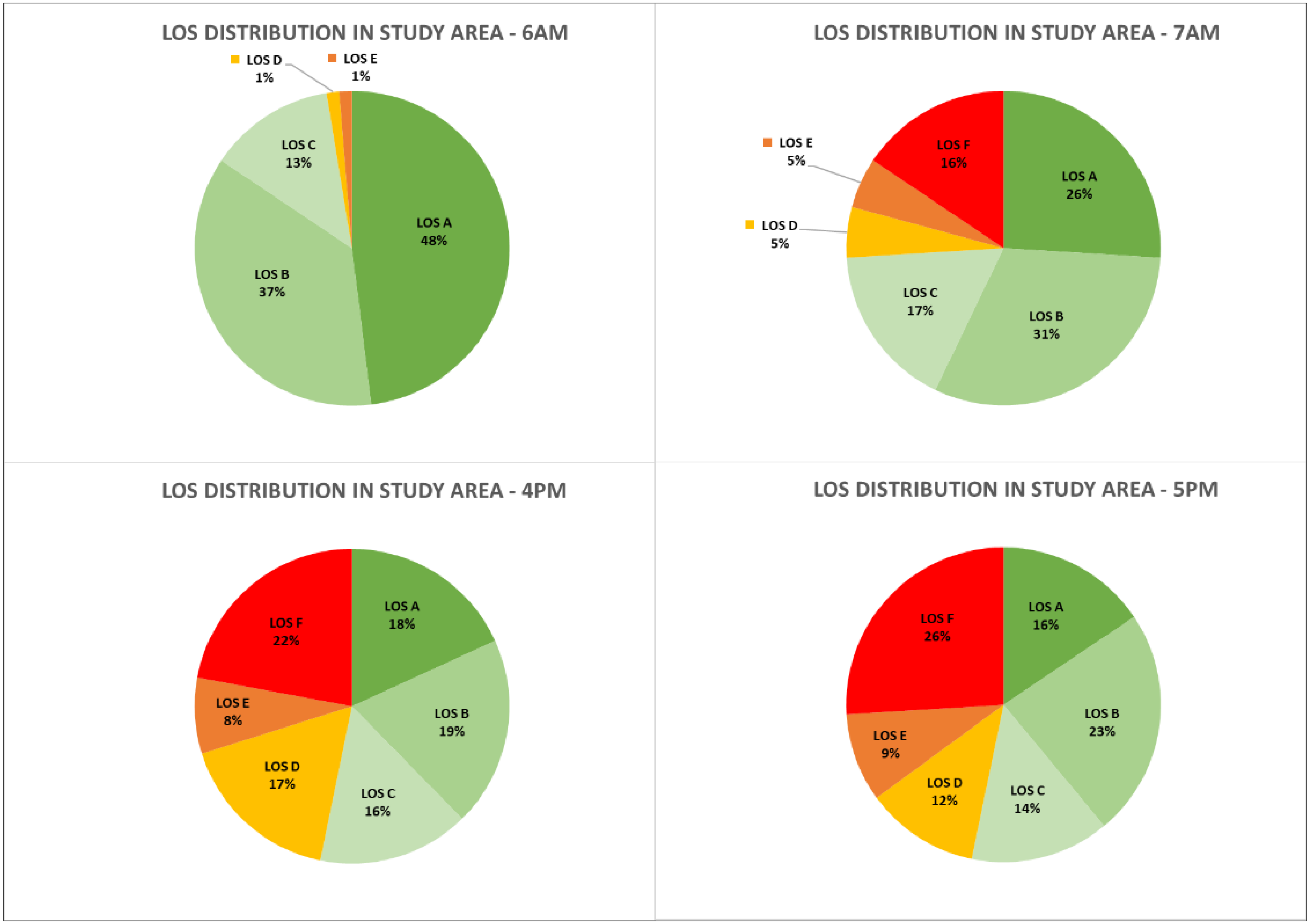


Table 3.11-10 Impacted Freeway Segments (No Action Alternative vs. Preferred Action Alternative in 2031)

Segment Direction	Segment Description	Segment Type	2031 No Action				2031 Preferred Action			
			Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
			6 AM		7 AM		6 AM		7 AM	
I-81 NB	I-81 NB Off-Ramp to NYS Route 31	Diverge	3.4	A	5.0	A	3.8	A	95.2	F
NYS Route 481 WB	NYS Route 481 WB Off-Ramp to Caughdenoy Road	Diverge	3.6	A	5.7	A	3.9	A	72.7	F
			4 PM		5 PM		4 PM		5 PM	
I-81 NB	I-81 NB Between -481 & NYS Route 31	Basic	15.2	B	12.5	B	19.4	C	37.0	E
	I-81 NB Off-Ramp to NYS Route 31	Diverge	15.7	B	12.9	B	38.5	E	75.4	F

Table 3.11-11 Impacted Intersections (No Action Alternative vs. Preferred Action Alternative in 2031)

No.	Intersection Name	2031 No Action		2031 Preferred Action		2031 No Action		2031 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		6 AM		6 AM		7 AM		7 AM	
1	NYS Route 481 SB & NYS Route 31	33	C	34	C	44	D	127	F
2	Parking Lot/GNM West & NYS Route 31	40	D	54	D	27	C	120	F
3	Parking Lot/GNM East & NYS Route 31	13	B	22	C	34	C	64	E
4	Morgan Road & NYS Route 31	61	E	56	E	148	F	209	F
5	Henry Clay Boulevard & NYS Route 31	12	B	14	B	20	C	88	F
6	Grange Road W & NYS Route 31	9	A	10	A	10	A	150	F

No.	Intersection Name	2031 No Action		2031 Preferred Action		2031 No Action		2031 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
7	Van Hoesen Road & NYS Route 31*	16	C	16	C	31	D	287	F
8	Grange Road E & NYS Route 31*	11	B	12	B	14	B	36	E
9	Caughdenoy Road & NYS Route 31	11	B	23	C	16	B	84	F
10	McNamara Drive/Driveway & NYS Route 31*	22	C	22	C	151	F	>300	F
11	NYS Route 31 & Weller Canning Road*	13	B	13	B	18	C	46	E
12	Morgan Road & Verplank Road*	22	C	22	C	222	F	>300	F
13	Oswego Road & NYS Route 31	27	C	29	C	80	E	92	F
		4 PM		**4 PM**		**5 PM**		**5 PM**	
1	NYS Route 481 SB & NYS Route 31	164	F	164	F	182	F	213	F
2	NYS Route 481 NB & NYS Route 31	197	F	204	F	155	F	196	F
3	Morgan Road & NYS Route 31	273	F	293	F	187	F	293	F
4	Henry Clay Boulevard & NYS Route 31	215	F	81	F	90	F	119	F
5	Grange Road W & NYS Route 31	153	F	66	E	26	C	64	E
6	Van Hoesen Road & NYS Route 31*	78	F	63	F	53	F	74	F
7	Caughdenoy Road & NYS Route 31	64	E	49	D	41	D	103	F
8	Barcaldine Drive/Legionnaire Drive & NYS Route 31*	21	C	31	D	17	C	110	F
9	Lawton Road/Legionnaire Drive & NYS Route 31	16	B	25	C	12	B	99	F
10	U.S. Route 11 & NYS Route 31	58	E	66	E	45	D	193	F
11	I-81 SB On-Ramp/I-81 SB Off-Ramp & NYS Route 31	26	C	26	C	24	C	75	E

No.	Intersection Name	2031 No Action		2031 Preferred Action		2031 No Action		2031 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
12	Parking Lot/Lakeshore Road Spur & NYS Route 31	60	E	83	F	40	D	42	D
13	South Bay Road & NYS Route 31	57	E	59	E	47	D	61	E
14	Caughdenoy Road & Verplank Road*	20	C	23	C	14	B	214	F
15	Doreen Avenue & NYS Route 31*	61	F	68	F	38	E	49	E
16	NYS Route 31 & Button Road*	51	F	25	D	34	D	45	E
17	NYS Route 31 & Weller Canning Road*	185	F	140	F	73	F	282	F
18	Morgan Road & GNM Driveway 2*	170	F	119	F	42	E	69	F
29	Soule Road/NYS Route 481	71	E	63	E	60	E	81	F
20	Carling Road South/Carling Road North & NYS Route 31	69	E	57	E	52	D	63	E
21	Oswego Road & NYS Route 31	89	F	72	E	87	F	108	F

*Unsignalized Intersection

Preferred Action Alternative in 2041

Figure 3.11-17 and Figure 3.11-18 summarize the freeway and intersection LOS for the Preferred Action Alternative in 2041. All freeway segments would operate at LOS D or better during the 6:00 a.m. peak hour. About 81 percent would operate at LOS D or better in the 7:00 a.m. peak hour, with seven percent operating at LOS E, and 12 percent operating at LOS F. All intersections during the a.m. peak hours would operate at LOS D or better during the 6:00 a.m. peak hour, and 76 percent would operate at LOS D or better during the 7:00 a.m. peak hour.

In the afternoon peak period, 97 percent of the freeway segments would operate at LOS D or better during the 4:00 p.m. peak hour, and 89 percent operate at LOS D or better during the 5:00 p.m. peak hour. For intersections during the p.m. peak hours, 64 percent would operate a LOS D or better during the 4:00 p.m. peak hour, and 51 percent would operate at LOS D or better at the 5:00 p.m. peak hour.

Table 3.11-12 shows the 10 freeway segments in the 7:00 a.m. peak hour significantly impacted in 2041 by the Preferred Action Alternative compared to the No Action Alternative. Table 3.11-13 shows the 13 intersections significantly impacted in 2041 by the Preferred Action Alternative compared to the No Action Alternative in the morning peak period. Table 3.11-14 shows the 28 intersections significantly impacted in 2041 by the Preferred Action Alternative compared to the No Action Alternative in the afternoon peak period.

Figure 3.11-17 Freeway LOS (Preferred Action Alternative in 2041)

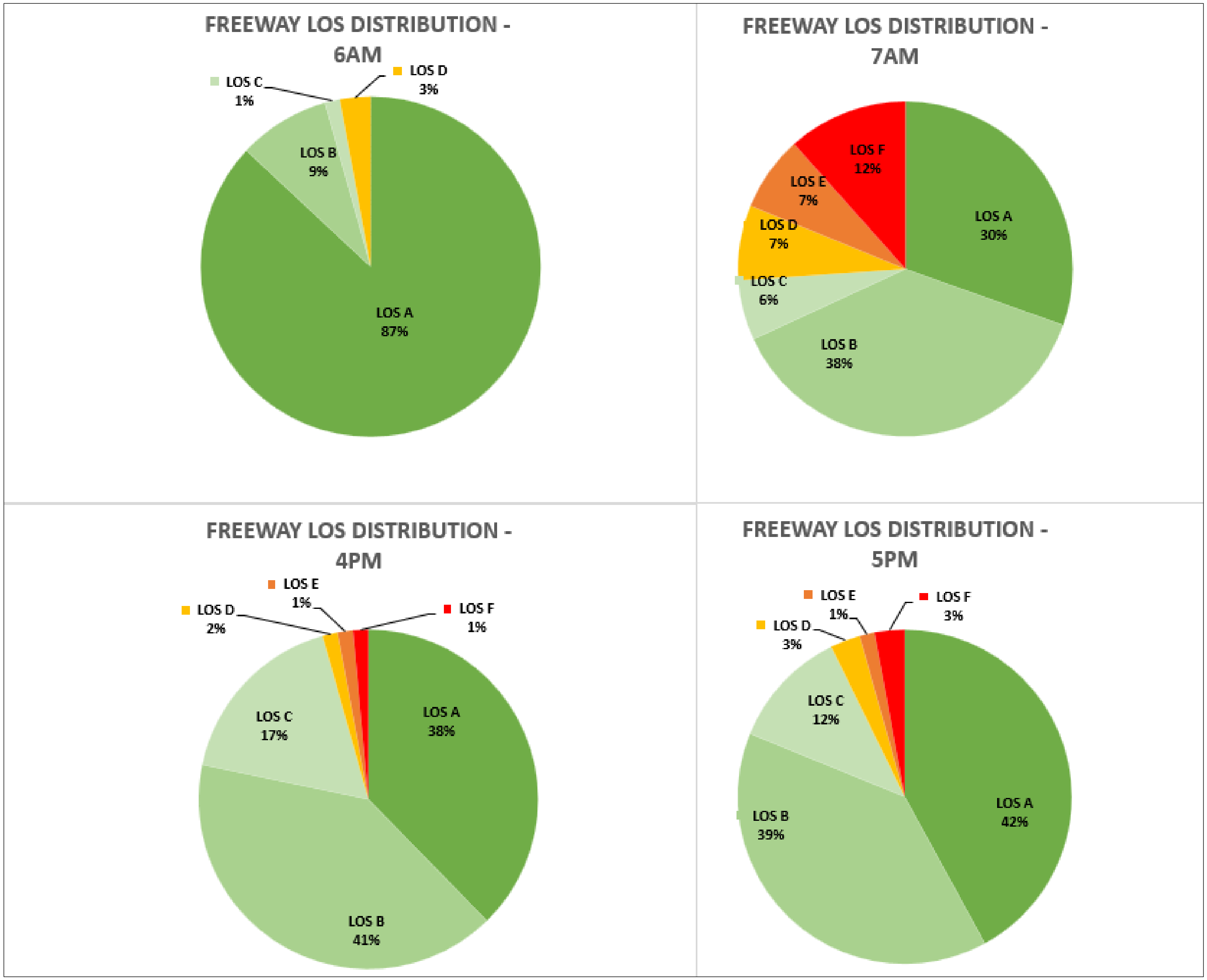


Figure 3.11-18 Intersection LOS (Preferred Action Alternative in 2041)

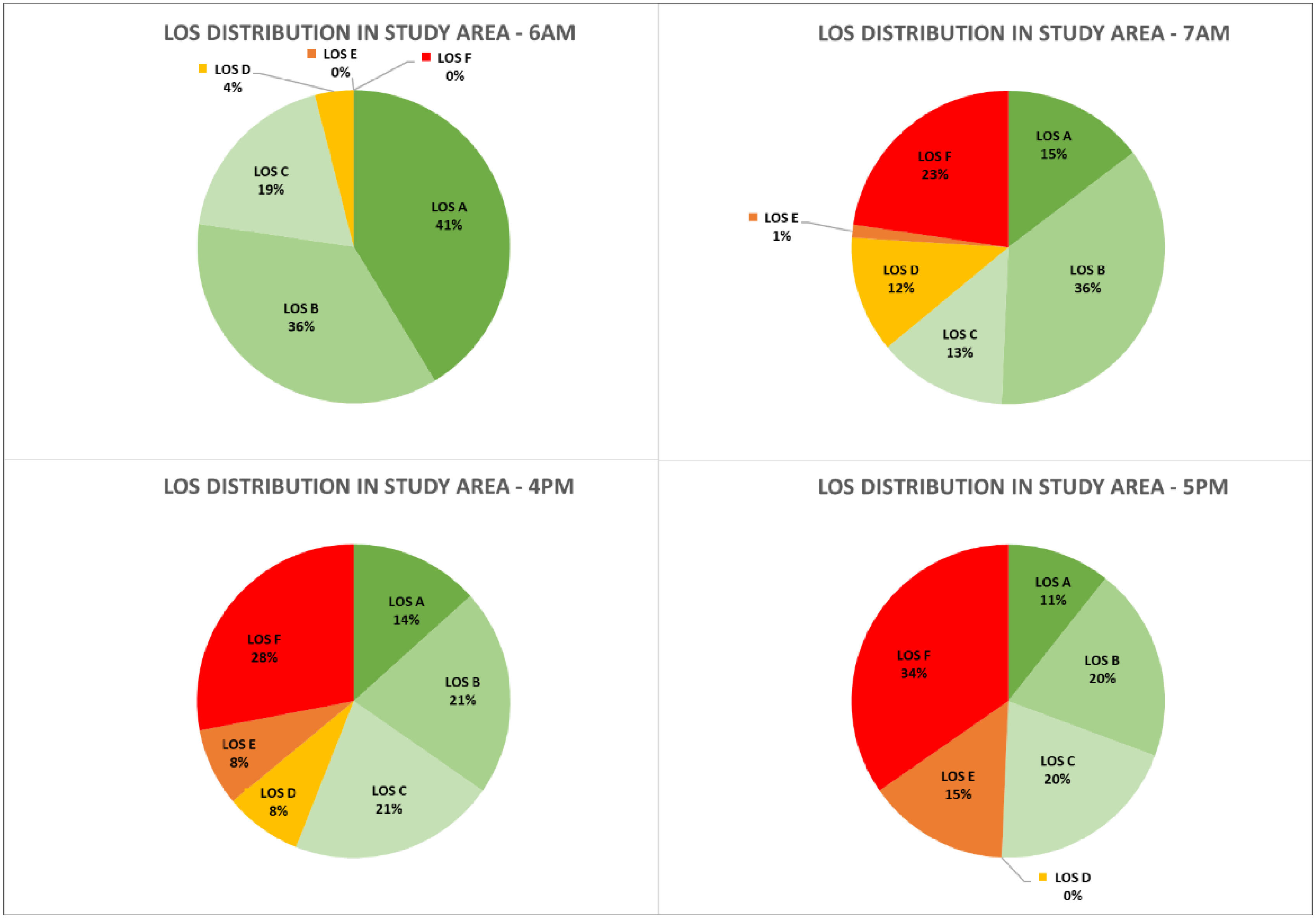


Table 3.11-12 Impacted Freeway Segments (No Action Alternative vs. Preferred Action Alternative in 2041)

Segment Direction	Segment Description	Segment Type	2041 No Action				2041 Preferred Action			
			Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
			6 AM		7 AM		6 AM		7 AM	
I-81 NB	I-81 NB Off-Ramp to I-481	Diverge	4.8	A	7.6	A	4.7	A	36.0	E
	I-81 NB Between Off/On-Ramps to/from I-481	Basic	5.2	A	8.8	A	5.2	A	56.3	F
	I-81 NB Between Off/On-Ramps to/from I-481	Weave	4.2	A	7.1	A	4.6	A	57.4	F
	I-81 NB after Off-Ramp to I-481	Basic	5.1	A	8.7	A	4.7	A	106.7	F
	I-81 NB On-Ramp from I-481	Merge	3.2	A	5.5	A	2.9	A	118.2	F
	I-81 NB Between I-481 & NYS Route 31	Basic	4.3	A	7.3	A	3.9	A	152.7	F
	I-81 NB Off-Ramp to NYS Route 31	Diverge	3.4	A	6.1	A	3.2	A	164.1	F
I-81 SB	I-81 SB Off-Ramp to NYS Route 31	Diverge	6.5	A	11.6	B	5.7	A	46.7	F
NYS Route 481 WB	NYS Route 481 WB Off-Ramp to Caughdenoy Road	Diverge	3.8	A	6.8	A	5.1	A	49.9	F
	NYS Route 481 WB Off-Ramp to NYS Route 31	Diverge	2.5	A	4.2	A	3.2	A	43.9	E

Table 3.11-13 Impacted Intersections (No Action Alternative vs. Preferred Action Alternative in 2041 AM peak)

No.	Intersection Name	2041 No Action		2041 Preferred Action		2041 No Action		2041 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		6 AM		6 AM		7 AM		7 AM	
1	Grange Road W & NYS Route 31*	23	C	25	D	100	F	>300	F
2	Van Hoesen Road & NYS Route 31*	20	C	21	C	42	E	>300	F
3	Grange Road E & NYS Route 31*	12	B	13	B	16	C	>300	F
4	Stearns Road & NYS Route 31*	18	C	21	C	66	F	>300	F
5	NYS Route 31 & Burnet Road*	15	B	19	B	23	C	>300	F
6	Barcaldine Drive/Legionnaire Drive & NYS Route 31*	12	B	11	B	18	C	236	F
7	Lawton Road/Legionnaire Drive & NYS Route 31	8	A	8	A	13	B	246	F
8	U.S. Route 11 & NYS Route 31	27	C	43	D	40	D	94	F
9	NYS Route 31 & I-81 SB Ramp	18	B	20	C	51	D	114	F
10	NYS Route 31 & Pardee Road/I-81 NB Ramp	24	C	27	C	40	D	>300	F
11	Caughdenoy Road & Verplank Road*	10	A	10	A	11	B	41	E
12	NYS Route 481 NB Off-Ramp & Maple Road & Caughdenoy Road	10	A	10	B	11	B	>300	F
13	NYS Route 31 & Weller Canning Road*	15	C	16	C	29	D	>300	F

* Unsignalized Intersections
** New Intersections in the Preferred Action Alternative

Table 3.11-14 Impacted Intersections (No Action Alternative vs. Preferred Action Alternative in 2041 PM peak)

No.	Intersection name	2041 No Action		2041 Preferred Action		2041 No Action		2041 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		4 PM		4 PM		5 PM		5 PM	
1	NYS Route 31 & NYS Route 481 SB	68	E	70	E	42	D	64	E
2	NYS Route 31 & NYS Route 481 NB	51	D	54	D	27	C	57	E
3	NYS Route 31 & GNM West	142	F	147	F	83	F	165	F
4	Parking Lot/GNM East & NYS Route 31	51	D	83	F	30	C	109	F
5	Morgan Road & NYS Route 31	71	E	82	F	59	E	153	F
6	Henry Clay Boulevard & NYS Route 31	27	C	64	E	27	C	122	F
7	NYS Route 31 & Van Hoesen Road	108	F	127	F	83	F	>300	F
8	NYS Route 31 & Grange Road East	61	F	71	F	30	D	41	E
9	NYS Route 31 & Caughdenoy Road	22	C	28	C	12	B	177	F
10	Stearns Road & NYS Route 31*	63	F	116	F	70	F	>300	F
11	NYS Route 31 & Burnet Road*	39	E	145	F	29	D	291	F
12	Barcaldine Drive/Legionnaire Drive & NYS Route 31*	16	C	20	C	15	B	>300	F
13	Lawton Road/Legionnaire Drive & NYS Route 31	34	C	46	D	28	C	227	F
14	U.S. Route 11 & NYS Route 31	90	F	155	F	60	E	>300	F
15	NYS Route 31 & I-81 SB Ramp	37	D	71	E	24	C	166	F
16	NYS Route 31 & Pardee Road/I-81 NB Ramp	101	F	118	F	89	F	82	F

No.	Intersection name	2041 No Action		2041 Preferred Action		2041 No Action		2041 Preferred Action	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		4 PM		4 PM		5 PM		5 PM	
17	Parking Lot/Lakeshore Spur & NYS Route 31	48	D	64	E	32	C	93	F
18	South Bay Road & NYS Route 31	32	C	38	D	24	C	61	E
19	Caughdenoy Road & Verplank Road*	17	C	19	C	14	B	213	F
20	Caughdenoy Road & Oak Orchard Road*	14	B	15	C	13	B	36	E
21	U.S. Route 11 & Bear Road	50	D	49	D	46	D	62	E
22	NYS Route 31 & Cicero North Syracuse High School East	138	F	78	F	35	E	42	E
23	NYS Route 31 & Button Road*	51	F	85	F	29	D	345	F
24	NYS Route 31 & Weller Canning Road*	229	F	335	F	130	F	>300	F
25	Morgan Road & Verplank Road	24	C	26	C	19	B	57	E
26	Morgan Road & GNM Driveway 2*	33	D	34	D	23	C	36	E
27	U.S. Route 11 & Chick-fil-A	54	D	72	E	9	A	18	B
28	NYS Route 31 & Carling Road	58	E	83	F	52	D	82	F

*Unsignalized Intersection
** New Intersections in the Preferred Action Alternative

3.11.3.4 Analysis of Recommended Mitigations

Recommended mitigations were developed to identify approaches to minimize forecasted traffic impacts, including congestion, from the construction and operation of the Proposed Project under the Preferred Action Alternative. Full technical details are available in Appendix M.

The major recommended mitigation measures for the Preferred Action Alternative are as follows:

- NYS Route 31 – Widening from one lane to two lanes in each direction between U.S. Route 11 and Morgan Road.
- NYS Route 31/I-81 Interchange – Re-configuring the existing interchange to a Diverging Diamond Interchange (DDI) with three lanes in each direction on NYS Route 31.
- Sneller Road/I-81 Interchange – Constructing a new interchange connecting I-81 with Sneller Road and U.S. Route 11.
- U.S. Route 11– Widening from one lane to two lanes in each direction between NYS Route 31 and Sneller Road.
- New Access Road – Constructing a new four-lane access road (New Access Road) between NYS Route 481 and Caughdenoy Road, north of NYS Route 31, paralleling the CSX railroad.
- New Access Road/NYS Route 481 Interchange – Constructing a new interchange between the New Access Road and NYS Route 481, located just east of the CSX railroad mainline, with a new roundabout at the New Access Road and Maple Road intersection.
- Caughdenoy Road/NYS Route 481 Ramp – Constructing a new access ramp providing additional southbound to westbound movement from Caughdenoy Road to NYS Route 481 with a new roundabout at the intersection of Caughdenoy Road and Maple Road.

In addition to the above, the analysis included planned mitigations by others west of Morgan Road on NYS Route 31 as listed below.

- NYS Route 31 – Widening to three lanes in each direction between Morgan Road and Oswego Road, additional access to GNM with new driveways, and turn lanes.
- NYS Route 31/NYS Route 481 Interchange – Re-configuring the existing interchange to a DDI with four lanes in each direction on NYS Route 31.

If implemented, these traffic improvements are projected to mitigate the significant adverse traffic impacts that would result from the Proposed Project. Because these recommended traffic improvements are within the jurisdiction of federal, state, and local transportation agencies, the detailed design and implementation of the recommended mitigation measures are subject to the discretion of these agencies and thus would be subject to further review and approval by NYSDOT, FHWA, and other jurisdictional agencies, including additional environmental review.

Preferred Action Alternative with Recommended Mitigations in 2027

As this analysis year is in the near future, capacity improvements on the scale of the recommended mitigations above cannot be designed and constructed in time. Thus, the temporary significant adverse impacts identified in 2027 are deemed unmitigated, and 2027 was not analyzed with the recommended mitigation measures.

Preferred Action Alternative with Recommended Mitigations in 2031

Figure 3.11-19 and Figure 3.11-20 summarize the effects of recommended mitigations to freeway and intersection LOS for the Preferred Action Alternative in 2031. All freeway segments would operate at LOS C or better in the morning and afternoon peak periods. Additionally, all intersections would operate at LOS D or better during the a.m. peak hours and 5:00 p.m. peak hour. About 94 percent of the intersections would operate at LOS D or better at the 4:00 p.m. peak hour.

Table 3.11-15 show the freeway segments significantly impacted in 2031 by the Preferred Action Alternative and the effects of recommended mitigations. The recommended mitigations would improve traffic operations at all impacted segments, which are forecasted to operate at LOS B or better.

Table 3.11-16 show the intersections significantly impacted in 2031 by the Preferred Action Alternative and the effects of recommended mitigations. The recommended mitigations would improve traffic operations with all intersections forecasted to operate at LOS D or better, except at the following locations, which would operate at LOS E:

- NYS Route 31 with NYS Route 481 SB ramp
- NYS Route 31 with Morgan Road
- NYS Route 31 with Carling Road

Although these intersections operate at LOS E, the recommended mitigations would improve the expected delay with less than a five second increase in delay when compared to the No Action Alternative. Therefore, the 2031 Preferred Action Alternative with Recommended Mitigation would mitigate the anticipated significant adverse impacts from the Proposed Project.

Figure 3.11-19 Freeway LOS (Preferred Action Alternative with Recommended Mitigations in 2031)

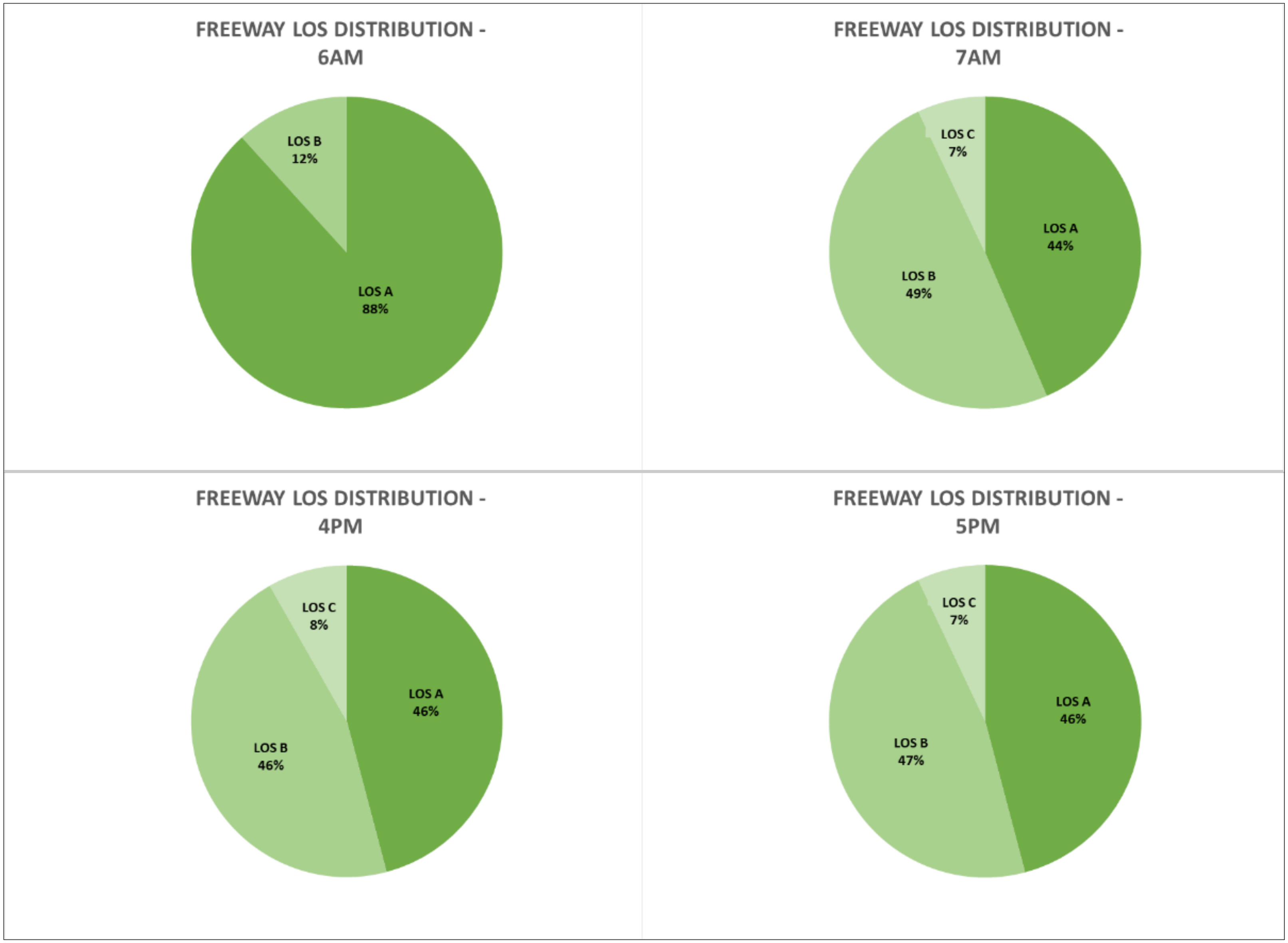


Figure 3.11-20 Intersection LOS (Preferred Action Alternative with Recommended Mitigations in 2031)

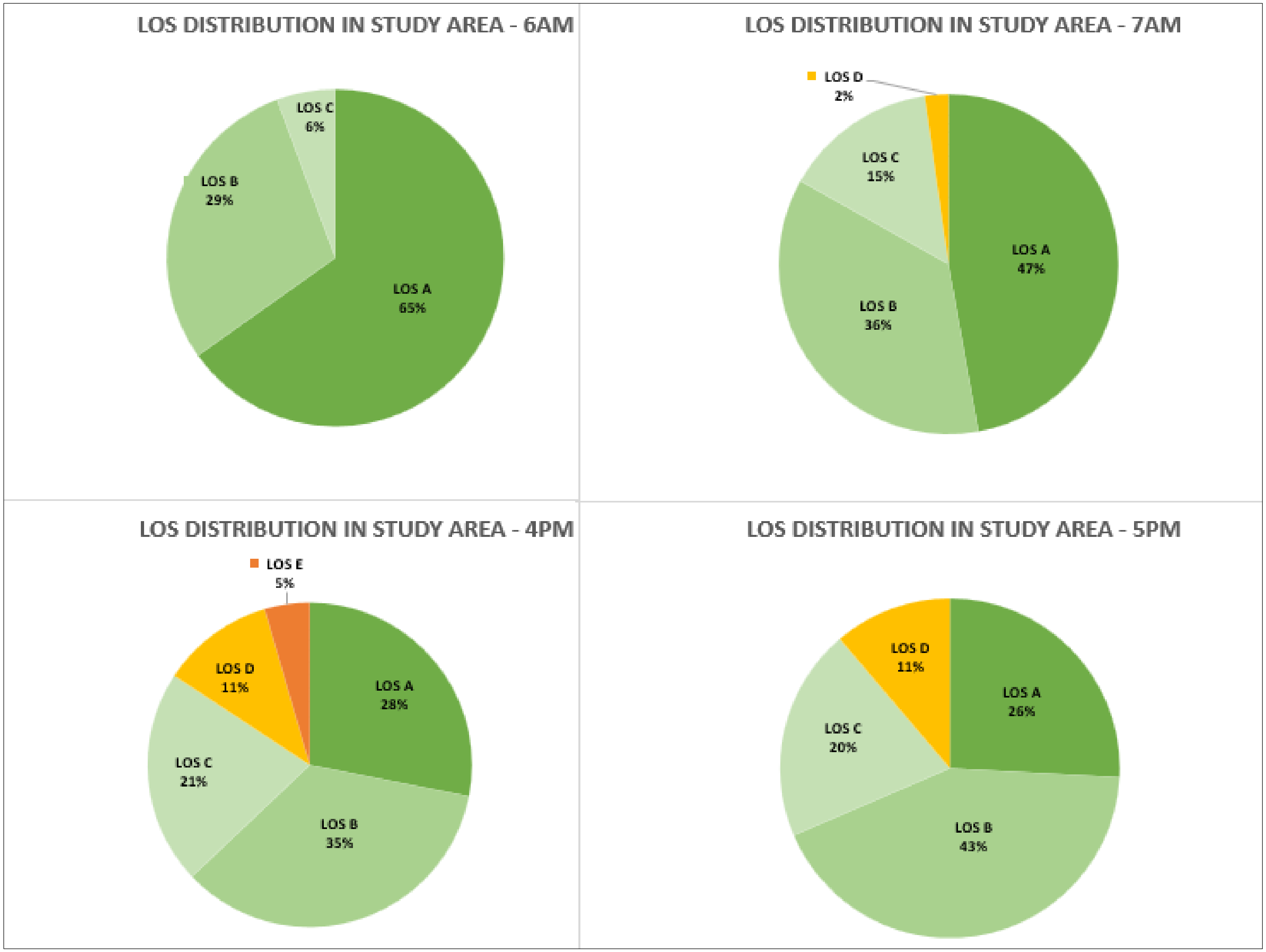


Table 3.11-15 Impacted Freeway Segments Comparison - 2031

Segment Direction	Segment Description	Segment Type	2031 No Action				2031 Preferred Action				2031 Preferred Action with Recommended Mitigations			
			Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
			6 AM		7 AM		6 AM		7 AM		6 AM		7 AM	
I-81 NB	I-81 NB Off-Ramp to NYS Route 31	Diverge	3.4	A	5	A	3.8	A	95.2	F	3.1	A	5.8	A
NYS 481 WB	NYS Route 481 WB Off-Ramp to Caughdenoy Road	Diverge	3.6	A	5.7	A	3.9	A	72.7	F	3.5	A	9.1	A
			4 PM		5 PM		4 PM		5 PM		4 PM		5 PM	
I-81 NB	I-81 NB Between I-481 & NYS Route 31	Basic	15.2	B	12.5	B	19.4	C	37.0	E	16.9	B	15.4	B
I-81 NB	I-81 NB Off-Ramp to NYS Route 31	Diverge	15.7	B	12.9	B	38.5	E	75.4	F	10.0	A	9.2	A

Table 3.11-16 Impacted Intersections Comparison – 2031

No.	Intersection Name	2031 No Action				2031 Preferred Action				2031 Preferred Action with Recommended Mitigations			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		6 AM		7 AM		6 AM		7 AM		6 AM		7 AM	
1	NYS Route 481 SB off ramp/Soule Road & NYS Route 31	33	C	44	D	34	C	127	F	8	A	12	B
2	Parking Lot/GNM West & NYS Route 31	40	D	27	C	54	D	120	F	13	B	24	C

No.	Intersection Name	2031 No Action				2031 Preferred Action				2031 Preferred Action with Recommended Mitigations			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
3	Parking Lot/GNM East & NYS Route 31	13	B	34	C	22	C	64	E	17	B	25	C
4	Morgan Road & NYS Route 31	61	E	148	F	56	E	209	F	24	C	33	C
5	Henry Clay Boulevard & NYS Route 31	12	B	20	C	14	B	88	F	19	B	30	C
6	Grange Road W & NYS Route 31	9	A	10	A	10	A	150	F	2	A	2	A
7	Van Hoesen Road & NYS Route 31*	16	C	31	D	16	C	287	F	4	A	2	A
8	Grange Road E & NYS Route 31*	11	B	14	B	12	B	36	E	10	B	14	B
9	Caughdenoy Road & NYS Route 31	11	B	16	B	23	C	84	F	4	A	6	A
10	McNamara Drive/Driveway & NYS Route 31*	22	C	151	F	22	C	>300	F	13	B	14	B
11	NYS Route 31 & Weller Canning Road*	13	B	18	C	13	B	46	E	10	B	13	B
12	Morgan Road & Verplank Road*	22	C	222	F	22	C	>300	F	8	A	11	B
13	Oswego Road & NYS Route 31	27	C	80	E	29	C	92	F	21	C	39	D
		4 PM		5 PM		4 PM		5 PM		4 PM		5 PM	
1	NYS Route 481 SB off ramp/Soule Road & NYS Route 31	164	F	182	F	164	F	213	F	77	E	47	D
2	NYS Route 481 NB on/off ramp & NYS Route 31	197	F	155	F	204	F	196	F	52	D	32	C
3	Morgan Road & NYS Route 31	273	F	187	F	293	F	293	F	56	E	46	D
4	Henry Clay Boulevard & NYS Route 31	215	F	90	F	81	F	119	F	33	C	26	C
5	Grange Road W & NYS Route 31	153	F	26	C	66	E	64	E	11	B	9	A

No.	Intersection Name	2031 No Action				2031 Preferred Action				2031 Preferred Action with Recommended Mitigations			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
6	Van Hoesen Road & NYS Route 31*	78	F	53	F	63	F	74	F	3	A	3	A
7	Caughdenoy Road & NYS Route 31	64	E	41	D	49	D	103	F	18	B	8	A
8	Barcaldine Drive/Legionnaire Drive & NYS Route 31*	21	C	17	C	31	D	110	F	12	B	13	B
9	Lawton Road/Legionnaire Drive & NYS Route 31	16	B	12	B	25	C	99	F	19	B	35	C
10	U.S. Route 11 & NYS Route 31	58	E	45	D	66	E	193	F	28	C	48	D
11	I-81 SB On-Ramp/I-81 SB Off-Ramp & NYS Route 31	26	C	24	C	26	C	75	E	25	C	18	B
12	Parking Lot/Lakeshore Road Spur & NYS Route 31	60	E	40	D	83	F	42	D	51	D	43	D
13	South Bay Road & NYS Route 31	57	E	47	D	59	E	61	E	32	C	34	C
14	Caughdenoy Road & Verplank Road*	20	C	14	B	23	C	214	F	7	A	7	A
15	Doreen Avenue & NYS Route 31*	61	F	38	E	68	F	49	E	18	C	22	C
16	NYS Route 31 & Button Road*	51	F	34	D	25	D	45	E	6	A	10	B
17	NYS Route 31 & Weller Canning Road	185	F	73	F	140	F	282	F	13	B	14	B
18	Morgan Road & GNM Driveway 2*	170	F	42	E	119	F	69	F	15	B	15	B
29	Soule Road & NYS Route 481	71	E	60	E	63	E	81	F	54	D	33	C
20	Carling Road South/Carling Road North & NYS Route 31	69	E	52	D	57	E	63	E	56	E	32	C
21	Oswego Road & NYS Route 31	89	F	87	F	72	E	108	F	54	D	35	C

*Unsignalized Intersection
** New Intersections in the Preferred Action Alternative

Preferred Action Alternative with Recommended Mitigation in 2041

Figure 3.11-21 and Figure 3.11-22 summarize the effects of recommended mitigations to freeway and intersection LOS for the Preferred Action Alternative in 2041. All freeway segments would operate at LOS C or better in the morning and afternoon peak periods. Additionally, all intersections would operate at LOS D or better during the 6:00 a.m. peak hour, and approximately 98 percent would operate at LOS D or better during the 7:00 a.m. peak hour. About 93 percent of the intersections operate at LOS D or better in the 4:00 p.m. peak hour, and 92 percent would operate at LOS D or better during the 5:00 p.m. peak hour.

Table 3.11-17 shows the freeway segments that are significantly impacted in 2041 by the Preferred Action Alternative and the effect that the recommended mitigations would have on those impacts. The recommended mitigations would improve traffic operations at all impacted segments, which are forecasted to operate at LOS C or better.

Table 3.11-18 and Table 3.11-19 show the intersections significantly impacted in 2041 by the Preferred Action Alternative in the a.m. and p.m. peak periods, respectively, and the effects of recommended mitigations on those impacts. The recommended mitigations would improve traffic operations, and significant adverse impacts would be mitigated at all the intersections studied, except for the following five intersection locations:

1. NYS Route 31 and I-81 SB Ramp
2. NYS Route 31 and NYS Route 481 SB
3. US Route 11 and NYS Route 31
4. NYS Route 31 and Lakeshore Spur
5. South Bay Road and NYS Route 31

These five locations are expected to operate at LOS E even with the recommended mitigations. Further mitigation measures, however, are not recommended due to significant geometric constraints that would be encountered when implementing any additional traffic improvements. Specifically, at the NYS Route 31 intersections with the I-81 and NYS Route 481 southbound ramps, the recommended mitigation scenario incorporates reconfiguring the interchanges to diverging diamond interchanges (DDI). Providing further recommended mitigation would require additional widening along the ramps or NYS Route 31, which would have significant geometric constraints. At the NYS Route 31 intersection with Lakeshore Spur, the recommended mitigation scenario incorporates widening along NYS Route 31 to provide additional through lanes. Providing further mitigation would require additional widening along NYS Route 31, either by creating additional through lanes or providing additional turn lanes at this intersection. At the NYS Route 31 intersection with South Bay Road, the intersection operates at LOS E with 56 seconds of delay per vehicle, which is only one second of delay from LOS D. Finally, at the intersection of U.S. Route 11 and NYS Route 31, the mitigation scenario incorporates widening along each roadway. Further mitigation would require additional widening along these roadways. Accordingly, the potential impacts from the Preferred Action Alternative at these five intersections are partially unmitigated under the recommended mitigation scenarios.

Figure 3.11-21 Freeway LOS (Preferred Action Alternative with Recommended Mitigation 2041)

Figure 3.11-22 Intersection LOS (Preferred Action Alternative with Recommended Mitigation 2041)

Table 3.11-17 Impacted Freeway Segments Comparison - 2041

Segment Direction	Segment Description	Segment Type	2041 No Action				2041 Preferred Action				2041 Preferred Action with Recommended Mitigations			
			Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
			6 AM		7 AM		6 AM		7 AM		6 AM		7 AM	
I-81 NB	I-81 NB Off-Ramp to I-481	Diverge	4.8	A	7.6	A	4.7	A	36.0	E	5.3	A	12.1	B
	I-81 NB Between Off/On-Ramps to/from I-481	Basic	5.2	A	8.8	A	5.2	A	56.3	F	5.9	A	14.9	B
	I-81 NB Between Off/On-Ramps to/from I-481	Weave	4.2	A	7.1	A	4.6	A	57.4	F	5.3	A	12.6	B
	I-81 NB after the Off-Ramp to I-481	Basic	5.1	A	8.7	A	4.7	A	106.7	F	7.4	A	17.6	B
	I-81 NB On-Ramp from I-481	Merge	3.2	A	5.5	A	2.9	A	118.2	F	4.4	A	10.8	B
	I-81 NB Between I-481 and NYS Route 31	Basic	4.3	A	7.3	A	3.9	A	152.7	F	5.8	A	14.5	B
	I-81 NB Off-Ramp to NYS Route 31	Diverge	3.4	A	6.1	A	3.2	A	164.1	F	3.5	A	8.5	A
I-81 SB	I-81 SB Off-Ramp to NYS Route 31	Diverge	6.5	A	11.6	B	5.7	A	46.7	F	8.1	A	15.5	B
NYS Route 481	NYS Route 481 WB Off-Ramp to Caughdenoy Rd.	Diverge	3.8	A	6.8	A	5.1	A	49.9	F	3.8	A	12.2	B

NYS Route 481	NYS Route 481 WB Off-Ramp to NYS Route 31	Diverge	2.5	A	4.2	A	3.2	A	43.9	E	3.0	A	5.1	A

Table 3.11-18 Impacted Intersections Comparison – 2041 AM Peak

No.	Intersection Name	2041 No Action				2041 Preferred Action				2041 Preferred Action with Recommended Mitigations			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		6 AM		7 AM		6 AM		7 AM		6 AM		7 AM	
1	Grange Road W & NYS Route 31*	23	C	100	F	25	D	>300	F	2	A	6	A
2	Van Hoesen Road & NYS Route 31*	20	C	42	E	21	C	>300	F	3	A	4	A
3	Grange Road E & NYS Route 31*	12	B	16	C	13	B	>300	F	10	B	15	C
4	Stearns Road & NYS Route 31*	18	C	66	F	21	C	>300	F	6	A	14	B
5	NYS 31 & Burnet Road*	15	B	23	C	19	B	>300	F	3	A	19	B
6	Barcaldine Drive/Legionnaire Drive & NYS Route 31*	12	B	18	C	11	B	236	F	10	B	34	D
7	Lawton Road/Legionnaire Drive & NYS Route 31	8	A	13	B	8	A	246	F	10	A	35	C
8	U.S. Route 11 & NYS Route 31	27	C	40	D	43	D	94	F	19	B	27	C
9	NYS Route 31 & I-81 SB Ramp	18	B	51	D	20	C	114	F	15	B	66	E
10	NYS Route 31 & Pardee Road/I-81 NB Ramp	24	C	40	D	27	C	>300	F	13	B	24	C
11	Caughdenoy Road & Verplank Road*	10	A	11	B	10	A	41	E	7	A	11	B
12	NYS Route 481 NB Off-Ramp & Maple Road & Caughdenoy Road	10	A	11	B	10	B	>300	F	4	A	7	A
13	NYS Route 31 & Weller Canning Road*	15	C	29	D	16	C	>300	F	10	B	15	C

* Unsignalized Intersections; ** New Intersections in the Preferred Action Alternative

Table 3.11-19 Impacted Intersections Comparison – 2041 PM Peak

No.	Intersection Name	2041 No Action				2041 Preferred Action				2041 Preferred Action Alternative with Mitigation			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		4 PM		5 PM		4 PM		5 PM		4 PM		5 PM	
1	NYS Route 31 & NYS Route 481 SB	68	E	42	D	70	E	64	E	70	E	76	E
2	NYS Route 31 & NYS Route 481 NB	51	D	27	C	54	D	57	E	45	D	42	D
3	NYS Route 31 & GNM West	142	F	83	F	147	F	165	F	56	E	56	E
4	Parking Lot/GNM East & NYS Route 31	51	D	30	C	83	F	109	F	36	D	38	D
5	Morgan Road & NYS Route 31	71	E	59	E	82	F	153	F	56	E	50	D
6	Henry Clay Boulevard & NYS Route 31	27	C	27	C	64	E	122	F	30	C	28	C
7	NYS Route 31 & Van Hoesen Road	108	F	83	F	127	F	>300	F	3	A	5	A
8	NYS Route 31 & Grange Road East	61	F	30	D	71	F	41	E	13	B	14	B
9	NYS Route 31 & Caughdenoy Road	22	C	12	B	28	C	177	F	32	C	18	B
10	Stearns Road & NYS Route 31*	63	F	70	F	116	F	>300	F	10	A	10	B
11	NYS Route 31 & Burnet Road*	39	E	29	D	145	F	291	F	2	A	17	B

No.	Intersection Name	2041 No Action				2041 Preferred Action				2041 Preferred Action Alternative with Mitigation			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		4 PM		5 PM		4 PM		5 PM		4 PM		5 PM	
12	Barcaldine Drive/Legionnaire Drive & NYS Route 31*	16	C	15	B	20	C	>300	F	12	B	11	B
13	Lawton Road/Legionnaire Drive & NYS Route 31	34	C	28	C	46	D	227	F	21	C	33	C
14	U.S. Route 11 & NYS Route 31	90	F	60	E	155	F	>300	F	31	C	78	E
15	NYS Route 31 & I-81 SB Ramp	37	D	24	C	71	E	166	F	25	C	19	B
16	NYS Route 31 & Pardee Road/I-81 NB Ramp	101	F	89	F	118	F	82	F	-	-	-	-
17	Parking Lot/Lakeshore Spur & NYS Route 31	48	D	32	C	64	E	93	F	60	E	54	D
18	South Bay Road & NYS Route 31	32	C	24	C	38	D	61	E	46	D	56	E
19	Caughdenoy Road & Verplank Road*	17	C	14	B	19	C	213	F	8	A	8	A
20	Caughdenoy Road & Oak Orchard Road*	14	B	13	B	15	C	36	E	14	B	17	C
21	U.S. Route 11 & Bear Road	50	D	46	D	49	D	62	E	40	D	42	D
22	NYS Route 31 & Cicero North Syracuse High School East	138	F	35	E	78	F	42	E	23	C	40	E
23	NYS Route 31 & Button Road*	51	F	29	D	85	F	>300	F	8	A	14	B

No.	Intersection Name	2041 No Action				2041 Preferred Action				2041 Preferred Action Alternative with Mitigation			
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
		4 PM		5 PM		4 PM		5 PM		4 PM		5 PM	
24	NYS Route 31 & Weller Canning Road*	229	F	130	F	>300	F	>300	F	13	B	21	C
25	Morgan Road & Verplank Road	24	C	19	B	26	C	57	E	22	C	21	C
26	Morgan Road & GNM Driveway 2*	33	D	23	C	34	D	36	E	15	B	15	B
27	U.S. Route 11 & Chick-fil-A	54	D	9	A	72	E	18	B	35	C	16	B
28	NYS Route 31 & Carling Road	58	E	52	D	83	F	82	F	46	D	33	C

*Unsignalized Intersection
** New Intersections in the Preferred Action Alternative

3.11.3.5 Bicycle & Pedestrian Facilities

The No Action Alternative does not include new bicycle and pedestrian facilities in the study area. Due to the limited bicycle and pedestrian facilities currently available, it is anticipated that bicycle and pedestrian trips would remain minimal and would not change significantly in the transportation study area.

The Preferred Action Alternative is anticipated to generate additional bicycle and pedestrian trips, particularly on NYS Route 31 and U.S. Route 11. However, unless additional facilities are provided, this form of travel would be minimal and remain limited. The total number of bicycle and pedestrian trips to Micron Campus is anticipated to be less than one percent of site traffic (80 trips per day).

The recommended mitigations include dedicated and continuous shared-use paths and sidewalks within the transportation study area along NYS Route 31 and U.S. Route 11, as well as connecting the paths and sidewalks along existing corridors. They also include adequate crosswalks at signalized intersections to improve connectivity and accessibility to residential neighborhoods located along these corridors. Pedestrian and bicyclist safety would be enhanced at intersections and interchanges through refuge islands, dedicated signals, signing, striping, and lighting.

3.11.3.6 Public Transit

The No Action Alternative would not introduce new public transit options in the transportation study area. Centro would continue to operate regional bus services through the area, as determined by the demand for these services.

The Preferred Action Alternative is anticipated to generate additional demand for bus services. The total number of transit trips to the Micron Campus is anticipated to be less than one percent (80 trips per day). Once the fabrication facilities on the Micron Campus are operational, Centro plans to provide additional transit services from downtown Syracuse to the Micron Campus, including an express bus route connecting Centro's Transit Hub to the Micron Campus and extending an existing bus route to the Micron Campus along U.S. Route 11. These additional transit services are included in the recommended mitigations.

The Preferred Action Alternative also includes shuttle services for construction workers during the construction of the Proposed Project. Current plans provide approximately 30 shuttle trips to shuttle construction workers to and from the Micron Campus during peak hours. The construction worker shuttle would be independent of the public transit system and operate on a fixed schedule to and from the Micron Campus from designated off-site parking lots during the peak hours. The location of this shuttle service's pick-up and drop-off is to be determined.

3.11.3.7 Rail System

The No Action Alternative would not result in new rail system facilities or operations in the transportation study area. The CSX freight rail line in the study area is expected to continue operating with minimal changes.

The Preferred Action Alternative includes the construction of a siding track at the Rail Spur Site, located east of and parallel to the CSX Railway mainline, with a 70-rail car storage capacity and two railyards (A and B), providing a total storage capacity of 165 additional rail cars. An offloading track or facility would also be constructed, capable of storing 15 additional railcars. A 250-railcar storage capacity is required for the entire Rail Spur Site to facilitate the required daily material unloading rate. Two rail unloaders would run in series, capable of unloading 60 railcars in a 16-hour period. The Rail Spur Site would provide adequate storage capacity to ensure off-loading trains do not block the NYS Route 31 roadway.

The Rail Spur Site would have a conveyance system expected to transport up to 1,500 short tons per hour (STPH) of aggregate materials from the Rail Spur Site over NYS Route 31 to the Micron Campus. Operations of the Rail Spur Site are expected to coincide with phased construction demand at the Micron Campus. During periods when maximum aggregate is needed for construction, 60 rail cars would be offloaded at the Rail Spur Site each day, and a second set of 60 rail cars arriving from the aggregate supply sources to the Rail Spur Site would result in two trips at the NYS Route 31 crossing per day.

As part of the Preferred Action Alternative and Preferred Action Alternative with Mitigation, there would be an anticipated increase of two crossings per day at the NYS Route 31 crossing and two crossings per day at the Caughdenoy Road crossing. These crossings would require five to ten minutes to complete, which would stop vehicular traffic along NYS Route 31 and Caughdenoy Road. To mitigate these impacts, rail transport and receiving at the Rail Spur Site would be limited to off-peak hours, ensuring that the train crossing does not impact peak-period traffic on NYS Route 31 or Caughdenoy Road. This activity would occur until the aggregate is no longer required for a particular construction phase.

3.11.3.8 Airport

The No Action Alternative would not affect SYR's current growth forecasts. The airport is expected to serve about 2 million passenger enplanements in 2040.

The Preferred Action Alternative would increase passenger activity at the Airport. SYR is in the process of updating its current Master Plan to accommodate this expected growth. Passenger activity is expected to increase by about 20 percent, to 2.4 million passenger enplanements by 2040. The airport is currently implementing a 5-year improvement plan to address its near-term needs.

3.11.3.9 Safety

The No Action Alternative and Preferred Action Alternative increase traffic within the study area, accordingly, the crash rates at locations with higher-than-average rates would be expected to increase. However, with the implementation of improvements as part of the Preferred Action Alternative with Mitigation, safety benefits would be provided that address the higher average crash rates.

At the ramp locations exhibiting higher crash rates, the reconfiguration of the NYS Route 481/NYS Route 31 and the I-81/NYS Route 481 interchanges to Divergent Diamond Interchanges (DDI) would be expected to mitigate the above-average crash rates at those locations. The additional interchanges proposed at the New Access Road/NYS Route 481 and I-81/Sneller Road would also be expected to relieve traffic from all other interchanges and reduce the crash rates occurring. Specific to the I-81/NYS Route 481 interchange, the ongoing NYSDOT project to reconfigure that interchange is expected to address the above-average crash rates occurring along those ramps.

The intersection locations exhibiting higher crash rates are along the U.S. Route 11, NYS Route 31, and Caughdenoy Road corridors. Along U.S. Route 11, the recommended widening between NYS Route 31 and Sneller Road would be expected to mitigate a portion of the intersections that experience higher-than-average crash rates. The recommended widening and other improvements along NYS Route 31 would be expected to address the above-average crash rates along that corridor. The recommended reconfiguration of the Caughdenoy Road/NYS Route 481 intersection and the reconfiguration of the ramp would also reduce the crash rate occurring along this corridor. Finally, the additional interchanges proposed at the New Access Road/NYS Route 481 and I-81/Sneller Road, as well as the New Access Road, would be expected to relieve traffic from these project roadways and reduce the crash rates occurring.

3.11.4 Summary of Impacts

This section summarizes the transportation impacts for the No Action Alternative and the Preferred Action Alternative. The No Action Alternative assumes that the Proposed Project would not proceed; however, future developments in the Transportation Study Area are expected to impact traffic volumes and the roadway network. The Preferred Action Alternative assumes the Proposed Project is fully built and would impact traffic volumes and the roadway network. The Years 2027, 2031, and 2041, along with their multimodal impacts, are presented for each alternative.

3.11.4.1 Impacts in 2027:

- One freeway segment would be significantly impacted by the Preferred Action Alternative.
- 11 intersections would be significantly impacted by the Preferred Action Alternative.
- Temporary significant impacts deemed partially unmitigable as the capacity improvements cannot be designed and constructed prior to this analysis year.

3.11.4.2 Impacts in 2031:

- Three freeway segments would be significantly impacted by the Preferred Action Alternative.
- 26 intersections would be significantly impacted by the Preferred Action Alternative.
- All significant impacts would be mitigated by the Preferred Action Alternative with Recommended Mitigations.

3.11.4.3 Impacts in 2041:

- Ten freeway segments would be significantly impacted by the Preferred Action Alternative.

- 27 intersections would be significantly impacted by the Preferred Action Alternative.
- All significant impacts along freeway segments would be mitigated by the Preferred Action Alternative with Recommended Mitigations.
- Significant impacts at intersections would be mitigated by the Preferred Action Alternative with Recommended Mitigations except at five intersections. These five intersections would be partially unmitigable due to the significant number of improvements already presented by the Preferred Action Alternative with Recommended Mitigations and the significant geometric constraints to implement additional improvements.

3.11.4.4 Multimodal Impacts:

- Bicycle and Pedestrians
    - Minimal increases in bicycle and pedestrian trips (less than one percent, or 80 trips per day) with completion of the Proposed Project. Additional bicycle and pedestrian trips are expected to occur on NYS Route 31 and U.S. Route 11.
    - Recommended mitigations include dedicated and continuous shared-use paths and sidewalks along NYS Route 31 and U.S. Route 11 and include connecting paths and sidewalks along existing corridors. Adequate crosswalks would be provided at signalized intersections, as well as other safety improvements at intersections and interchanges, to benefit pedestrians and bicyclists.
- Public Transit
    - Minimal increases in transit trips (less than one percent, or 80 trips per day) with completion of the Proposed Project.
    - Centro plans to evaluate the need for new routes following the start of the fabs' operations.
    - Includes shuttle services for construction workers, with 30 trips during peak hours.
- Rail System
    - Adequate storage would be provided at the Rail Spur Site to ensure that offloading trains do not block NYS Route 31.
    - Anticipated increase of two train crossings per day at the NYS Route 31 crossing and two crossings per day at the Caughdenoy Road crossing as part of the Preferred Action Alternative. These crossings would require five to ten minutes to complete, which would stop vehicular traffic along NYS Route 31 and Caughdenoy Road.
    - Rail transport would be limited to off-peak hours to ensure that the train crossing does not impact traffic on NYS Route 31 or Caughdenoy Road.

- Airport
    - Expected growth in airport passenger activity rising to 2.4 million enplanements by 2040, prompting updates to the airport's Master Plan and a 5-year improvement plan to accommodate this growth.

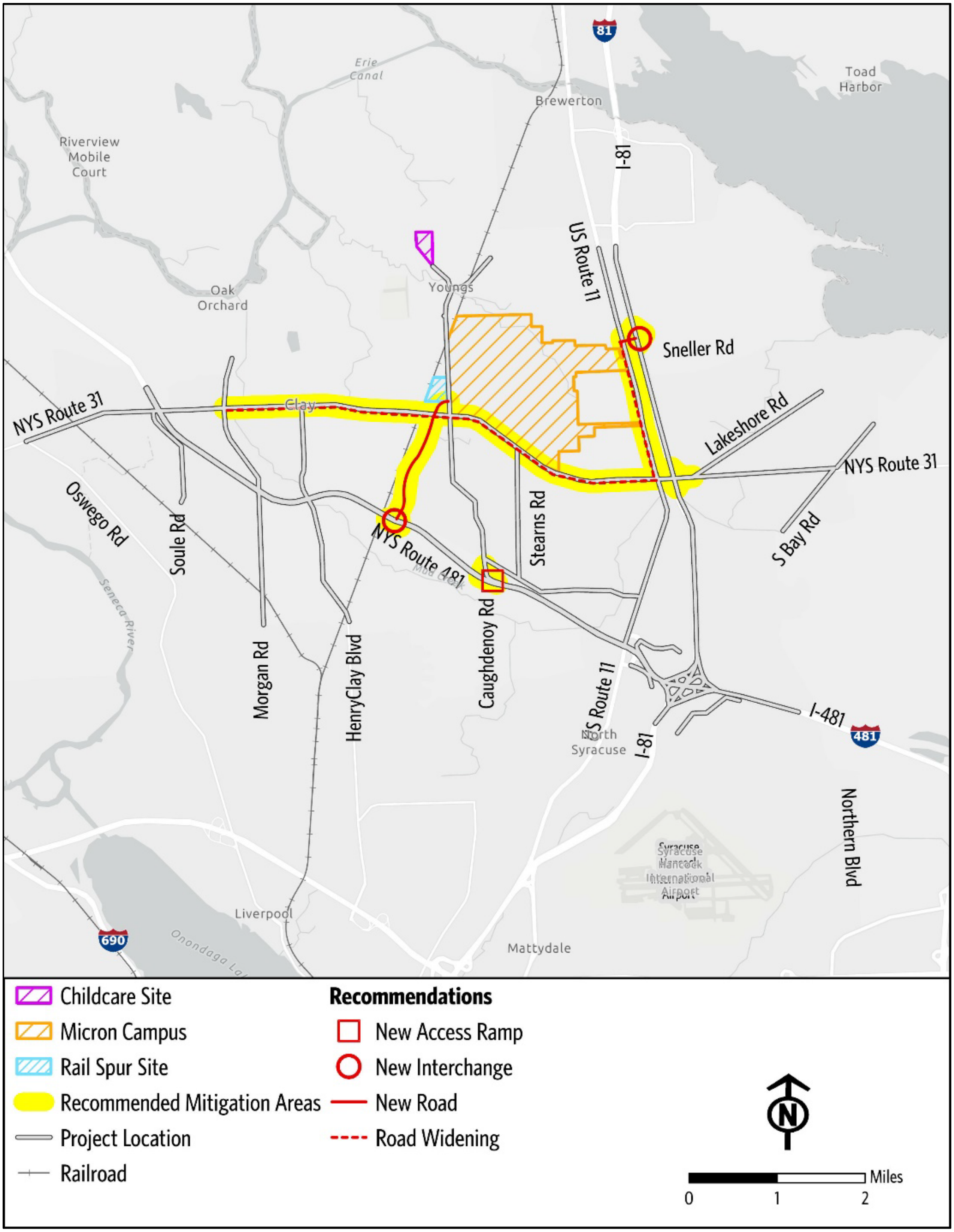
3.11.4.5 Safety

- All studied ramp locations (15 ramps) and 28 intersections concentrated along U.S. Route 11, NYS Route 31, and Caughdenoy Road exhibit higher-than-average crash rates. All freeway segments exhibit lower than average crash rates. The Proposed Project would be expected to increase the crash rates with the increase in traffic.
- At the ramp locations, the reconfiguration of the NYS Route 481/NYS Route 31 and the I-81/NYS Route 481 interchanges to Divergent Diamond Interchanges (DDI), the additional interchanges proposed at the New Access Road/NYS Route 481 and I-81/Sneller Road, and ongoing NYSDOT project to reconfigure the I-81/NYS Route 481 interchange would be expected to mitigate the above average crash rates.
- At the intersection locations, the widening of U.S. Route 11 and NYS Route 31, the reconfiguration of the Caughdenoy Road/NYS Route 481 intersection and interchange, and the additional interchanges proposed for New Access Road/NYS Route 481 and I-81/Sneller Road would be expected to mitigate the above-average crash rates.

3.11.5 Recommended Mitigations

The recommended mitigations listed in Section 3.11.3.4 encompass an array of improvements to address the Preferred Action Alternative’s impact on transportation resulting from the Proposed Project. The recommended mitigations are highlighted in Figure 3.11-23.

Figure 3.11-23 Recommended Mitigations



The recommended mitigations would require changes to roadway configuration, potential land acquisition for interchanges, ramps, roadways, and intersection signal timing upgrades to achieve the proposed operational conditions. They would also improve the transportation network's operational performance by mitigating the significant operational and localized impacts of the Proposed Project at intersections. Appendix M, Section 9, Year 2041 Traffic Operations provides a detailed assessment of the recommended mitigations. With the implementation of the recommended transportation mitigations, potential significant adverse transportation effects posed by the Preferred Action Alternative would be mitigated and/or avoided to the maximum extent. The list below identifies the intersections that remain partially unmitigated in the 2041 peak hours, with recommended mitigations applied.

1. NYS Route 31 and I-81 SB ramp terminal intersection
2. NYS Route 31 and NYS Route 481 SB ramp terminal intersection
3. U.S. Route 11 and NYS Route 31
4. NYS Route 31 and Lakeshore Spur
5. NYS Route 31 and South Bay Road

Upon reviewing potential additional mitigations, these five locations were maintained as partially unmitigable due to each intersection expected to operate at LOS E with Recommended Mitigation Scenario C and significant geometric constraints to implement any additional improvements.

The recommended mitigation measures are provided for consideration by the local, state, and federal traffic agencies with jurisdiction over the identified roadways. The detailed design and implementation of the recommended mitigations are subject to the discretion and approval of federal, state, and local transportation agencies. Accordingly, such measures will be subject to further environmental review and approval by NYSDOT, FHWA, and local transportation agencies. Specifically, NYSDOT and FHWA will undertake a separate NEPA/SEQRA environmental review of the recommended mitigations and implement these or other mitigations that the agencies deem appropriate to ensure the best overall operational performance of the transportation network with the Proposed Project.

3.12 NOISE AND VIBRATION

This section describes the affected environment, effects of the No Action Alternative and the Preferred Action Alternative, and associated mitigation measures and/or BMPs related to noise and vibration.

Noise is unwanted sound. Sound is unwanted when it interferes with normal activities such as sleep, concentration, conversation or recreation, or causes annoyance, hearing loss or other physical problems. Noise could be generated by construction activity, traffic, outdoor mechanical systems and activities associated with operation of the Preferred Action Alternative. Vibration is energy transmitted through the ground that may cause perceptible shaking and a rumbling sound inside a building. Vibration above certain levels can damage buildings, disrupt sensitive operations, and cause annoyance to humans.

3.12.1 Noise and Vibration Sources, Terms and Concepts

The sources of noise and vibration that are assessed in this EIS are shown in Table 3.12-1.

Table 3.12-1 Potential Sources of Noise and Vibration from the Preferred Action Alternative

Effect Type	Source
Noise	Construction of the Rail Spur Site
Noise, Vibration[1]	Construction of the Micron Campus, including operation of the Rail Spur Site
Noise	Construction of the Childcare Site
Noise	Operation of the Micron Campus, including related Rail Spur Site operations Operation of the Childcare Site
Noise	Traffic, including construction and operations related traffic
Noise	Connected Actions that are described in Section 2.1

[1] Vibration is assessed only for the Micron Campus construction because it is unusual for vibration from sources like rubber-tired heavy trucks or construction vehicles to be perceptible (Source: FTA Noise and Vibration Manual). Vibration may be perceived from nearby construction activities such as blasting (which is not planned at this time, but could potentially occur), vibratory pile-installation and operating many pieces of very heavy earth-moving equipment simultaneously, which may occur only during the proposed Micron Campus construction.

Table 3.12-2 provides definitions of the terms and concepts necessary to understand the analysis of noise and vibration effects. For context, Figure 3.12-1 shows the typical noise levels of different types of outdoor and indoor environments and noise sources. Figure 3.12-2 illustrates typical vibration sources and the human response and structural sensitivity to the vibration sources.

Table 3.12-2 Noise and Vibration Terms and Concepts

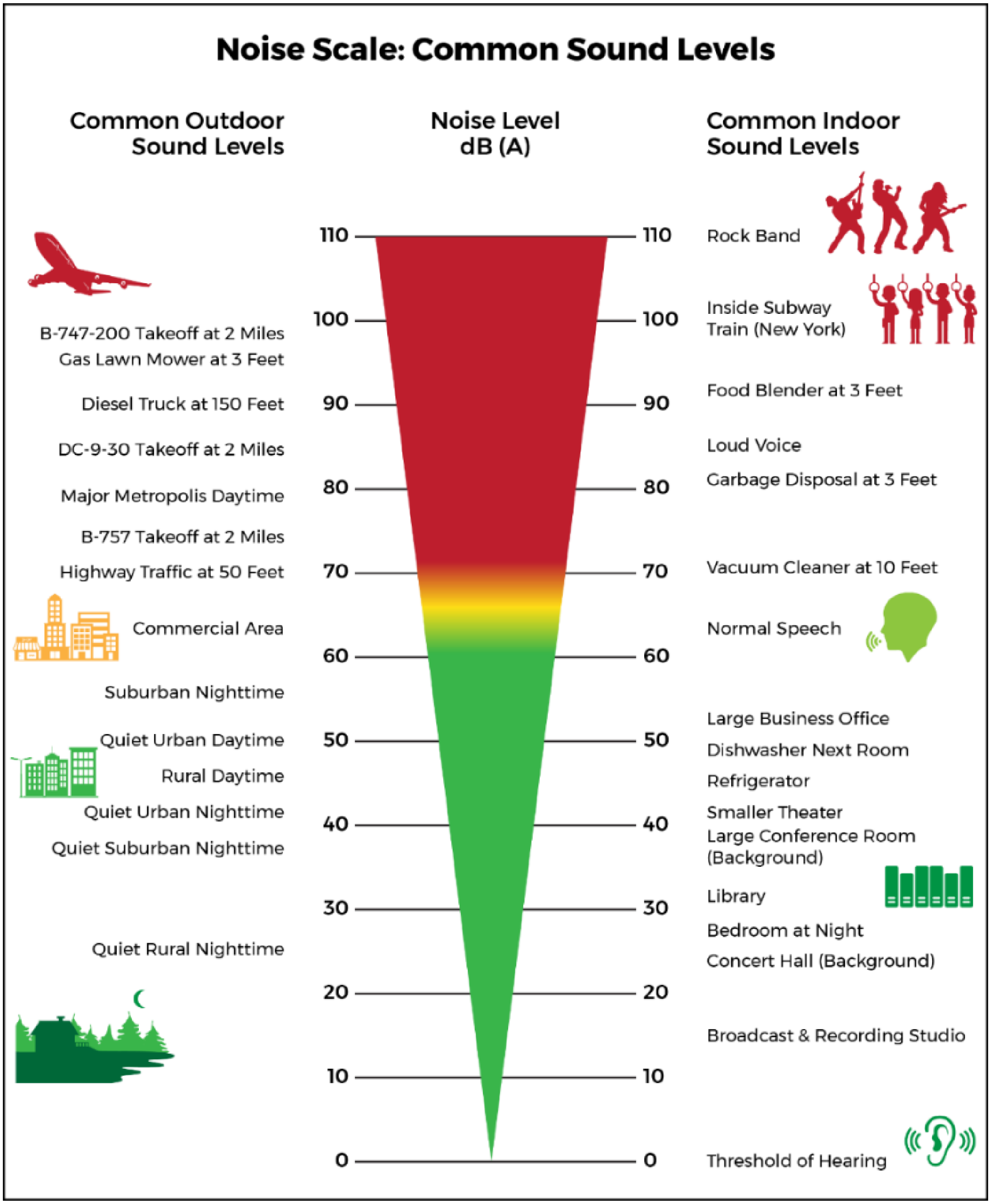
Term	Description
Ambient Noise Level	The noise level resulting from the combination of natural and mechanical sources and human activity, other than the noise from the source of interest (e.g. the Preferred

	Action Alternative). Ambient noise levels represent the existing condition, also referred to as the Affected Environment. See Figure 3.12-1 for typical ambient levels in different environments.
Background Traffic Growth	The predicted increase in traffic volume from year to year that results from factors other than the Preferred Action Alternative, including other future developments. The No Action Alternative includes noise from background traffic growth.
dB (Decibel)	The unit used to measure the intensity of a sound. Decibels measure a scale from the threshold of human hearing, 0 dB, upward towards the threshold of pain, about 120-140 dB. Decibels are computed logarithmically and cannot be added arithmetically. Thus, an increase of 10 dB is perceived by human ears as a doubling of noise.
dBA (A-weighted decibel)	An expression of the relative loudness of sounds as perceived by the human ear. -A-weighting gives more value to frequencies in the middle of the human hearing range and less value to frequencies at the edges. This weighting helps quantify a noise with a wide range of frequencies into a single number.
Dwelling unit equivalent	A unit of measure that standardizes all land use categories (housing, retail, office, houses of worship, parks, etc.) to the level of traffic created by one single-family dwelling unit.
Effect Zone	An area represented by a receiver (see Receiver).
Leq (Equivalent Continuous Noise Level)	A noise metric used to represent the total sound level or energy average over a specified period (e.g., one hour), which accounts for the fluctuation of sound over a period. The one-hour Leq, abbreviated as Leq(1h), is used by the FHWA and the NYSDOT to assess environmental noise exposure, annoyance, and effect associated with traffic noise. The data presented in this assessment as Leq dBA is the one-hour Leq unless otherwise noted (e.g. as daytime average Led_a dBA).
Lday (Daytime noise level) and Lnight (Nighttime Noise Level)	Lday represents the average daytime noise exposure over the 14-hour period from 7:00 a.m. to 9:00 p.m. Lnight represents the average 10-hour nighttime period from 9:00 p.m. to 7:00 a.m. The daytime and nighttime periods are consistent with those used in the Town of Clay Code.
Ldn or DNL (Day Night Average Sound Level)	A 24-hour average sound level after adding a 10 dB weighting for noise occurring between the hours of 10:00 p.m. to 7:00 a.m. to account for the increased sensitivity of people to noise levels at night because ambient noise typically is lower at night than during daytime hours. Ldn is useful for reporting varying noise that occurs over 24 hours and is used by the by the U.S. Department of Housing and Urban Development (HUD) and the Federal Aviation Administration.
Noise	Unwanted sound; sound is unwanted when it interferes with normal activities such as sleep, concentration, conversation, or recreation, or causes annoyance, hearing loss, or other physical problems.
Noise Measurement	The noise level data recorded and collected at a location that includes all ambient (existing) sources of noise at the location (such as traffic, wind, insects, lawnmowers, etc.). A measurement at a particular location can represent a larger surrounding area with similar noise sources.
Predicted noise (or vibration) level	The noise (or vibration) level estimated by a model to represent a given condition. Noise and vibration levels are predicted in this section for the No Action Alternative and the Preferred Action Alternative.

Peak Particle Velocity (PPV)	A vibration metric that represents the peak signal value of an oscillating vibration velocity waveform expressed in inches/second. PPV is used to measure potential effects or damage to the structural integrity of buildings.
Receptor or Sensitive Receptor	A location in which humans may be sensitive to noise or vibration. Noise sensitive receptors include residential dwelling units, schools, houses of worship, hospitals, libraries, parks, and similar other areas described in NYSDOT Policy Table 1. Vibration sensitive receptors include museums, historic sites, laboratories, and hospitals, and residences.[102]
Receiver	A discrete point within a model that represents one or more noise and/or vibration sensitive receptors; the receptors are in the receiver's effect zone.
Significance Criteria	The thresholds at and above which a noise or vibration effect merits consideration of abatement or mitigation to eliminate or reduce the effect. Significance criteria for noise and vibration effects used in this analysis are identified in Section 3.12.3.1.
Significant Effect	A predicted noise or vibration level which equals or exceeds the significance criteria (as defined above and identified in Section 3.12.3.1). Receivers or receptors for which a predicted effect would equal or exceed the significance criteria, without abatement or mitigation would experience a significant effect.
Sound Pressure Level (SPL)	A measure of the radiating sound pressure level generated by a noise source at any given point of interest at a fixed distance from the source. The SPL is generally expressed in A-weighted decibels and experienced by humans as noise.
Study Area	The area in which receptors may be exposed to noise or vibration from the No Action and Preferred Action Alternatives.
Vibration	Energy transmitted through the ground that may cause perceptible shaking of the floors, walls, and ceilings and a rumbling sound inside a building. Vibration above certain threshold level can damage buildings, disrupt sensitive operations, and cause annoyance to humans.
Vibration decibels (VdB)	A vibration metric that represents the vibration velocity level in inches per second and is expressed in a decibel scale. VdB is used to measure human response to vibration. A typical background level of ground vibration is 52 VdB and the human threshold for perception of ground vibration is 65 VdB (U.S. Department of Energy, 2008). See Figure 3.12-2 for typical sources of vibration and human/structural response.

[102] NYSDOT guidance refers to these points as receivers, with the term "receptor" reserved for individual dwelling units, parks, houses of worship, etc. Source: NYSDOT Transportation Environmental Manual Noise analysis Policies and Procedures, Section 4.4.18.5.2.2.

Figure 3.12-1 Typical Outdoor Noise Levels



Source: FHWA, National Highway Institute (NHI) (n.d.).

Figure 3.12-2 Typical Levels of Ground-Bourne Vibration

Human/Structural Response	Velocity Level (VdB)	Typical Sources (at 50 feet)
Threshold, minor cosmetic damage fragile buildings	100	Blasting from construction projects
		Bulldozers and other heavy tracked construction equipment
Difficulty with vibration-sensitive tasks, such as reading a computer screen	90	Locomotive powered freight train
Residential annoyance, infrequent events	80	Rapid Transit Rail, upper range
		Commuter Rail, typical range
Residential annoyance, frequent events		Bus or Truck over bump
	70	Rapid Transit Rail, typical range
Limit for vibration-sensitive equipment. Approximate threshold for human perception of vibration		Bus or truck, typical
	60	Typical background vibration
	50	

Source: FTA, Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123, September 2018 (FTA, 2018).

3.12.2 Legal and Regulatory Setting

Restrictions on noise exposure, are generally implemented at the local level through municipal noise ordinances and zoning codes. The Preferred Action Alternative must comply with the noise and vibration requirements in the Town Codes of Clay and Cicero. The Connected Actions must comply with the codes of the municipalities in which they would occur, which includes the Town of Clay and the City of Oswego.[103, 104] As indicated in Table 3.12-3, the Town of Clay has one set of requirements (Chapter 230-17.A (1) applicable to operation of the Industrial 2 Zone, which would apply to the Micron Campus, the Rail Spur Site and the National Grid electric substation, and another set of requirements (Chapter 152.4.L) applicable to the Childcare Site and other Connected Actions in Clay. A third requirement (Chapter 152.4.H) is application to construction on all sites in the Town of Clay. There are no applicable state or federal requirements for noise and vibration; however, potentially useful guidance of New York State and federal agencies is shown in ---Table 3.12-3.[105]

[103] National Grid is seeking a waiver from the NYS Public Service Commission (NYSPSC) from the limitations on construction noise in the Town of Clay noise ordinance due to safety or continuous operation requirements.

[104] Oswego County, where OCWA's proposes improvements to its LOWTP facility, has no local noise restrictions.

[105] Noise and vibration effects to biological and cultural resources are addressed in Sections 3.4 (Biological Resources) and 3.5 (Historic and Cultural Resources), respectively.

Table 3.12-3 Local Noise and Vibration Requirements and State and Federal Guidance

Name and Source	Description
Local Requirements	
Town of Clay Chapter 230-17.A (1) Industrial Districts Performance Standards	Limits noise at the property line to 70 decibels between 6:00 a.m. and 10:00 p.m. and to 60 decibels between 10:00 p.m. and 6:00 a.m., with some allowance for intermittent noise. While property that is entirely or partially within 500 feet of a Residential Zone District is subject to the more restrictive noise standards of either this Section or of the Town of Clay Code Chapter 152, land use activities in the Industrial 2 zone are specifically exempt from this more restrictive noise standard. Prohibits vibration that creates an unreasonable displacement as determined at the property lines of the subject property by the Commissioner of Planning and Development. The restrictions in this chapter apply to the operation of the Micron Campus, Rail Spur Site and National Grid Clay Electrical Substation site, which are in the Industrial 2 zone.
Town of Clay Chapter 152.-4.H	Prohibits noise associated with demolition and construction between 7:00 p.m. and 7:00 a.m. on weekdays, before 8:00 a.m. and after 5:00 p.m. on Saturday and any time on Sunday. This chapter applies to construction on all sites in the Town of Clay: the Micron Campus, Rail Spur Site, Childcare Site, National Grid Clay Electrical Substation, National Grid GRS 147A, OOWWTP, and OCWA Terminal Campus.
Town of Clay Chapter 152.-4.L	Limits noise level at the property line to 52dBA from 7:00 a.m. to 9:00 p.m. and to 45 dBA from 9:00 p.m. to 7:00 a.m., with some allowance for intermittent noise. This chapter applies to the operation of the Childcare Site, the National Grid GRS 147A, the OOWWTP and the OCWA Terminal Campus.
Town of Cicero Chapter 143 Noise	Prohibits noise associated with construction activity before 7:00 a.m. and after 8:00 p.m. on weekdays, before 8:00 a.m. or after 8:00 p.m. on Saturday, and any time on Sunday. This chapter applies to the U.S. Route 11 driveway on the Micron Campus.
City of Oswego Chapter 165 Noise	Prohibits construction activities which create excessive noise at the property limits of the construction site between the hours of 9:00 p.m. of one day and 7:00 a.m. of the following day on any day of the week. Limits noise exposure in residential zones to 55 dB (65 dB if the Sound Source Property Use Category is Business/industrial) from 7:00 a.m. to 9:00 p.m and to 50 dB from 9:00 p.m. to 7:00 a.m. This chapter applies to the OCWA LOWTP.
State Guidance	
New York State Department of Transportation	Applies to vehicular noise. Requires use of traffic characteristics that would yield the worst hourly traffic noise levels and contains criteria for determining when traffic noise effects would occur. When effects are

Name and Source	Description
(NYSDOT) Transportation Environmental Manual (TEM), Chapter 4.4.18 Noise Analysis Policy and Procedures (2024)	identified, consideration of noise abatement measures is required to determine whether the measures are feasible and reasonable. Incorporates FHWA requirements for transportation projects receiving federal highway aid. (23 CFR 772).
New York State Department of Conservation (NYSDEC), Program Policy DEP-00-1: Assessing and Mitigating Noise Impacts (2001)	Presents a program policy for the evaluation of noise levels. Includes noise effect assessment methods, examines circumstances under which sound creates significant noise effects, and identifies avoidance and mitigative measures to reduce or eliminate noise effects. This program policy does not supersede local laws or regulations.
Federal Guidance	
U.S. Department of Housing and Urban Development (HUD) Noise Abatement and Control (24 CFR Subtitle A Part 51B)	Noise standards and goals for HUD supported programs that are not regulatory requirements for other federal agencies but provide useful guidance for determining noise exposure goals at residential properties and other noise sensitive land uses.
Federal Highway Administration (FHWA) Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR 772)	Provides the basis for traffic noise prediction procedures, effect analysis and analysis of noise abatement measures that are incorporated into the NYSDOT Transportation Environmental Manual (listed above).
Federal Transit Administration (FTA), Transit Noise and Vibration Effect Assessment Manual, FTA Report No. 0123 (September 2018)	Procedures for evaluating the noise and vibration effects of construction and operation of transit facilities. The procedures are not regulatory requirements for other federal agencies but provide useful guidance for determining vibration effects.

3.12.3 Noise and Vibration Assessment Methodology

This section provides a summary of the components utilized for the quantitative analysis of noise and vibration effects from construction and operation of the Preferred Action Alternative and noise from traffic associated with both the No Action and Preferred Action Alternatives. The methodology for these analyses is comprised of four major components which are summarized and discussed in detail below: significance criteria, study areas, analysis scenarios, and models for predicting noise and vibration levels.

3.12.3.1 Significance Criteria

Significance criteria are defined as the thresholds at which a predicted noise or vibration effect merits consideration of abatement or mitigation to eliminate or reduce the effect. Significance criteria used in this analysis were adopted from three sources:

- For site based noise effects (i.e. construction and operation at each location of the Preferred Action Alternative), significance criteria were adopted from the NYSDEC Program Policy DEP001 Assessing and Mitigating Noise Impacts (NYSDEC Policy).
- For traffic noise effects, criteria were adopted from the NYSDOT Noise Analysis Policy and Procedures (NYSDOT Policy) contained in NYSDOT's Transportation Environmental Manual (TEM).
- For vibration from construction, significance criteria were adopted from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual.

Importantly, these thresholds are not a substitute for local codes, to which the Preferred Action Alternative would be required to comply.

Noise Significance Criteria

The NYSDEC Policy recommends that "in non-industrial settings the sound pressure level should probably not exceed ambient noise by more than 6 dBA at the receptor" and that an additional noise source in a non-industrial setting should not raise the ambient noise level above a maximum of 65 dBA (NYSDEC, 2001, p. 14).

While the NYSDEC policy does not specify a metric, such as the Leq used by NYSDOT to measure traffic noise, NYSDEC Policy emphasizes that "Leq correlates well and can be combined with other types of noise analyses." (NYSDEC, 2001, p. 7). Therefore, Leq is the metric used in this analysis.

Similarly, the NYSDOT Policy provides that an effect occurs if the predicted traffic noise level at a receiver (1) exceeds the existing (ambient) noise level by 6 dBA or more, or (2) approaches within 1 dBA or exceeds the noise levels set by the FHWA for land use based "Activity Categories" where receptors are located (referred to as Noise Abatement Criteria or NAC) (NYSDOT, 2024b, p. 14). The following NAC Activity Categories are present in the areas potentially affected by noise from the No Action and Preferred Action Alternatives:

- Category B – single family and multi-family residences
- Category C – medical facilities, public parks, picnic areas, places of worship, recreation areas, active sport areas schools, and trails

- Category E – hotels, motels, offices, restaurants and bars.[106]

The noise level for NAC Categories B and C is set at 67 Leq dBA and for Category E is 72 Leq dBA. If noise levels approach "within 1 dBA" of 67 or 72 Leq dBA or exceed these thresholds, NYSDOT Policy considers an effect to occur. Therefore, an effect would occur if the predicted noise level from an alternative would be at or above 66 Leq dBA for Categories B and C land uses and at or above 71 Leq dBA for Category E land uses.

Based on the thresholds established by the NYSDEC and NYSDOT Policies a significant adverse noise effect would occur from the No Action or Preferred Action Alternatives if either:

- a predicted noise level at a receptor is above 65 Leq dBA for Category B and C land uses and at or above 71 Leq dBA for Category E land uses, or
- an increase over the ambient noise level of 6 dBA or more occurs at a receptor.[107]

Vibration Significance Criteria

Two significance criteria are used in this vibration analysis. The effect criteria in the FTA guidance for frequent vibration events affecting residences and other buildings where people sleep is 72 VdB (FTA, 2018, Table 6-3, p. 126). The potential for structural damage to buildings depends upon the building composition, as shown in Table 3.12-4 (FTA, 2018, Table 7-5, p. 186).

[106] Category A includes lands on which quiet is of extraordinary significance, which are not present in the study areas. Category D is an indoor criterion which cannot be assessed without building details, such as insulation and window type, for the receptor. There are no criteria for activity categories F and G, which are also not noise sensitive and include agriculture, commercial and industrial uses, and undeveloped land.

[107]The HUD criterion (65 dBA Ldn), which reflects a person's cumulative exposure to varying noise levels over a 24-hour period, was considered for use in the analysis of construction and operations noise. However, because construction would occur over 16 hours and Ldn averages over 24 hours, Ldn would under-report construction noise exposure. For operations, which would be steady over 24 hours, the highest predicted noise exposure for any receptor is 55 dBA. Because Ldn is a weighted average, applying the 10 dBA increase to nighttime operations would result in 61 dBA Ldn, which is 4 dBA below the HUD criteria. Thus, applying the NYSDEC criterion of a change from the ambient noise level of 6 dBA or more provides more meaningful information and the HUD criterion is not applied to this analysis.

Table 3.12-4 Construction Vibration Damage Criteria

Building Category Classification	Peak Particle Velocity Effect Threshold (inches/second)	Approximate VdB[1] Level
Reinforced concrete, steel, or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

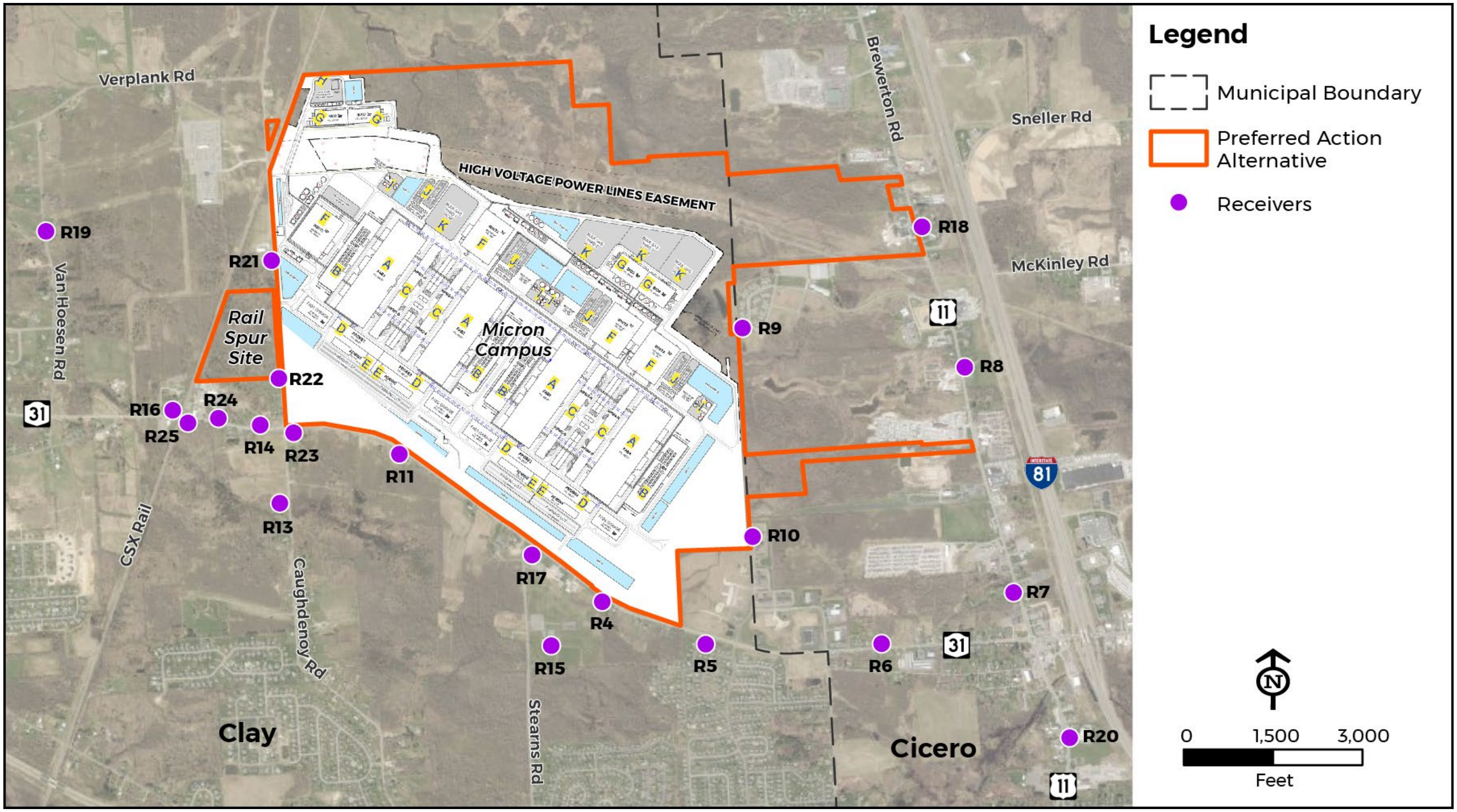
[1]RMS velocity in decibels (VdB) re: 1 micro-inch/second.
Source: FTA (2018, Table 6-3)

3.12.3.2 Study Areas

The study areas for this analysis include a construction and operations study area for the Micron Campus and Rail Spur Site, a construction and operations study area for the Childcare Site, and the larger traffic noise study area which is comprised of nine sub-areas around the Micron Campus and in communities where roadway improvements are proposed. The study areas are a function of the anticipated level of noise from a proposed noise source (e.g., construction or operation of the Micron Campus and Rail Spur Site). Thus, because traffic is the primary source of ambient noise around the Preferred Action Alternative and the ambient noise level along major roads is higher, some receptors along major roads are further from the Micron Campus than receptors not on major roads. Twenty-one receivers shown in Figure 3.12-3, represent approximately 130 receptors in the noise and vibration construction and operations study area for the Micron Campus and Rail Spur Site.[108] The construction and operations study area, as well as the traffic noise study area, for the Childcare Site is comprised of three receivers, as shown in Figure 3.12-4. Each receiver in the Childcare Site study area corresponds to one or two residential dwelling units. Where significant effects are reported to the receivers, the total number of affected sensitive receptors is reported. The traffic noise study area assessment is a function of traffic generated by the Preferred Action Alternative and is comprised of the roadway network and all proposed recommended roadway improvements presented in Section 3.11 (Transportation and Traffic) as Recommended Scenario C. The nine traffic noise study areas, which includes approximately 3,500 sensitive receivers assessed in the traffic model (including those in the construction and operations study area), are shown in Figure 3.12-5.

[108] Receivers in this study area are numbered R4 though R25, except R12. R1, R2, R3 and R12, which were initially included in the analysis, have been acquired by OCIDA and were eliminated from this analysis.

Figure 3.12-3 Micron Campus and Rail Spur Construction Site Construction and Operations Study Area



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Notes: R1, R2, R3 and R12 have been acquired by OCIDA and were eliminated from this analysis.

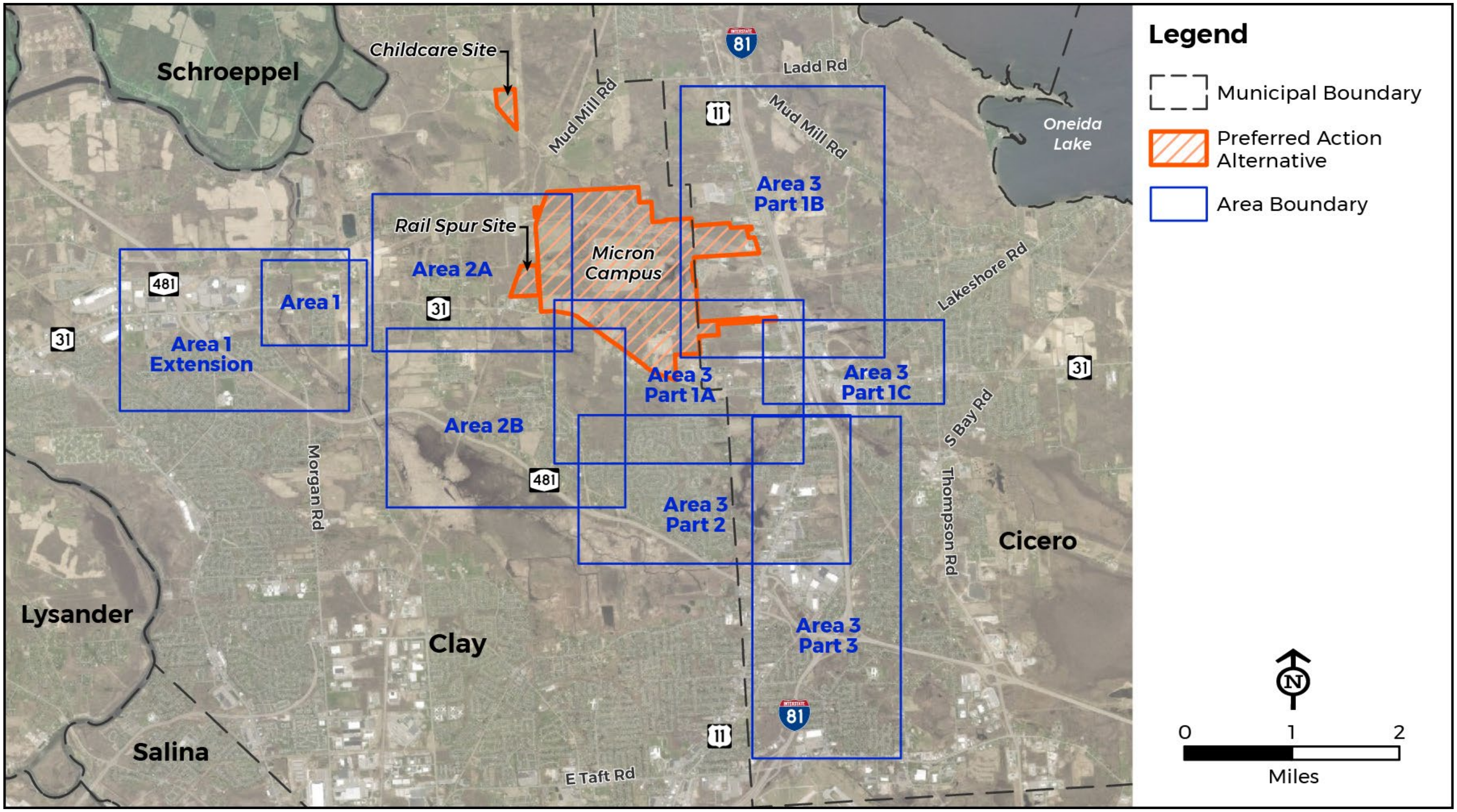
Some receivers represent more than one residential dwelling unit or other sensitive receiver.

Figure 3.12-4 Childcare Site -Construction and Operations Study Area and Traffic Noise Study Area

Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Note: Some receivers represent more than one residential dwelling unit or other receiver.

Figure 3.12-5 Traffic Noise Study Area



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Notes: Each Area shown in this Figure is shown in more detail in Appendix N, Section P-4.

Traffic noise study area for the Childcare Site is shown in Figure 3.12-4

3.12.3.3 Analysis Scenarios

Analysis scenarios modeled for the Preferred Action Alternative focused on reporting the worst-case effects for each receiver from each noise or vibration source (construction, operations and traffic). The worst-case scenarios are the peak periods, which is when the noise would be loudest or the vibration would be greatest. Detailed information on the peak periods is shown in Table 3.12-5.

Table 3.12-5 Noise and Vibration Peak Period Analysis Scenarios

Effect Type and Source	Analysis Scenario(s) - Maximum Peak Noise Exposure Periods
Noise from Construction of Rail Spur Site	January through May 2026
Noise from Construction of Micron Campus, including operation of Rail Spur Site	Fab 1: March through May 2026, August through September 2026, December 2026 through April 2027 Fab 2: January through February 2029 and April through August 2029 Fab 3: January through February 2034 and May through August 2034 Fab 4: December 2039 through March 2040 and June through September 2040
Vibration from Construction of Micron Campus	When vibratory pile installation would occur, during the first period listed for each Fab in the row above
Noise from Construction of Childcare Site	March through April 2028 for the childcare center; April 2030 through April 2031 healthcare center and recreation center (slightly lower peak noise period)
Noise from Operation of 4 fabs on Micron Campus, including related rail operations	All four fabs operating (2045)
Noise from Traffic	AM and PM peak traffic noise hour for Existing Baseline; No Action Alternative 2027, 2031 and 2041; and Preferred Action Alternative 2027, 2031 and 2041 (2031 and 2041 with and without mitigation)
Noise from Construction + Traffic	Same Periods as Noise from Construction of Micron Campus and using 2027 for Fab 1, 2031 traffic for Fab 2 and 2041 traffic for Fab 4 with 2035 traffic averaged from 2031 and 2041
Noise from Operations + Traffic	All four fabs operating (2045) + 2041 Traffic[1]
Construction + Operations + Traffic	Fabs 2 and 3 operating + Fab 4 under construction + 2041 Traffic

1 Although there is no traffic analysis for 2045 when all four fabs would be fully operational, this analysis uses the 2041 traffic analysis. As shown in Figure 2.1-6, there would be approximately 1,000 fewer Micron employees in 2041 than there would be in 2045 and the 2041 traffic analysis includes approximately 4,000 construction workers that would not be present in 2045. Therefore, using 2041 traffic in the 2045 operations analysis substantially overstates expected 2045 traffic.

For construction noise, the peak periods are a function of the number and type of equipment being used, the closeness of the activity to the receptor, and whether there are any shielding or obstructions between the construction activity and the receptor (e.g., an existing building, or a previously constructed building or parking garage). In general, the peak construction noise exposure conditions would occur when construction phases would overlap. As shown in Table 3.125, there would be three peak construction noise periods for Fab 1; two peak periods for Fabs 2, 3 and 4; one for the Rail Spur Site; and two for the Childcare Site. For construction vibration at the Micron Campus, the peak periods occur during vibratory pile installation, which is by far the greatest groundborne vibration generating activity proposed for construction (no pile installation is proposed for the Rail Spur Site or the Childcare Site). The peak noise period would be when all four fabs would be fully operational in 2045.

The peak traffic noise hours were based on the traffic analysis. Traffic analysis, and therefore traffic noise analysis, was conducted for the existing baseline, and for the three future years analyzed in the traffic analysis, 2027, 2031 and 2041. These years roughly correspond with peak activity for construction of Fab 1, Fab 2 and Fab 4. Traffic noise levels were predicted using the traffic characteristics that would yield the worst hourly traffic noise level on a regular basis. The worst hourly traffic noise effect occurs when truck volumes and vehicle speeds are greatest, typically when traffic is -free flowing, and roadways and intersections operate at or near LOS C conditions, which may not be the peak traffic hour. To be conservative, traffic noise was modeled for the morning and evening peak traffic hours when traffic volumes are the greatest, but instead of using the slower travel speed conditions predicted for the peak traffic hours in Section 3.11 (Transportation and Traffic), which may reduce traffic noise exposure, free flowing LOS C travel speeds were used). Table 3.12-5 summarizes the modeled noise and vibration analysis scenarios.

For construction combined with traffic, operation combined with traffic, or construction and operation combined with traffic, the data from the analyses described above were combined as shown in Table 3.12-5. Noise from operation combined with traffic was evaluated for 2045, when all four fabs would be operating. However, because there is no traffic analysis for 2045, therefore the analysis uses 2041 traffic scenario as a conservative proxy of peak hour traffic noise exposure conditions in 2045. As shown in Figure 2.1-6, there would be approximately 1,000 fewer Micron employees in 2041 than there would be in 2045 and the 2041 traffic analysis includes approximately 4,000 construction workers that would not be present in 2045. Therefore, using 2041 traffic in the 2045 operations analysis overstates expected 2045 traffic noise levels.

3.12.3.4 Methods for Predicting Noise and Vibration Effects

Worst case noise and vibration exposure for receivers in the construction and operations study areas were predicted for each analysis scenario using computer aided mathematical simulations referred to as models. Below is a summary of the prediction methods. For more information on modeling and prediction methods, see Appendix N, Section N1.

Construction and operation noise levels at each of the 21 receivers around the Micron Campus and Rail Spur Site and construction noise levels at each of the three receivers around the Childcare Site were predicted using the CadnaA Environmental Noise Prediction Model (Ver. 2024 MR 1). The CadnaA noise model is a Windows based graphical noise model that is accepted worldwide for the calculation, prediction, assessment and presentation of environmental noise. It is a sophisticated, three-dimensional model that implements methods for the propagation and prediction of outdoor noise levels in accordance with ISO Standard 9613. To identify significant effects, the predictions were compared to the noise significance criteria. Modeling of construction of the Micron Campus included operation of the Rail Spur Site, which would be used to deliver construction aggregate and other materials to and from the Micron Campus during construction. Inputs into the construction and operations noise modeling, including specific construction equipment and activities, are discussed in Appendix N, Section N1.1.

Construction vibration at the Micron Campus was predicted using the FTA construction analysis methodology. Vibration effects were compared to FTA significance criteria for construction (FTA, 2018, Section 7.2, "Construction Vibration Assessment"). In contrast to airborne vibration, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as trucks or other rubber tire vehicles to be perceptible, even in locations close to major roads. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or slamming of doors (FTA, 2018, p. 112). Of the construction activities proposed for the Preferred Action Alternative, vibratory pile installation could cause ground-borne vibration at levels that are substantially higher than any other source of vibration proposed, as illustrated in Table N-1-10 in Appendix N. Because there was no vibration effect predicted at the Micron Campus from pile installation, which is by far the greatest vibration-inducing construction activity proposed, and there is no pile installation proposed for construction equipment requirements of either the Rail Spur Site or the Childcare Site, therefore vibration levels were not estimated for the Rail Spur Site and Childcare Site. Inputs into the vibration modeling, including specific equipment and activities, are discussed in Appendix N, Section N-1.1.

Traffic noise was predicted for 3,500 receivers (including the 24 receivers in the construction and operations study areas) using the FHWA Traffic Noise Model Version 2.5 (TNM) and the procedures for traffic noise analysis in the NYSDOT TEM (FHWA, n.d.; NYSDOT, 2024b). Traffic noise was predicted for the existing condition, the No Action Alternative, and the Preferred Action Alternative based on existing traffic and predicted traffic reported in Section 3.11 (Transportation and Traffic). As noted in Section 3.12.3.3, traffic characteristics that would yield the worst hourly traffic noise effect on a regular basis (when truck volumes and vehicle speeds are greatest) were modeled. To identify significant effects, the predictions were compared to the noise significance criteria.

Combined noise levels from construction and traffic were calculated for the 21 receivers around Micron Campus and Rail Spur Site and for the three receivers around the Childcare Site. Combined noise levels from construction, operation and traffic were calculated for the 21 receivers around the Micron Campus and the Rail Spur Site. To identify significant effects, the predictions were compared to the noise significance criteria. Where a significant effect is projected to occur to a receiver, the number of receptors represented by the receiver that experience the significant effect is reported.

3.12.4 Affected Environment

This section describes the existing noise and vibration conditions in the study areas. The current construction and operations study area around the Micron Campus and Rail Spur Site is largely rural with scattered receptors along roadways and denser suburban-style residential development to the southeast, as shown in Figure 3.12-3. The construction and operations study area around the Childcare Site is predominantly rural with active agricultural uses around the site, and three residential receptors as shown in Figure 3.12-4. The primary source of ambient noise in these areas is traffic. There are no apparent potential sources of vibration in the construction and operations study areas aside from the rail line, where fewer than one train per day passes through the study area and no ground-borne vibration was observed.[109, 110]

Existing ambient noise in the construction and operations study areas was documented by conducting ambient noise monitoring. In May 2023 and April 2024, noise measurements were collected at 11 publicly accessible locations (Figure 3.12-6). A summary of the measured noise levels at the 11 monitoring locations is shown in Table 3.12-6. As indicated in Table 3.12-6, the monitoring locations were selected to represent the ambient noise conditions at similarly situated receptors around the Preferred Action Alternative, even if the receptors are not adjacent to the monitoring area. For example, Area D represents several receptor locations represented by receivers R9, R10 and R19 that are away from major roads, are exposed to less traffic noise, and therefore, could be expected to have the lowest existing ambient noise levels in the Micron Campus and Rail Spur Site construction and operations study area.

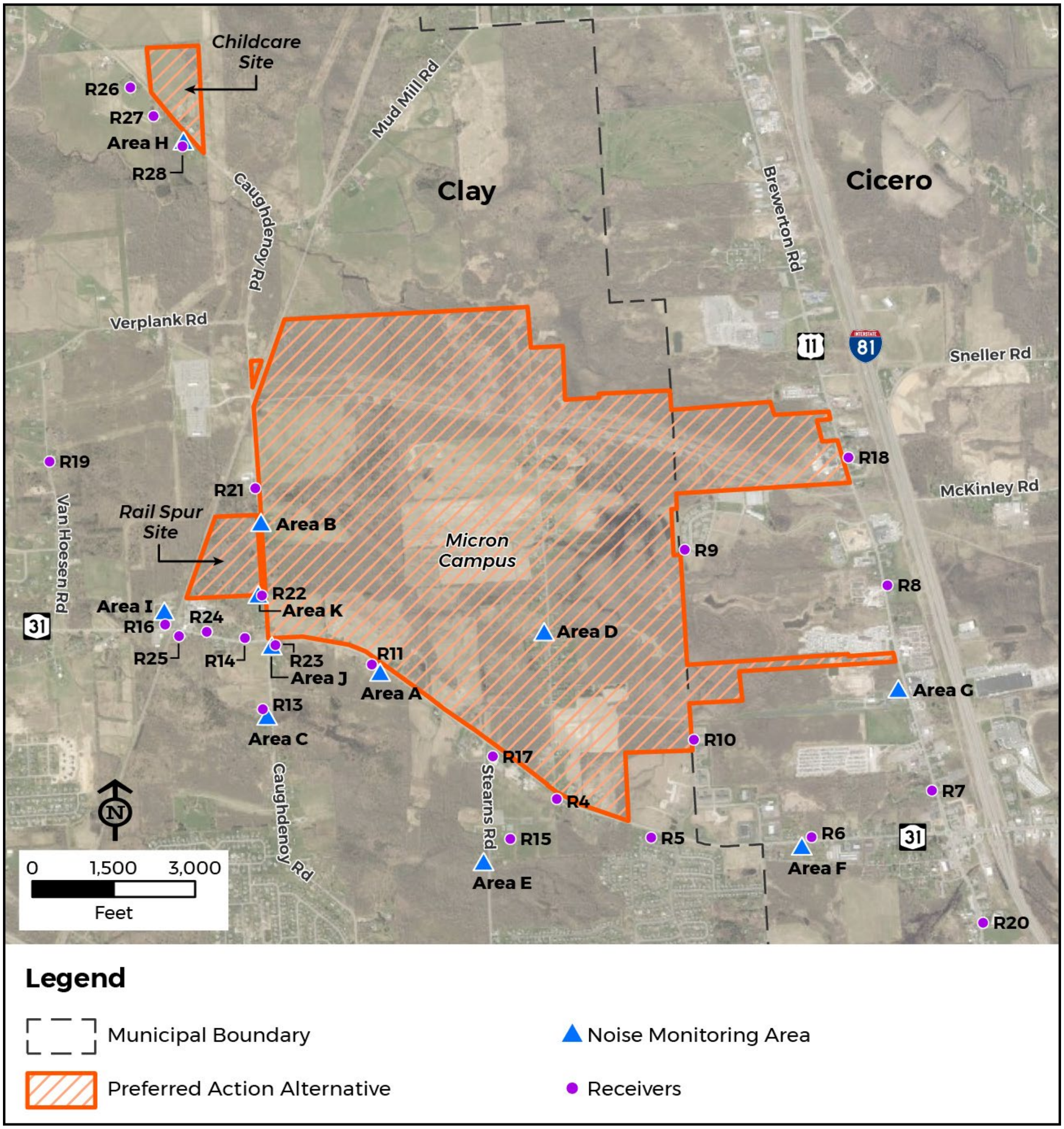
The existing ambient noise in the construction and operation study areas is generally consistent with moderately low ambient noise exposure levels typically found in rural communities. The highest ambient noise levels were measured at Areas I and K between 4 p.m. and 6 p.m., which was influenced by peak hour traffic and an observed CSX freight movement, including sounding the train horn at the Caughdenoy Road and NYS Route 31 grade crossings. The influence of traffic noise in the ambient environment is evident as the lowest levels were measured at Area D, away from any roads; low noise levels were also measured at Areas B, C, E and H, on Caughdenoy Road and Stearn Road more than 1,500 feet from NYS Route 31; and the highest ambient noise levels were measured at Areas A, F, and I on NYS Route 31 and Area G on U.S. Route 11. With the exception of Area D, measured ambient noise levels generally exceeded the Town of Clay lower (i.e. more stringent) level limits of 52 dBA during the day and 45 dBA at night (see Table 3.12-6 for more detail).

Area wide, existing traffic noise conditions were modeled for approximately 3,500 noise-sensitive receivers based on existing traffic reported in Section 3.11 (Transportation and Traffic). Table 3.12-7 summarizes the number of noise-sensitive receivers predicted by the model to be currently exposed to peak hour traffic noise levels above the 65 Leq dBA significance criterion, which includes a total of 139 receivers of which 110 are residences.

[109] Truck traffic is not known to cause vibration. All studies the highway agencies have done to assess the impact of traffic induced vibrations have shown that both measured and predicted vibration levels are less than any known criteria for structural damage to buildings. Regarding human annoyance, normal living activities within a building (e.g., closing doors, walking across floors, operating appliances) have been shown to create greater levels of vibration than highway traffic (FHWA, 2011, Appendix G "Highway Traffic-Induced Vibration").

[110] Train movements were observed and documented by WSP staff during the noise monitoring in 2023 and 2024.

Figure 3.12-6 Noise Measurement Monitoring Locations



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.
Note: See Table 3.12-6 for results of the monitoring.

Table 3.12-6 Existing Conditions: Summary of Measured Noise Levels at Monitoring Areas

Monitoring Area (See Figure 3.12-6)	Modeled Receiver Locations Represented by Monitoring Area 1, 2, 3	Land Use of Nearest Property	Nearest Property to Monitoring Area	Noise Metrics at Monitoring Areas (Levels in dBA)			
				Leq (1h) AM Traffic Peak Hour[4]	Leq (1h) PM Traffic Peak Hour[4]	Lay Average Daytime[5]	Light Average Nighttime[5]
Area A	R4, R11, R17	Residential & Place of Worship	5181 NYS Route 31, Clay	57	59	58	55
Area B	R21	Residential	8700 Caughdenoy Rd, Clay	54	54	54	48
Area C	R13	Residential	8468 Caughdenoy Rd, Clay	55	56	53	48
Area D	R9, R10, R19	Residential	8574 Burnet Rd, Clay	50	48	47	46
Area E	R15	Residential	8309 Stearns Rd, Clay	56	56	53	47
Area F	R5, R6	Residential	5634 W Seymour St, Cicero	60	60	59	54
Area G	R7, R8, R18, R20	Residential & Place of Worship	8428 Brewerton Rd, Cicero	60	62	60	57
Area H	R26, R27, R28	Residential	9125 Caughdenoy Rd, Brewerton	54	55	54	47
Area I	R16, R25	Place of Worship & Historic Park	Lutheran Church 4947 NYS Route 31, Clay	56	66	58	49
Area J	R14, R23, R24	Residential	8554 Caughdenoy Rd, Clay	57	65	59	52
Area K	R22	Residential	8617 Caughdenoy Rd, Clay	56	66	58	49

[1] Receivers R1, 2, 3, and 12 were located on properties that have since been acquired by OCIDA and were eliminated from this analysis.
[2] Measurements were collected by WSP at publicly accessible locations for 24 hours at each location in May 2023 or April 2024. The detailed data for each hour at each location can be found in Appendix N, Section N-1.
[3] These receiver locations exhibit similar noise sources to the monitoring area, even if they are not adjacent to the monitoring area. For example, the receivers represented by Area D are away from major roads, are not exposed to traffic noise and therefore, could be expected to have the lowest ambient noise levels in the Micron Campus and Rail Spur Site study area.
[4] Traffic noise peak periods are 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m..
[5] Daytime is 7 a.m. to 9 p.m. and Nighttime is 9 p.m. to 7 a.m. consistent with the Town of Clay Code.

Table 3.12-7 Modeled Existing Baseline Traffic Noise Exposure

Area (See Figure 3.12-5)	Number of Receivers Exposed to Predicted Traffic Noise Above 65 Leq dBA[1]	
	AM Peak Traffic Period	PM Peak Traffic Period
Area 1 Ext	41	34
Area 1	0	0
Area 2-A	4	4
Area 2-B	2	2
Area 3-1A	3	2
Area 3-1B	0	0
Area 3-1C	0	2
Area 3 Part 2	2	10
Area 3 Part 3	78	78
Childcare Site (see Figure 3.12-4)	0	0
TOTAL ALL AREAS	130	132
Total Residential (NAC B)	110	104
Total Other[2]	20	28

[1] The AM and PM noise exposed receivers overlap, so the total is the higher of either the AM or PM columns.
[2] Other includes medical facilities, parks, places of worship, recreation areas, schools, crossings, offices, restaurants, hotels and motels.
Calculated existing noise levels for all approximately 3,500 receivers can be found in Appendix N, Section N-4.

3.12.5 Environmental Consequences

This section discusses the noise and vibration effect findings of the No Action and Preferred Action Alternatives. The noise data presented in this analysis as Leq dBA is the one-hour Leq dBA, unless otherwise noted (e.g. as Daytime Average Leq dBA).

3.12.5.1 No Action Alternative

Under the No Action Alternative, the Preferred Action Alternative would not occur. As described in Section 2.2.1, the Micron Campus would remain vacant until another suitable development proposal occurs, and the Childcare Site and Rail Spur Site would remain in their current condition as vacant properties. Potential future land use changes in the study area would be consistent with existing development patterns and would not be expected to significantly affect noise levels. There would be no change in the vibration environment.

Other anticipated development and roadway improvements not associated with the Preferred Action Alternative would generate changes in traffic movements, as described in Section 3.11 (Transportation and Traffic). This would result in 214 receivers in 2027 (185 residential and 29 non-residential), 317 receivers (281 residential and 36 non-residential) in 2031 and by 2041, 321 receivers (289 residential and 32 non-residential) experiencing a predicted traffic noise increase above the significance thresholds. Calculated No-Action noise levels for all approximately 3,500 receivers can be found in Appendix N, Section N-4.

3.12.5.2 Preferred Action Alternative

This section describes the noise and vibration effects of the Preferred Action Alternative by the source of the effect (e.g. construction, operations, and traffic) and then evaluates the combined construction, operation, and traffic noise of the Preferred Action Alternative.

Construction of the Micron Campus

The four fabs on the Micron Campus would be constructed sequentially in four separate phases of approximately three years each. Construction of the four fabs would be spread over an approximately 16-year construction period. For analysis purposes construction noise for the Micron Campus includes operational noise for the Rail Spur. Fab 1 would be constructed first and construction of Fab 2 would follow immediately after completion of Fab 1. Construction of Fab 3 would start two to three years after completion of Fab 2 and construction of Fab 4 would start three years after completion of Fab 3. Micron proposes that construction activities on the Micron Campus would occur between 6:00 a.m. and 10:00 p.m. daily. However, construction hours would be required to comply with the Town of Clay Code, which prohibits noise associated with demolition and construction between 7:00 p.m. and 7:00 a.m. on weekdays, before 8:00 a.m. and after 5:00 p.m. on Saturday and any time on Sunday.

Construction would be phased over the Micron Campus from west to east (Fab 1 to Fab 4) and noise effects would follow the same pattern, with noise or vibration levels dependent on the proximity of receivers to proposed construction activity. The Rail Spur Site would operate during construction of each fab. Activity at the Rail Spur Site would include arrival of up to 60 rail cars moving and unloading of the aggregate from the 60 rail cars to a storage pile on the site over 16 hours, and removal of the rail cars at the end of the day. The conveyor would run for 16 hours to transport aggregate over Caughdenoy Road to the Micron Campus. Equipment that would be used during operation of the Rail Spur Site and assumptions about its noise levels are shown in Appendix N, Table N-1-7.

Vibratory pile installation of approximately 6,300 piers per Fab (25,200 total) is the primary source of vibration from construction and would occur only at the Micron Campus. Other sources of vibration are shown in Table N-1-5 in Appendix N.

For each of the four fabs, the noise was predicted for each of the 21 receivers in the Micron Campus and Rail Spur Site construction and operation study area during up to three peak noise periods of three- to five months, some of which would overlap for more than one Fab (Table 3.12-5). During other periods of construction, noise levels would be lower. As illustrated in Table 3.12-8 and Figure 3.12-7, while predicted noise levels at three receivers (R9, R10, and R21) would exceed one threshold for a significant effect, with predicted increases over ambient noise level of 7 dBA to 12 dBA, no construction noise levels over 65 Leq dBA were predicted for any receivers. R9 and R10 would experience an increase of 12 dBA during construction of Fab 4 and R9 would also experience an increase of 8 dBA during construction of Fab 3. R21 would experience an increase of 7 dBA during construction of Fab 1.

R9 represents the Cottages at Garden Grove, a 152 -bed nursing home, half of which would be affected by construction of Fabs 3 and 4, with predicted noise increases of 8 and 12 dBA, respectively. The other buildings in the complex would be shielded by the buildings closest to the Micron Campus. These effects would occur during two periods totaling six months in 2034 (Fab 3) and one period each of four months during the winter of 2039-2040 and the summer of 2040 from Fab 4. R10 represents Tocco Villagio, a 72-unit apartment complex, with approximately 200 additional future planned apartments; one building with 18 units would experience noise level increases from construction of Fab 4 of up to 9 dBA during one period each of 4 months in the winter of 2039-2040 and the summer of 2040. The northernmost building at Tocco Villagio would provide some shielding for the other buildings in the Tocco Villagio complex so that they would experience noise levels below the significance threshold.

One residence on Caughdenoy Road represented by R21 would experience a predicted noise level increase of 7 dBA from construction of Fab 1 during three periods of two to five months between March 2026 and April 2027. There would not be significant effects at the other 18 receivers in the Micron Campus and Rail Spur Site Study Area. Detailed Micron Campus construction noise predictions for all 21 receivers by Fab can be found in Appendix N, Table N-3-3.

Operation of the Rail Spur Site would be subject to the requirements of the Town of Clay code for Industrial Zones, which limit noise at the property line to 70 decibels between 6:00 a.m. and 10:00 p.m., or 60 decibels between 10:00 p.m. and 6:00 a.m. Based on the proximity of R21 and R22 to the Rail Spur Site and the predicted noise levels over 60 dBA at these receivers during construction of Fab 1, it is likely that noise barriers would be required to meet the Town Code.

For each of the four fabs, vibration was modeled at three locations for each of the 21 receivers, and results were compared to the FTA criteria for human annoyance, (exceedance of 72 VdB), and for structural damage to buildings. The predicted vibration levels at the 21 receivers would range from 23 VdB to 50 VdB and from 0.0 PPV to 0.002 PPV. This is well below the 72 VdB threshold for annoyance to humans and the thresholds for damage to buildings that are shown in Table 3.12-4. Detailed vibration exposure predictions from construction of each Fab can be found in Appendix N, Tables N-1-10 through N-1-13.

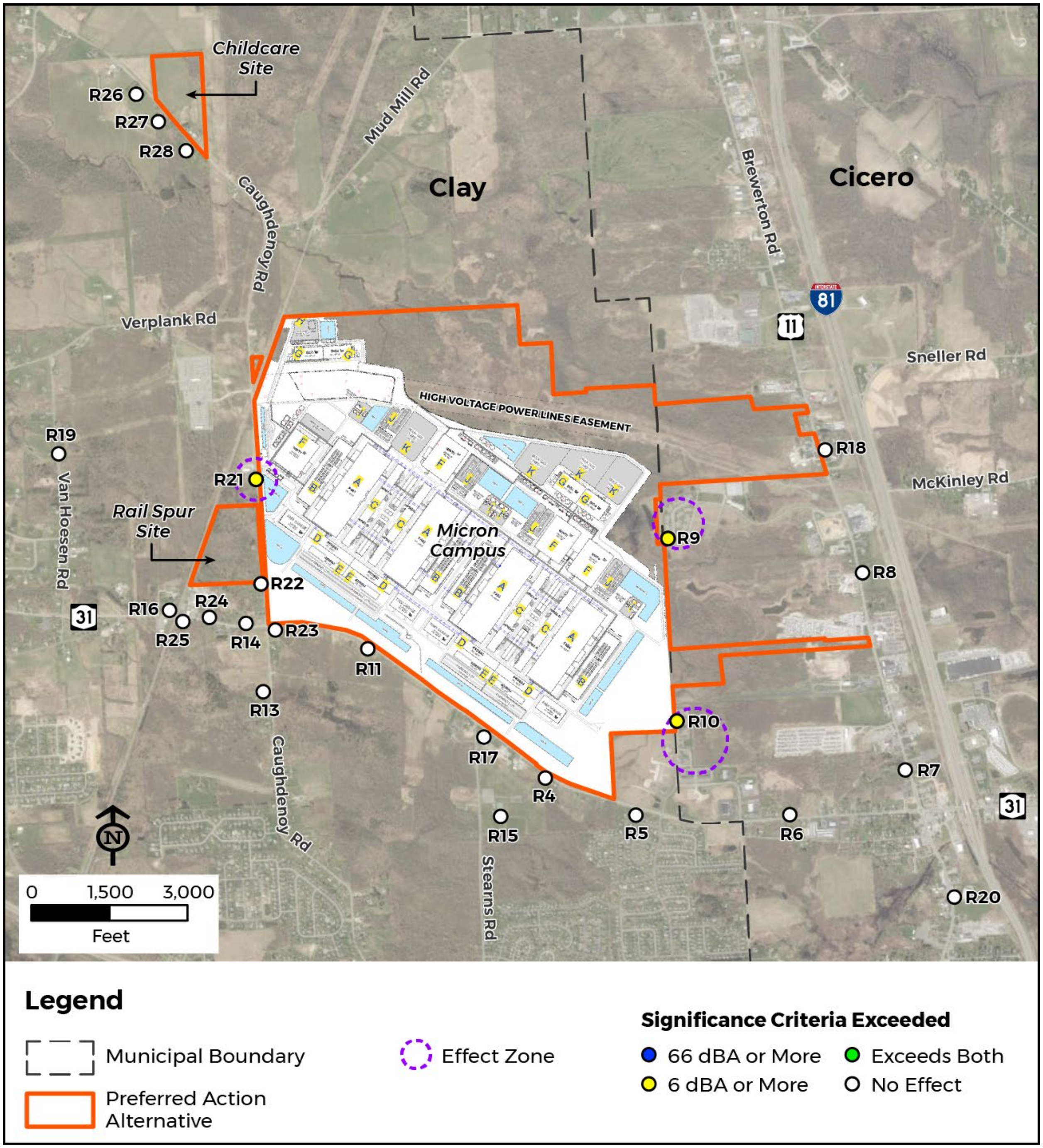
Table 3.12-8 Summary of Predicted Noise Exposure from Construction of Micron Campus

Receiver (Number Receptors Significantly Effected)[1]	Existing Average (Leq dBA)	Predicted Peak Period (Leq dBA)	Predicted Increase Over Existing (Leq dBA)	Construction Periods with Significant Effect	Significant Effect		Duration Maximum Peak Construction Noise Exposure
					Above 65 Leq dB A	Increase 6 dBA or More	
R4	58	56-60	0-2	None	No	No	None
R5	59	52-58	None	None	No	No	None
R6	59	55-59	None	None	No	No	None
R7	60	52-56	None	None	No	No	None
R8	60	54-55	None	None	No	No	None
R9 (25)	47	41-59	**8 and 12***	**Fabs 3 & 4***	No	**Yes***	Fab 3: January through February 2034 and May through August 2034 Fab 4: December 2039 through March 2040 and June through September 2040
R10 (18)	47	40-59	**12***	**Fab 4***	No	**Yes***	Fab 4: December 2039 through March 2040 and June through September 2040
R11	58	57-63	1-5	None	No	No	None
R13	53	49-52	None	None	No	No	None
R14	59	59-60	None	None	No	No	None
R15	53	42-54	0-1	None	No	No	None
R16	58	58-59	0-1	None	No	No	None
R17	58	52-60	0-2	None	No	No	None
R18	60	54-56	None	None	No	No	None

Receiver (Number Receptors Significantly Effected)[1]	Existing Average (Leq dBA)	Predicted Peak Period (Leq dBA)	Predicted Increase Over Existing (Leq dBA)	Construction Periods with Significant Effect	Significant Effect		Duration Maximum Peak Construction Noise Exposure
					Above 65 Leq dB A	Increase 6 dBA or More	
R19	47	45-47	None	None	No	No	None
R20	60	34-41	None	None	No	No	None
R21 (1)	54	54-61	0-7*	**Fab 1***	No	**Yes***	Fab 1: March through May 2026, August through September 2026, December 2026 through April 2027
R22 (4)	58	59-62	1-4	None	No	No	None
R23	59	58	None	None	No	No	None
R24	59	59	None	None	No	No	None
R25	58	59	0-1	None	No	No	None

[1] R1, R2, R3 and R12 have been acquired by OCIDA and were eliminated from this analysis.
Yellow and **Bold** (*) indicate significant effect.
Detailed predicted noise exposure for construction of each Fab for each receiver can be found Appendix N, Table N-3-3.

Figure 3.12-7 Predicted Noise Effects from Construction of Micron Campus



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Note: R1, R2, R3 and R12 have been acquired by OCIDA and were eliminated from this analysis.

Construction of the Rail Spur Site

Construction of the Rail Spur Site, including rail car offloading facilities and an aggregate conveyor, would occur over eight months. Micron proposes that construction activities would occur between 6:00 a.m. and 10:00 p.m. daily. Noise sources would include construction equipment shown in Table N-1-5 in Appendix N. However, construction hours would be required to comply with the Town of Clay Code, which prohibits noise associated with demolition and construction activities between 7:00 p.m. and 7:00 a.m. on weekdays, before 8:00 a.m. and after 5:00 p.m. on Saturday and any time on Sunday.

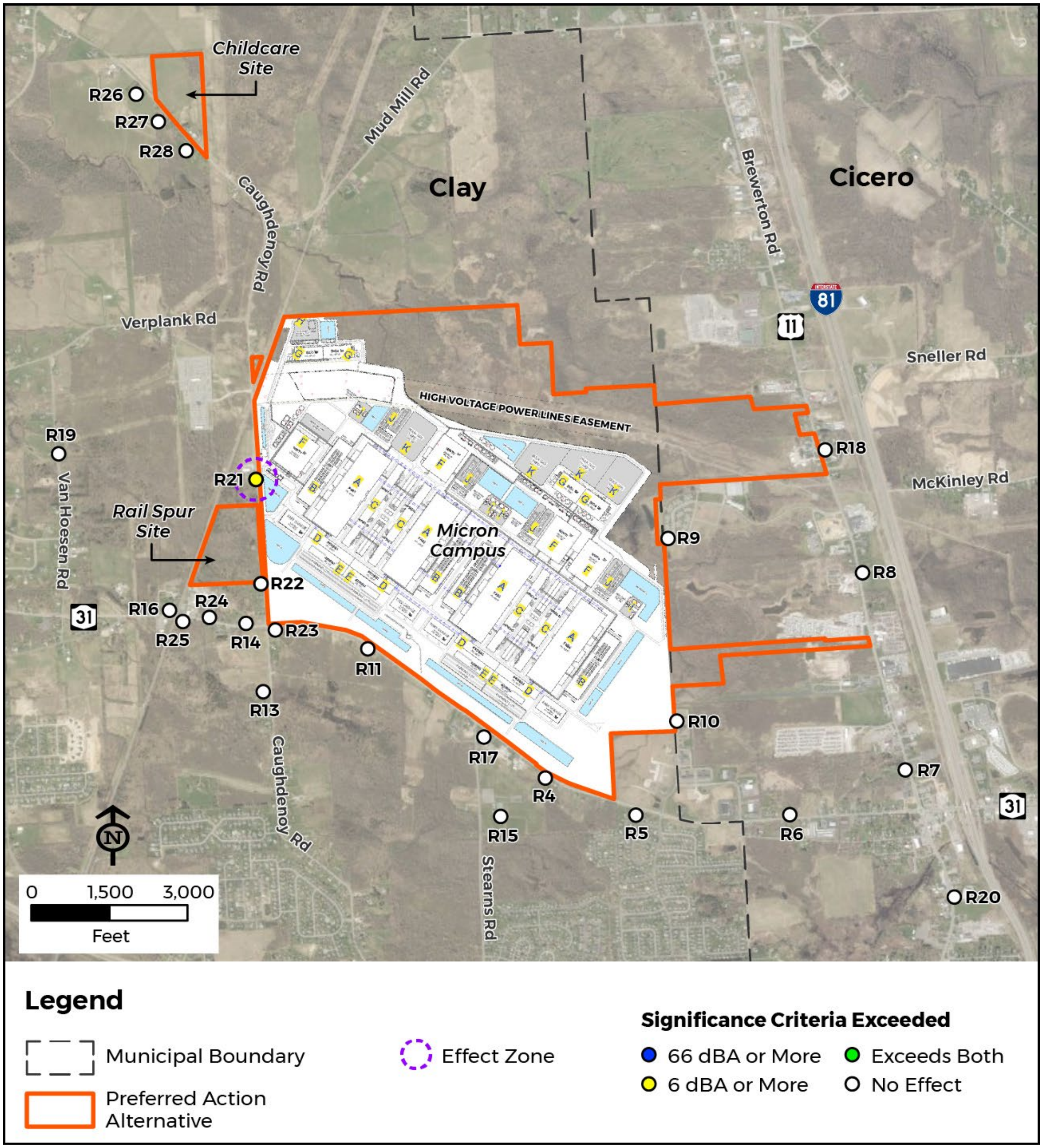
The peak (loudest) predicted construction noise would occur from January through April 2026. During this period, of the two receivers closest to the Rail Spur Site (R21, R22), noise levels would exceed one threshold for a significant effect at one receiver, as shown in Table 3.12-9 and Figure 3.12-8. Table N-1-5 in Appendix N shows the construction equipment sources of noise. The noise level at this receiver, R21, which is a residential receptor, is predicted to be 62 Leq dBA with a predicted increase of 8 dBA. As shown in Table 3.12-9, R22 would experience a noise level increase of 3 dBA, below the level of significance. The remaining 19 receivers in the Micron Campus and Rail Spur Site study area would experience no increase in noise exposure as a result of the Rail Spur construction as indicated in Appendix N, Table N-3-1.

Table 3.12-9 Predicted Noise Effect from Construction of Rail Spur Site

Receiver[1]	Existing Daytime Average (Leq dBA)	Predicted Peak Period Average (Leq dBA)	Predicted Increase over Existing (dBA)	Significant Effect	
				Over 65 Leq dBA	Increase of 6 dBA or More
R21	54	62	**8***	No	**Yes***
R22	58	61	3	No	No

Yellow and **Bold** (*) indicate significant effect.

Figure 3.12-8 Predicted Noise Effects from Construction of the Rail Spur Site



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Note: Receivers R1, R2, R 3, and R12 have been acquired by OCIDA and were eliminated from this analysis.

Construction of the Childcare Site

Construction of the Childcare Site would occur over three years beginning in July 2026. The peak (loudest) construction noise would occur from March through April 2028 when construction noise increases would exceed the threshold for significance at R26 and R27, as shown in Table 3.12-10. Table N-1-6 in Appendix N shows the construction equipment sources of noise. Slightly lower noise levels that exceed the threshold would occur from April 2030 through April 2031 due to construction of the healthcare and recreation facilities. Since the Childcare Center would be operational at this time and is a sensitive receptor that would be closer than the existing receptors across the road, it would experience a similar significant noise increase and significant noise level over 65 Leq dBA.

Table 3.12-10 Predicted Noise Exposure from Construction of Childcare Site

Receiver (Receptors)	Existing Measured Daytime Average Leq dBA	2027 Construction	
		Construction Noise Level (Daytime) Leq dBA	Noise Increase dBA
R26 (2)	54	61	**7***
R27 (1)	54	63	**9***
R28 (1)	54	55	1

Worst case construction noise levels, a three-month period between March 2028 and April 2028
Yellow and **Bold** (*) indicate significant effect.

Operation of the Micron Campus

Operation of the Micron Campus would ramp up as each Fab is completed and ready for operations. Noise from operation of the facility would be caused by outdoor equipment and activity listed in Table N-1-9 in Appendix N, such as air handling units, generator exhaust and cooling towers, as well as activities at the Rail Spur Site. Equipment and supplies would be transported to the Micron Campus, and Micron would ship products from the Rail Spur Site via approximately one daily daytime rail round trip. By 2045, all four fabs would be fully operational. The noise levels generated by Micron Campus operational activities would occur 24 hours a day, 7 days a week at a generally steady noise level.

The predicted noise level at each receiver when all four fabs are operating is shown in Table 3.12-11. As indicated in Table 3.12-11 and Figure 3.12-9, while none of the 21 receivers would experience noise levels above 65 Leq dBA, R9, R10 and R22 would experience an increase of 6 dBA above existing nighttime noise levels and R21 would experience an increase of 7 dBA above existing nighttime noise levels. Noise exposure predicted for R9 and R10 would be 6 dBA, at the threshold for significance. R9 represents the Cottages at Garden Grove, a nursing home where 75 beds (25 dwelling unit equivalents) in the rear, Micron-facing buildings would experience this increase. R10 represents Tocco Villagio apartments, where 18 dwelling units would experience this increase. R21 represents one residence, and R22 represents four residences on Caughdenoy Road. There would not be significant effects at the other 17 receivers in the Micron Campus and Rail Spur Site Study Area. Operation of the Micron Campus would comply with Town of Clay noise limits for the Industrial 2 zone.

Table 3.12-11 Predicted Noise Exposure from Operation of Micron Campus

Receivers[1] (Number Receptors Significantly Effected)	Existing Average Noise Levels		Predicted 4 Fab Operations Leq dBA	Predicted Increase of 6 dBA or More		Significant Effect[2]	
	Daytime Leqday dBA	Nighttime Leqnight dBA		Daytime Change	Nighttime Change	Daytime	Nighttime
R4	58	55	52	0	0	No	No
R5	59	54	48	0	0	No	No
R6	59	54	42	0	0	No	No
R7	60	57	38	0	0	No	No
R8	60	57	42	0	0	No	No
R9 (25)	47	46	52	5	**6***	No	**Yes***
R10 (18)	47	46	52	5	**6***	No	**Yes***
R11	58	55	54	0	0	No	No
R13	53	55	49	0	0	No	No
R14	59	52	53	0	1	No	No
R15	53	47	49	0	2	No	No
R16	58	49	54	0	5	No	No
R17	58	55	52	0	0	No	No
R18	60	57	42	0	0	No	No
R19	47	46	45	0	0	No	No
R20	60	57	34	0	0	No	No
R21 (1)	54	48	55	1	**7***	No	**Yes***
R22 (4)	58	49	55	0	**6***	No	**Yes***
R23	59	52	53	0	1	No	No

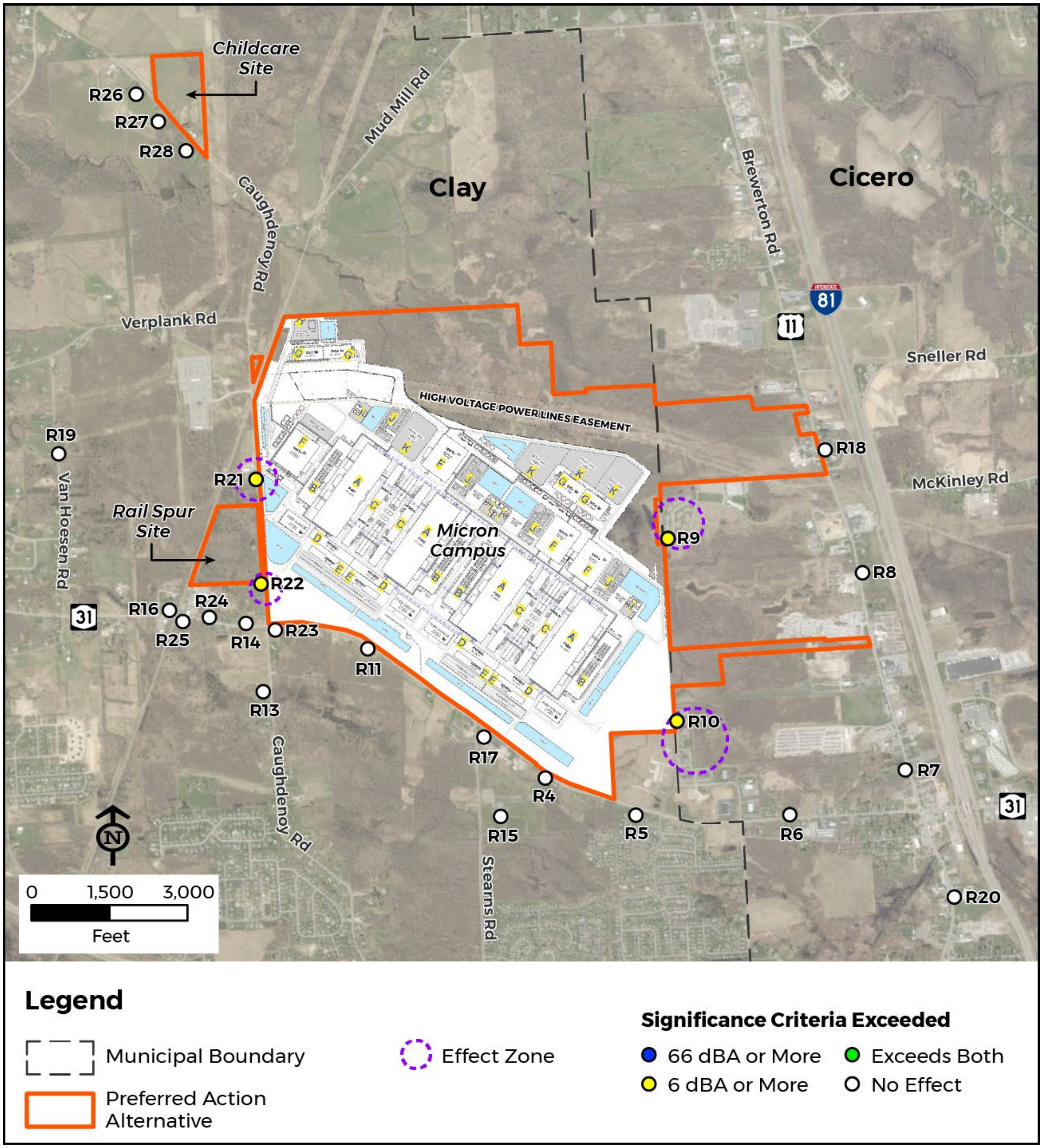
R24	59	52	54	0	2	No	No
R25	58	49	54	0	0	No	No

[1] R1, R2, R3 and R12 have been acquired by OCIDA and were eliminated from this analysis.

[2] There would be no noise levels above 65 Leq dBA.

Yellow and **Bold** (*) indicate significant effect

Figure 3.12-9 Predicted Noise Effects from Operation of Micron Campus



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.

Note: R1, R2, R3 and R12 have been acquired by OCIDA and were eliminated from this analysis.

Operation of Childcare Site

The operation of the Childcare Site is not expected to generate significant noise, because outdoor equipment would be limited to air handling units such as cooling, heating and ventilation equipment. As shown in Table N-1-9 in Appendix N, the sound power level for rooftop air handling units is 60 dBA, which is below the level of significance; therefore, it is expected that there would be no significant noise effects from operation of the Childcare Site. Shielding of the air handling units may be required to meet the Town of Clay code requirement of 52 dBA during the day and 45 dBA at night.

Traffic Noise

Traffic is a dominant source of noise in urban and rural environments. Generally, the loudness of traffic noise is increased by higher traffic volume flows, higher travel speeds, and more so with greater numbers of heavy-duty trucks that operate using diesel engines. Additionally, the loudness of traffic noise can also be increased by defective mufflers, or steep grade inclines, that cause heavy laboring of motor vehicle engines.

Traffic noise effects were evaluated using the same base years as the traffic study – 2027, 2031 and 2041. Year 2027 represents the Fab 1 peak construction activity at the Micron Campus in combination with peak road traffic for Fab 1, Year 2031 represents the peak of traffic activity associated with two fabrication facilities consisting of construction of Fab 2 and operation of Fab 1, and Year 2041 represents the peak traffic activity associated with the construction of Fab 4 and traffic associated with operations of the full buildout of four fabrication facilities. In each of these analysis years, traffic noise exposure was modeled for nearly 3,500 receivers in the traffic study area, including the 28 receivers in the construction and operations study areas. The 3,500 receivers represent a total of approximately 6,400 dwelling unit equivalents[111] The traffic noise analysis was conducted using traffic characteristics that would yield the worst (loudest) hourly traffic noise effect on a regular basis, as described in Section 3.12.3.1. Detailed information on the traffic noise exposure of all approximately 3,500 receivers can be found in Appendix N, Section N4 and detailed mapping showing the location of each modeled receiver is in Section N5 of Appendix N.

Table 3.12-12 shows the total predicted number of receivers in each analysis year that would be above the significance thresholds of an increase of 6 dBA or more over the existing level or a predicted noise level above 65 Leq dBA from traffic noise. It also shows the percent change in the number of receptors affected by a significant impact each year when compared to the No Action Alternative for each of the Traffic Noise Modeling (TNM) areas shown in Figure 3.12-5.

In 2027 and 2031, when compared to the No Action Alternative, the Preferred Action Alternative would result in an increase of 30 to 58 receivers (17 to 22 percent) that would be exposed to a significant traffic noise effect during the AM peak period, with slightly lower changes occurring in the PM peak traffic noise hours. In 2027 and 2031 during the PM peak traffic noise hours, most of the additional significantly impacted receivers would be concentrated in the Area 1 Extension sub-area, west of the Micron Campus around the NYS Route 481/NYS Route 31

[111] Dwelling unit equivalents are units of measure that standardize all land use categories (housing, retail, office, houses of worship, parks, etc.) to the level of traffic created by one single-family dwelling unit. Thus, for this analysis, each receiver represents an average of 1.8 dwelling unit equivalents (6400/3500= 1.8).

interchange (see Figure 3.12-5). In 2031, during the AM peak traffic hour, the additional significantly exposed receivers would be concentrated in Area 2B, south of the Micron Campus around Caughdenoy Road, south of NYS Route 31 and north of NYS Route 481.

In 2041, when compared to the No Action Alternative, the Preferred Action Alternative would result in an additional 276 to 305 receivers that would be exposed to significant traffic noise effects during the AM and PM peak traffic noise hours, respectively which represents a doubling (100 precent) increase in the total number of reported effects over the No Action Alternative. This increase would be concentrated in three areas: Area 2B and Area 2A directly west and south of the Micron Campus, respectively, and Area 3 Part 2, south of the Micron Campus and north of NYS Route 481.

In 2027 and 2031 during the PM peak traffic noise hours, most of the additional significantly effected receivers would be concentrated in the Area 1 Extension subarea, west of the Micron Campus around the NYS Route 481/NYS Route 31 interchange (see Figure 3.12-5). In 2031, during the AM peak traffic hour, the additional significantly exposed receivers would be concentrated in Area 2B, south of the Micron Campus around Caughdenoy Road, south of NYS Route 31 and north of NYS Route 481.

Table 3.12-12 Preferred Action Alternative: Summary of Predicted Traffic Noise Exposure Above Significance Threshold[1]

Area (See Figure 3.12-5)	2027 Receivers Above Significance Threshold[1]			2031 Receivers Above Significance Threshold[1]			2041 Receivers Above Significance Threshold[1]		
	No Action	Preferred Action Alternative	Change from No Action	No Action	Preferred Action Alternative	Change from No Action	No Action	Preferred Action Alternative	Change from No Action
AM Peak Traffic Noise Hour									
Area 1 Ext	54	60	6	93	68	-25	60	76	16
Area 1	2	2	0	6	10	4	9	10	1
Area 2-A	7	14	7	10	36	26	13	79	66
Area 2-B	2	11	9	2	70	68	7	89	82
Area 3-1A	4	5	1	5	7	2	7	53	46
Area 3-1B	0	0	0	0	0	0	0	2	2
Area 3-1C	7	4	-3	7	5	-2	9	7	-2
Area 3 Part 2	5	6	1	33	14	-19	53	90	37
Area 3 Part 3	97	106	9	102	106	4	104	132	28
Total Number	**178**	**208**	**30**	**258**	**316**	**58**	**262**	**538**	**276**
Total % Change from No Action			**17%**			**22%**			**105%**
Total Number Residential	158	188	30	238	289	51	233	486	253
Total Number Other[4]	20	20	0	20	27	7	29	52	23
PM Peak Traffic Noise Hour									
Area 1 Ext	58	91	33	92	166	74	112	102	-10
Area 1	3	8	5	14	12	-2	13	24	11
Area 2-A	13	10	-3	22	15	-7	21	78	57
Area 2-B	4	3	-1	18	4	-14	6	92	86
Area 3-1A	6	5	-1	6	7	1	8	52	44
Area 3-1B	0	0	0	13	0	-13	0	13	13
Area 3-1C	4	11	7	4	12	8	9	9	0
Area 3 Part 2	11	12	1	26	36	10	27	127	100
Area 3 Part 3	115	110	-5	122	117	-5	125	129	4
Total Number	**214**	**250**	**36**	**317**	**369**	**52**	**321**	**626**	**305**
Total % Change from No Action			**17%**			**16%**			**95%**
Total Number Residential	185	222	8	281	336	55	289	572	283
Total Number Other[4]	29	28	-1	36	33	-3	32	54	22

[1]The significance thresholds are an increase of 6 dBA or more over the existing level or a noise level above 65 Leq dBA. Exceeding either threshold is a significant effect; [2] Other sensitive receptors in the study areas include medical facilities, public parks, places of worship, recreation areas, schools, crossings, offices, restaurants, hotels and motels; Predicted noise levels for each approximately 3,500 receivers are reported in Appendix N, Section N-4 and detailed mapping showing the location of each receiver is in Section N-5.

Combined Traffic, Construction and Operations Noise

This section reports the combined effect from the Preferred Action Alternative to each receiver in the construction and operation study areas from the combined effect of construction, operations and traffic. Table 3.12-13 provides a summary of this information and reports the number of noise-sensitive receptors represented by each receiver.

Noise from construction and/or operation of the Rail Spur Site, the Micron Campus and Childcare Site (without traffic) would exceed one or both the thresholds for significant adverse effects at six of the 24 receivers in the construction and operations study areas. The six receivers represent 51 of the 138 individual sensitive receptors (receptors) in the construction and operations study areas. All the significantly affected receptors are residences. R9 and R10 are parts of an apartment complex and nursing home, respectively, that abut the eastern side of the proposed Micron Campus. R21 and R22 represent five residences north and south of the Rail Spur Site west of Caughdenoy Road. R26 and 27 represent three residences across the street from the Childcare Site.

Table 3.12-13 Summary of Predicted Significant Construction and Operation Effects of the Preferred Action Alternative[1]

Receiver	Receptors[3]	Rail Spur Site Construction		Micron Campus Construction[2]		Micron Campus Operations		Childcare Site Construction	
		Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase[4] (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)
R9	25	-	-	-	**8 & 12**	-	**6**	-	-
R10	18	-	-	-	**12**	-	**6**	-	-
R21	1	**-**	**8**	-	**7**	-	**7**	-	-
R22	4	**-**	**-**	-	**-**	-	**6**	-	-
R26	2	-	-	-	-	-	-	-	**7**
R27	1	--	-	-	-	-	-	-	**9**
Total Receptors	51	0	1	-	44	-	48	-	3

[1] Only effects that exceed the threshold for significant effect of a noise level of 65 Leq dBA or an increase of 6 dBA are shown.
[2] Includes operation of the Rail Spur Site.
[3] R9 represents a 152-bed nursing home; six buildings with 76 beds are affected and are considered 25 dwelling unit equivalents. R10 is a 72-unit apartment complex; one 18-unit building would be exposed to significant effects. R21, R22, R26 and R27 represent a total of eight single family homes.
[4] For R9, during construction of Fabs 3 and 4; for R10, during construction of Fab 4 and for R21, during construction of Fab 1.

The combined effects of predicted traffic and construction noise during the 16-year construction period of the four fabs on the Micron Campus would have a significant effect on every receiver except R19, resulting in a total of 132 receptors adversely affected, including a nursing home, three places of worship and a park. All the affected receivers would experience predicted increases in noise levels ranging from 6 to 12 dBA. All receivers except R9, R10, R13, R15, R21 and R22 would experience combined predicted noise levels above 65 Leq dBA, ranging from 66 to 69 Leq dBA. The significant effects are almost entirely attributable to predicted higher traffic noise levels (from predicted higher traffic volumes) along NYS Route 31 and U.S. Route 11. For details on the portions of the noise attributable to construction and to traffic, see Table N-3-4 in Appendix N.

The combined effects of noise from construction of the Micron Campus plus traffic noise would occur during up to three periods of three to five consecutive months over four years (for one fab), to as many as twelve periods of three to five consecutive months over 16 years (for four fabs), as summarized in Table 3.12-5. The frequency of these peak noise events is a direct result of more people working in this relatively confined area as more fabs are built and occupied by Micron employees. In summary:

- Eleven receivers (representing 61 receptors) would experience significant noise effects during up to twelve peak noise periods over 16 years.
- Six receivers (representing 25 receptors) would experience significant noise effects during up to nine peak noise periods over 12 years.
- One receiver (representing 25 receptors) would experience significant noise effects during up to six peak noise periods over 8 years.
- Two receivers (representing 19 receptors) would experience significant noise effects during up to three peak noise periods over 4 years.

The combined noise effects of construction of Fab 4 and operation of Fabs 1-3 plus traffic at the Micron Campus would represent worst case effects given the overlap of operations and construction as well as this being the time-period with the highest volume of traffic. During this time period, the effects would be similar to those summarized above for construction and traffic; only R19 would not be significantly affected (Table 3.12-14). All the affected receivers would experience significant noise level increases of 6 dBA or more. Six receivers would experience increases of 6 to 8 dBA, eight receivers would experience increases of 9 to 11 dBA and six receivers would experience increases of 12 to 15 dBA. The receivers that would experience combined predicted noise levels above 65 Leq dBA are the same receivers identified for construction plus traffic, although the upper bound noise exposure level would increase reaching as high as 73 Leq dBA at R25.

The combined noise effects of predicted traffic and construction of the Rail Spur Site would have an adverse effect on eight receivers, as shown in Table 3.12-14. The eight receivers, representing a total of 18 receptors, would be exposed to combined noise from traffic and construction that exceeds the 6 dBA increase significance criteria, with increases that would range from 6 to 11 dBA. Four receivers (R14, R23, R24, and R25) would experience predicted effects that exceed both noise criteria, with a predicted noise level ranging from 66 to 70 Leq dBA.

Table 3.12-14 Summary of Noise Exposure and Increases Over Ambient Levels of the Preferred Action Alternative

Receiver [2]	Number of Receptors Represented by Receiver[3]	Existing Average (Leq dBA)	Summary of Predicted Noise Exposure (Leq dBA) and Increase in Noise Level (dBA) from the Preferred Action Alternative[1]																	
			Rail Spur Site Construction		Micron Campus Construction[4]		Micron Campus Operation (Nighttime)[5]		Rail Spur Site Construction + Traffic		Micron Campus Construction[4] + Daytime Traffic[6]		Micron Campus Operation[4] + Daytime Traffic		Micron Campus Construction[4] + Operation[4] + Traffic[7]		Childcare Site Construction		Childcare Site Construction + Traffic	
			Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)	Exposure (Leq dBA)	Increase (dBA)
R4	2	58	53	0	56 - 60	0 - 2	52	0	63	5	66*-69*	8* – 11*	69*	11*	70	12*	-	-	-	-
R5	18	59	52	0	52 - 58	0	48	0	62	3	63 - 67*	4 - 8*	65	6*	66	7*	-	-	-	-
R6	36	59	52	0	55 - 59	0	42	0	64	5	65- 68*	6 *- 9*	70*	11*	70	11*	-	-	-	-
R7	1	60	53	0	52 - 56	0	38	0	63	3	63 - 67*	3 - 7*	69*	9*	69	9*	-	-	-	-
R8	2	60	53	0	54 - 55	0	42	0	62	2	63-67*	6* - 7*	67*	7*	67	7*	-	-	-	-
R9	25	47	41	0	41 - 59	8* – 12*	52	6*	43	0	43-59	8* & 12*	53	6*	60	13*	-	-	-	-
R10	18	47	39	0	40 - 59	12*	52	6*	42	0	43 – 59	0 - 12*	53	6*	60	13*	-	-	-	-
R11	1	58	57	0	57 - 63	1 - 5	54	0	64	6*	65 - 69*	7* - 11*	69*	11*	70	12*	-	-	-	-
R13	2	53	49	0	49 - 52	0	49	0	60	7*	56 – 60	3 - 7*	63	10*	63	10*	-	-	-	-
R14	3	59	58	0	59 - 60	0	53	1	67*	8	65 - 69*	6* - 10*	68*	9*	69	10*	-	-	-	-
R15	1	53	41	0	42 - 54	0 – 1	49	2	46	0	54 – 59	1 - 6*	57	4	60	7*	-	-	-	-
R16	4	58	56	0	58 - 59	1	54	5	65	7	67 - 69*	9* - 11*	68*	10*	69	11*	-	-	-	-
R17	4	58	52	0	52 - 60	0 – 2	52	0	62	4	63 - 68*	5 - 10*	64*	6*	66	8*	-	-	-	-
R18	2	60	54	0	54 - 56	0	42	0	60	0	63 - 67*	3 - 7*	66*	6*	66	6*	-	-	-	-
R19	2	47	45	0	45 - 47	0	45	0	46	0	50	3	48	1	49	2	-	-	-	-
R20	1	60	34	0	34 - 41	0	34	0	65	5	63 - 67*	3 - 7*	69*	9*	69	9*	-	-	-	-
R21	1	54	62	8*	54 - 61	0 - 7*	55	7*	64	10	62 – 63	8* - 9*	64	10*	64	10*	-	-	-	-
R22	4	58	61	3	59 - 62	1 – 4	55	6*	62	4	64	6*	64	6*	65	7*	-	-	-	-
R23	2	59	57	0	58	0	53	1	70	11	66 - 69*	7* - 10*	72*	13*	72	13*	-	-	-	-
R24	3	59	57	0	59	0	54	2	66	7	65 - 69*	6* - 10*	69*	10*	70	11*	-	-	-	-
R25	2	58	57	0	59	0 - 1	54	0	69	11	65 - 69*	7* - 11*	73*	15*	73	15*	-	-	-	-
R26[1]	2	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	7*	62	8*
R27[1]	1	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	63	9*	64	10*
R28[1]	1	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	2	59	5
Total Receptors	138																			

Significantly Impacted Receptors	0	1	0	44	0	48	10	18	81	132	59	131	81	132	0	3	0	3

[1] Does not include effects from traffic only, see Table 3.12-12.
[2] Receptors R1, 2, 3, and 12 were located on properties that have since been acquired by OCIDA and were eliminated from this analysis.
[3] R9 is a 152-bed nursing home; six buildings with 76 beds are considered 25 dwelling unit equivalents would be significantly affected. R10 is a 72-unit- apartment complex; one 18-unit- building would be significantly affected. R16 includes a park and places of worship. R17 and R18 each include a place of worship. All other receptors are single family residences.
[4] Micron Campus construction and operation include operation of the Rail Spur Site.
[5] These columns represent noise effects during operations of all 4 fabs when construction has concluded.
[6] These columns represent worst case noise effects during construction of each of the four fabs. The worst case occurs at a different time for each receiver depending upon its location relative to the construction activity.
[7] These columns represent noise effects during the construction of Fab 4 when Fabs 1-3 are fully constructed and operational.
Yellow and **Bold** (*) indicates significant effect.
See Table 3.125 for explanation of the worst-case (loudest) analysis scenarios.

The operation of the Childcare Site is not expected to generate significant noise. Traffic noise at the receivers near the Childcare Site, when the childcare center would be operating in 2031 and 2041 would not result in a significant noise effect at any of the three receivers. Traffic noise levels for both 2031 and 2041 remain below 65 Leq dBA and a maximum noise level increase from traffic of 3 dBA is projected at R26 (Table 3.1214). While combined construction and traffic noise would not exceed 65 Leq dBA at any of the receivers, during the peak construction noise periods, R26 and R27 would experience predicted increases over existing noise levels of 8 and 10 dBA, respectively, which exceed the threshold for significance (Table 3.12-14). R26 represents a single-family residence, and R27 represents two family residences. These increases would be temporary, occurring over a three-month period, during construction of the childcare center in 2028. Slightly lower noise levels that exceed the threshold would again occur during a 12-month period from April 2030 to April 2031 from construction of the healthcare and recreation facilities.

Connected Actions

As discussed in Section 2.1, the Preferred Action Alternative requires infrastructure improvements to provide the Micron Campus with adequate supplies of energy and water, broadband internet connectivity and wastewater disposal capacity. Each of these infrastructure improvements requires an upgrade of facilities at the owner/operator site, as well as transmission facilities to physically connect the sites to the proposed Micron Campus. Construction of the transmission facilities would be a short-term transient activity with a moving construction zone and therefore, is not expected to result in permanent or significant noise effect or annoyance to people living nearby and therefore are not specifically addressed below.

Designs for most of the facility upgrades have not been sufficiently advanced by the owner/operators for a quantitative analysis of construction or operation noise effects. Therefore, a qualitative analysis of potential noise effects of the facilities is provided below, using a screening distance of 800 feet from the proposed activity for identifying noise sensitive receptors, all of which are residences, a conservative estimate for potential construction noise.[112] Based on the analysis of vibration effects of the construction of the Micron Campus, which includes pile installation and would range from 23 VdB to 50 VdB and from 0.0 PPV to 0.002 PPV, it is expected that vibration effects from Connected Actions, which are not likely to include any more vibratory activity than pile installation, would also be well below the 72 VdB threshold for annoyance to humans and the thresholds for damage to buildings that are shown in Table 3.12-4.

Electricity

As described in Section 2.1.5, National Grid proposes to expand the existing footprint of the Clay Substation by approximately 10 acres to meet the electricity demand of the Micron Campus. The surrounding area is rural and as indicated in Figure 3.12-10, which also depicts noise sensitive receptors along Verplank and Caughdenoy Roads within 800 feet of at least some of the proposed improvements.

[112] Significant noise levels (as defined in Section 3.12.3.1) from construction do not extend more than 500 feet from the Micron Campus.

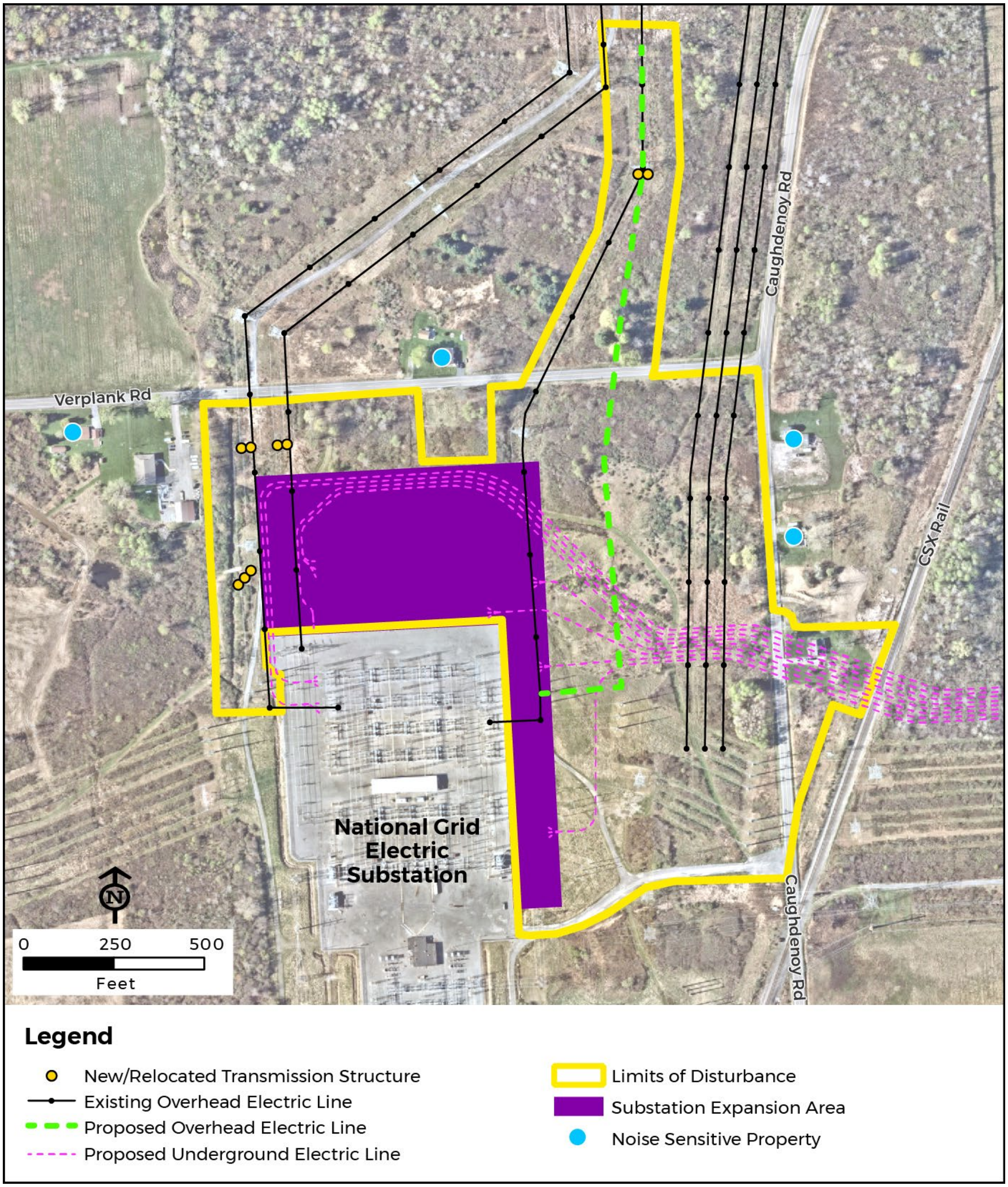
The proposed substation expansion does not include new equipment (e.g., transformers) that would cause an increase in operational noise.[113] The receptors could be exposed to noise from construction activities, which would be temporary over approximately two years. While proposing to mostly limit construction activities to the hours of 6:00 a.m. to 7:00 p.m. Monday through Saturday, National Grid has requested the NYSPSC waive the limitations on construction noise in the Town of Clay noise ordinance due to safety or continuous operation requirements; the waiver has not yet been granted, but if it is, some work may occur on a 24hour basis.[114] National Grid would notify the Town of Clay in advance of any afterhours work. Typical noise levels for the construction would range from 54 to 82 dBA at 100 feet distance, from 42 to 70 dBA at 400 feet distance, and from 34 to 62 dBA at 1,000 feet distance. Thus, it is likely that the worst-case construction noise would increase noise levels at the receptors above 65 dBA and by more than 6 dBA above the estimated ambient level of 45 dBA. Even without a waiver, noise from the construction could exceed the Town of Clay's 70 dBA daytime limit for the Industrial 2 zone for residences within 100 feet of the property line.

If the NYSPSC waives the Town of Clay's limits on construction noise, construction noise exposure could be significant during some of the construction period.

[113] Case 24-T-0120 - Petition of Niagara Mohawk Power Corporation d/b/a National Grid for a Certificate of Environmental Compatibility and Public Need, Pursuant to Article VII of the Public Service Law National Gride Micron Electric Service, 245dK Underground Service Transmissions Laterals Between Expanded Clay Substation and Micron Fabrication Areas, Exhibit 4, Environmental Impact, p. 4-67

[114] For the Industrial 2 district, the Town of Clay limits noise at the property line to 70 decibels between 6 AM and 10 PM and to 60 decibels between 10PM and 6 AM, with some allowance for intermittent noise.

Figure 3.12-10 Sensitive Receptors Near Proposed National Grid Substation Expansion



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Natural Gas

As described in Section 2.1.6, National Grid proposes to construct a natural gas distribution line from its existing GRS 147 to the Micron Campus and to construct a new GRS 147A at the same address in Clay to meet the energy demand of the Micron Campus. The GRS expansion would require installing new subsurface infrastructure and above-ground equipment to the northeast of the existing GRS 147 fenced area. Across NYS Route 31 from GRS 147, 29 noise sensitive receptors (residences) and the Clay Town Hall lie within 800 feet (see Figure 3.12-11). Other land uses near the proposed GRS 147A are municipal and include the Clay Highway Department. This area is rural/suburban and therefore, the ambient noise level is anticipated to be approximately 50 to 55 dBA. Based on the existing presence of the GRS, the size of the area and because traffic noise from NYS Route 31 is likely a larger factor in the noise environment for the area, construction or operation noise exposure from the GRS 147A expansion area would not likely cause a significant increase in noise at the receptors. Construction of the expansion would be subject to hours and noise level limits of the Town of Clay's noise ordinance for non-industrial districts, as described in Section 3.12.2, while noise from operation is anticipated to be similar to existing operational noise.

Figure 3.12-11 Sensitive Receptors Near Proposed GRS 147A

Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Water Supply

As described in Section 2.1.7, OCWA would upgrade several facilities to meet Micron's demand for water. OCWA proposes interior upgrades to its RWPS in the City of Oswego, which is shown in Figure 2.1-12. Construction would commence in December 2028 and occur over three years. The interior upgrades and any related outdoor equipment would not likely generate significant construction noise or change in operational noise exposure for two residential receptors approximately 400 and 700-800 feet to the west on the SUNY Oswego Campus. Construction noise and changes from exterior operational equipment would be subject to hours and noise level limits of the City of Oswego's noise ordinance, as described in Section 3.12.2.

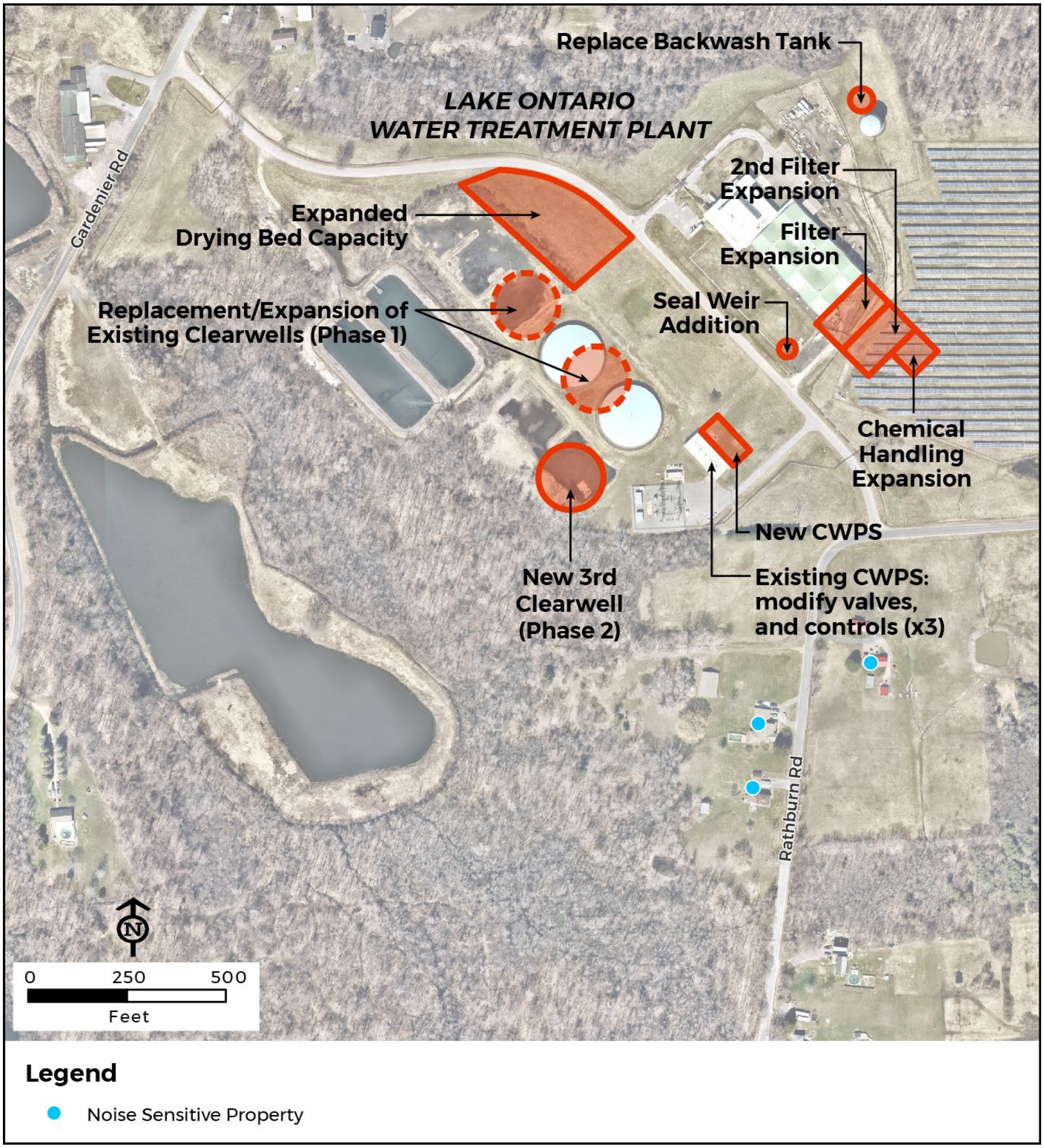
As shown in Figure 3.12-12, three noise sensitive receptors (residences) are located approximately 600-750 feet south of OCWA's proposed improvements to its LOWTP facility in Oswego County, which does not have a noise ordinance. Construction would commence in December 2030 and occur over 3.5 years. This area is rural, with anticipated ambient noise levels around 50 dBA. The proposed upgrades are similar to and no closer than existing facilities to the receptors and therefore are not expected to noticeably increase operational noise exposure. Due to the distance and duration of construction, noise exposure from construction is not expected to be significant and would also be temporary.

The area of OCWA's proposed improvements to its Terminal Campus in the Town of Clay and noise sensitive receptors are shown in Figure 3.12-13. Construction would commence in February 2032 and occur over two years. The noise sensitive receptors include 10 single family residences to the south and a multifamily senior living facility to the east. This area is rural/suburban, with anticipated ambient noise levels of approximately 50 to 55 dBA. The proposed OCWA improvements are similar to existing facilities and are not expected to noticeably increase operational noise exposure. Due to the distance and duration of construction, noise exposure from construction is not expected to be significant. Construction noise and changes in operational noise would be subject to hours and noise level limits of the Town of Clay's noise ordinance for nonindustrial districts, as described in Section 3.12.2.

Wastewater Treatment

As described in Section 2.1.8, to meet Micron's demand for industrial wastewater treatment, OCDWEP would construct a new IWWTP and water reclamation facility at the Oak Orchard site in Clay. This area is rural and therefore, the ambient noise level is anticipated to be approximately 50 dBA. Construction of the IWWTP is scheduled to begin in Spring 2026 and conclude in March 2028. There are nine noise sensitive receptors (residences) within 800 feet of the proposed improvements (see Figure 3.12-14). All of these may experience traffic noise effects during construction, as well as effects from construction noise, all of which would be temporary. Any changes in the noise environment would be subject to hours and noise level limits of the Town of Clay's noise ordinance for non-industrial districts, as described in Section 3.12.2.

Figure 3.12-12 Sensitive Receptors Near Proposed Improvements to OCWA LOWTP Facility

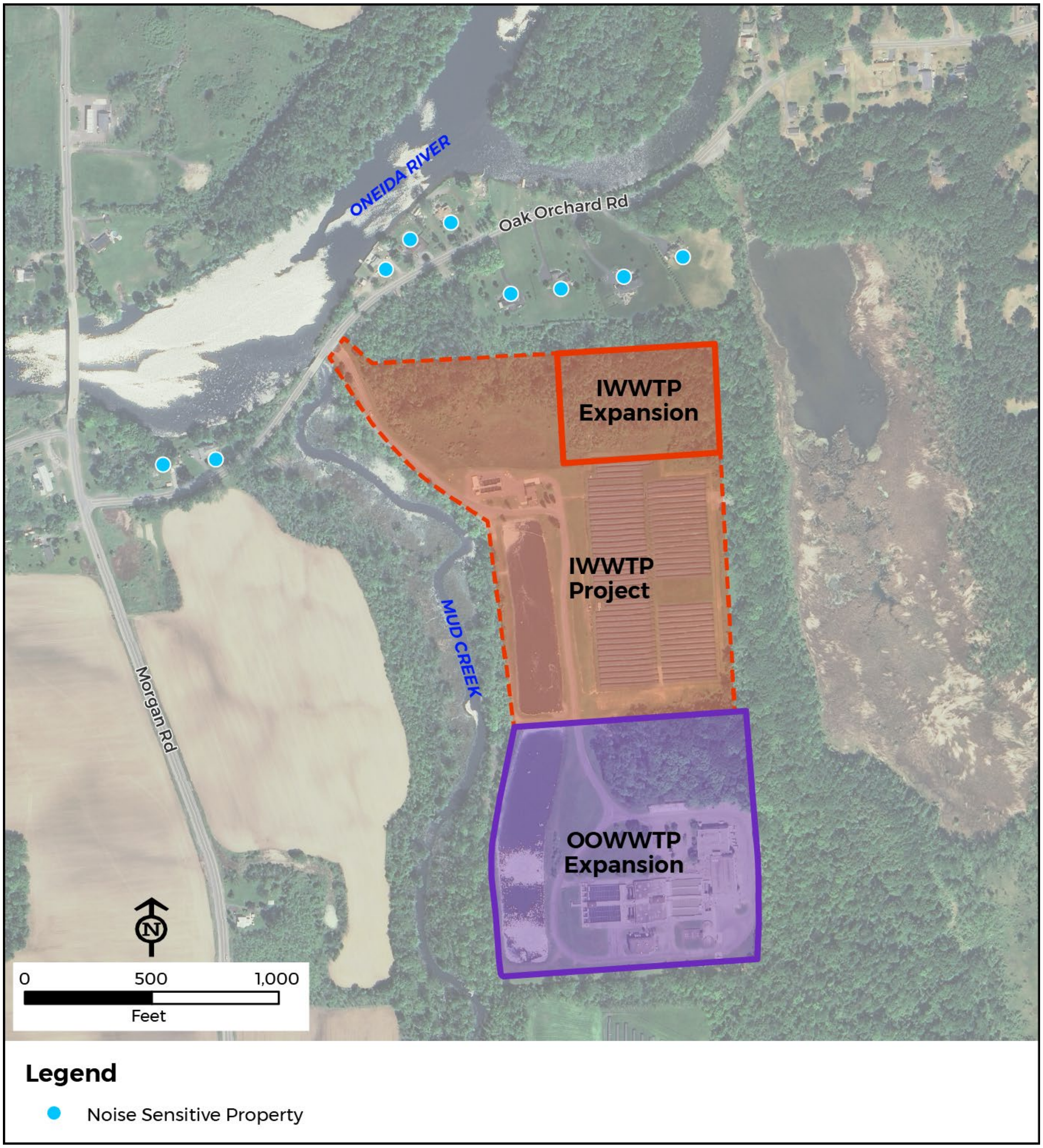


Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Figure 3.12-13 Sensitive Receptors Near Proposed Improvements to OCWA Terminal Campus

Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Figure 3.12-14 Sensitive Receptors Near Proposed Improvements to Oak Orchard WWTP



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

3.12.5.3 Summary of the Significant Environmental Consequences of the Preferred Action Alternative

The Proposed Project will result in significant adverse noise effects. However, construction and operations only accounts for a small percentage of significant adverse effects. Rather, traffic is the loudest generator of noise, because it is the closest noise source to most of the receptors. As summarized in Section 3.12.5.2, when traffic noise is combined with Micron Campus construction and/or operation noise, all but one of the receivers in the Micron Campus and Rail Spur Site construction and operations study area, R19, would experience noise at a level that exceeds at least one of the thresholds for a significant adverse effect. The effects from incremental traffic noise increases throughout the 16-year construction period and would continue once construction concludes and all four fabs are operational in 2045. As summarized in Table 3.12-14 and shown in detail in Table N-3-4 of Appendix N, most of the noise effects are attributable to increases in future traffic volume projections.

Traffic noise would start to be generated by the project when construction starts on the Rail Spur Site in 2026 and would increase with construction of Fab 1. Traffic noise would increase over time, with both peaks from construction of each fab and a steady climb from Micron employee vehicle trips as each fab comes online. By 2031 approximately 100 individual receptors would be affected by significant adverse traffic noise. Then, by 2041, when Fabs 1-3 are operating and Fab 4 is under construction, a total of 520 individual receptors (e.g., residences, medical facilities, public parks, places of worship, recreation areas, schools, crossings, offices, restaurants, hotels and motels) would be affected by significant adverse traffic noise. Once construction is complete, construction equipment is no longer traveling to and from the site, and the headcount on the Micron Campus is reduced from a 2041 peak of approximately 12, 400 to 9,300 in 2045, slightly fewer receptors would still be affected by traffic noise.

As shown in Table 3.12-12 and Figure 3.12-5, it is anticipated that the loudest noise effects from traffic will be experienced at the approximately 100 residences located along public roadways closest to the Micron Campus, where the most project-generated traffic would occur. In these areas, 2041 Preferred Action Alternative noise level estimates reach up to 75 dBA and noise level increases of 10 dBA or greater occur at receivers closest to portions of NYS Route 31, Caughdenoy Road, US Route 11, and I-81. These estimated noise levels are provided in greater detail in Appendix N, Tables N-4-1 through N-4-20 and illustrations depicting each of these noise modeling receiver sites are contained Appendix Section N-5.

For the duration of the life of the Micron facility, 131 of the 132 closest receptors would experience significant noise effects during daytime hours from combined traffic noise and noise associated with operation of all 4 fabs on the Micron Campus. At night, traffic volumes would be lower such that noise exposure levels at night would be lower.

3.12.6 BMPs and Mitigation Measures

To avoid and minimize potential noise effects from construction, Micron requires its contractors to implement the following BMPs during construction activities:

- Comply with NYSDEC regulations for idling vehicles.
- Allow only audible self-adjusting back-up alarms or manual backup alarms.
- Use of mufflers for all drilling equipment such as jackhammers, hoe rams, core drills, direct push soil probes (e.g., Geoprobe), and rock drills.

- Use of electrically operated hoists and compressor plants unless otherwise permitted by the resident engineer for good cause.
- Locate the noisiest equipment, including emergency generators, as far as possible from sensitive receptors.
- Use gears on machinery designed to reduce noise to a minimum.
- Use acoustically rated enclosures, exhaust mufflers and variable frequency drives (VFDs) for fans, electric motors, and pumps where possible.
- Use vibratory pile installation instead of pile driving to reduce noise and vibration from pile installation.
- Use of "high efficiency" motors and other equipment that produce less noise than standard efficiency equivalents due to less "waste" energy available to generate noise.
- Prohibit the use of air or gasoline driven saws unless otherwise permitted by the resident engineer.
- Route construction equipment and vehicles carrying rock, concrete, or other materials over streets that would cause the least disturbance to noise-sensitive locations.
- Prohibit slamming of dump truck tail gates.
- Use of silencers on air intakes and air exhaust of equipment.
- Ensure that construction devices with internal combustion engines keep engine doors closed, use noise-insulating material mounted on the engine housing that does not interfere with the manufacturer guidelines, and limit operation to lower engine speeds to the maximum extent possible.
- Operate equipment to minimize banging, clattering, buzzing, and other annoying types of noise.

Further, although operations are not anticipated to impact as many receivers, to avoid and minimize potential noise effects from operations, Micron would implement noise reduction strategies such as noise barriers on the roof or at other equipment locations, berms in strategic locations around the site, sound attenuators or low noise packages at the equipment, and strategic equipment locations.

Even with these BMPs, significant noise effects would occur such that noise mitigation measures are necessary.

Noise from construction and/or operation of the Rail Spur Site, the Micron Campus and Childcare Site would exceed one or both the thresholds for significant adverse effects as summarized in Table 3.12-14. The proposed mitigation, which would reduce adverse construction and operation noise effects to below the significance thresholds, includes the installation of ground level noise barriers and rooftop enclosures around equipment.[115]

Micron proposed noise barrier options on Micron property at its boundaries that would abate significant adverse construction and operation noise. As originally conceived, Micron would construct permanent ground level noise barriers on the Rail Spur Site, as shown in Figure 3.12-15 to abate noise from operation of the rail operations during construction and operation of the Micron Campus. Micron would install temporary ground level noise barriers on its property at the boundaries to mitigate construction noise from the Rail Spur Site and the Micron Campus at the affected properties. Micron would consult the property owners about aesthetic considerations of the barriers, such as landscaping. Figure 3.12-15 and Figure 3.12-16, illustrate the locations of the originally proposed temporary and permanent ground level noise barriers. Figure 3.12-17 illustrates the proposed location of a temporary ground level barrier to abate construction noise at the Childcare Site. In further review with the Town of Clay Planning Board, rather than the noise barriers proposed for the Rail Spur Site, Micron will be required to install a noise barrier around the exterior of the Rail Spur Site. This may include fencing that is fitted with acoustical abating material or other noise barriers. Additionally, the lead agencies will require Micron to install and operate noise monitoring equipment to continuously monitor noise at the Rail Spur Site and Micron Campus and adapt noise mitigation measures as necessary to achieve the results specified in this section. As a result, the proposed noise mitigation measures outlined in this section may be amended throughout the construction and operation of the plant as informed by the continuous noise monitoring equipment and compliance with the required noise ordinance.

Enclosures installed around rooftop equipment on the Micron property would abate significant adverse operational noise effects. Micron would install permanent enclosures on rooftop equipment that exceeds 65 dBA, as shown in Table N-1-9 of Appendix N. Table 3.12-15 provides details on the purpose, dimensions, schedule and effectiveness of each noise barrier, as well as where proposed equipment enclosures are recommended. These barriers were designed and validated using the Cadna-A model described in Section 3.12.3.

As noted above, significant adverse traffic noise impacts are predicted to occur primarily from traffic on the main roadway corridors to the Micron Campus, including NYS Route 31, Caughdenoy Road, NYS Route 481, and U.S. Route 11. Nearly all the 520 significantly noise-affected receptors have a driveway accessed from these roads.[116] While ground-level noise barriers were considered as a potential noise mitigation measure, in most cases, the construction of noise barriers to mitigate elevated traffic noise is not feasible. This is because property and driveway access to the roadways that are the source of the significant noise effects must be maintained. Noise barriers that would be open at the driveways would not result in adequate noise reduction required to achieve the desired abatement result. To effectively reduce noise levels, noise barriers

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[115] Proposed recommended noise mitigation measures outlined below are limited to locations where property access can be maintained and where the abatement measure does not encroach upon or diminish in any way the benefiting properties use.

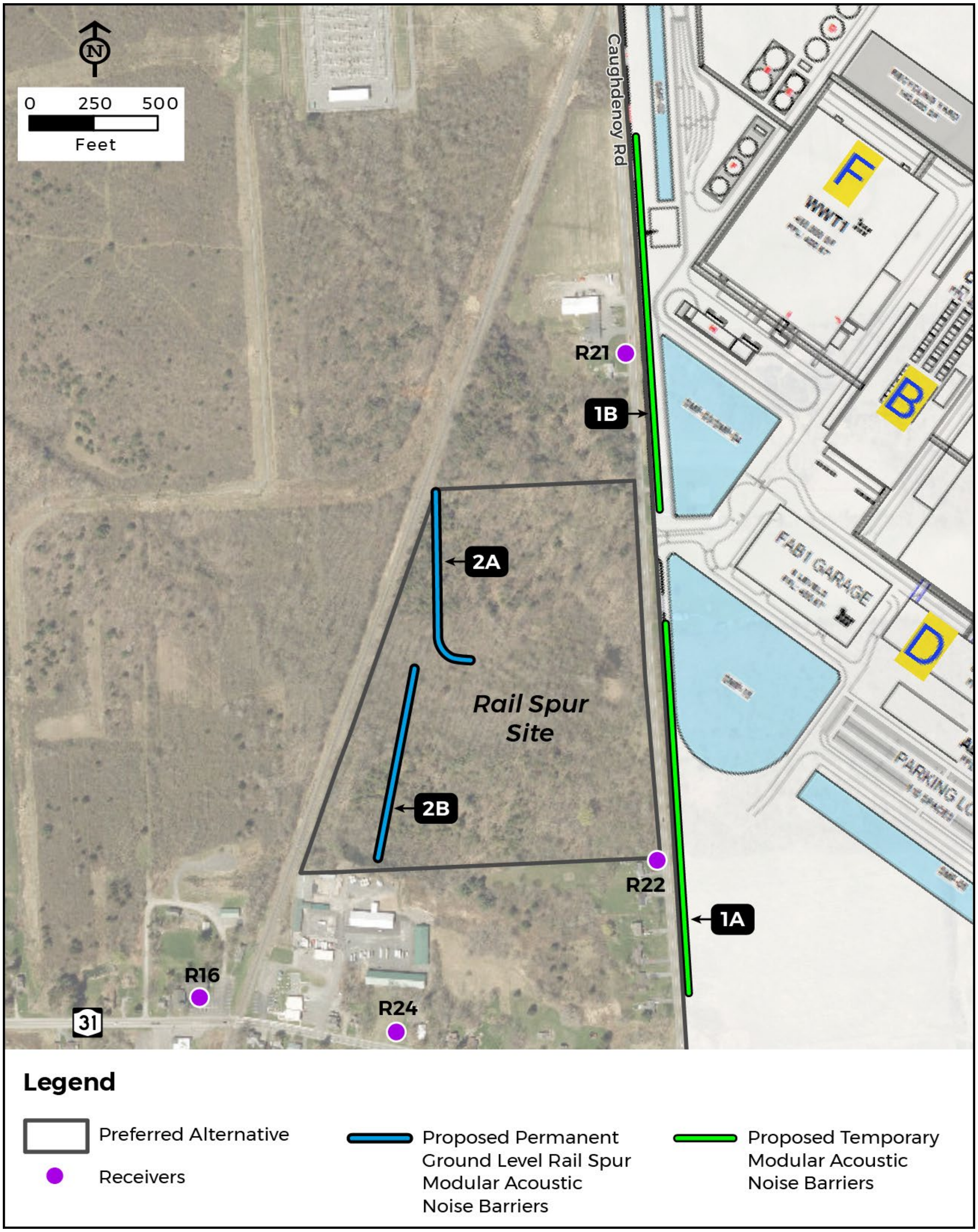
[116] The approximately 520 receptors, or dwelling unit equivalents, are represented in Table 3.12-12 by approximately 290 receivers (290 is the average of the 276 receivers that would be affected during the AM peak period and the 305 receivers that would be affected during the PM peak period).

must be continuous at the sensitive receptor and two hundred feet to either side of the receptor being targeted for abatement.

One location where traffic noise abatement is feasible is represented by R5, where 18 of the approximately 520 significantly affected receptors, which are in the vicinity of Barcaldine Drive, back on NYS Route 31. The driveways for these residences are accessed from Alfreton Drive or Wyandra Drive. Noise barriers would be effective in this location because a permanent barrier could be placed along the back of the properties to mitigate traffic noise from NYS Route 31 without affecting access to the properties. Figure 3.12-16 illustrates the proposed location of two permanent ground-level noise barriers in this area. These barriers must be constructed in the ROW of NYS Route 31 or on the private properties that would benefit from the barriers. Micron would attempt to gain permission from NYSDOT to construct the noise barriers in the NYSDOT ROW. If construction in the ROW is not feasible, then Micron would approach the property owners about the possibility of constructing the barriers on their property. Ultimately, the construction of the noise barriers for the control of traffic noise will be at the direction of NYSDOT based on their separate environmental review of roadway modifications. Table 3.12-15 provides details on the purpose, and conceptual dimensions, schedule and effectiveness of each barrier.

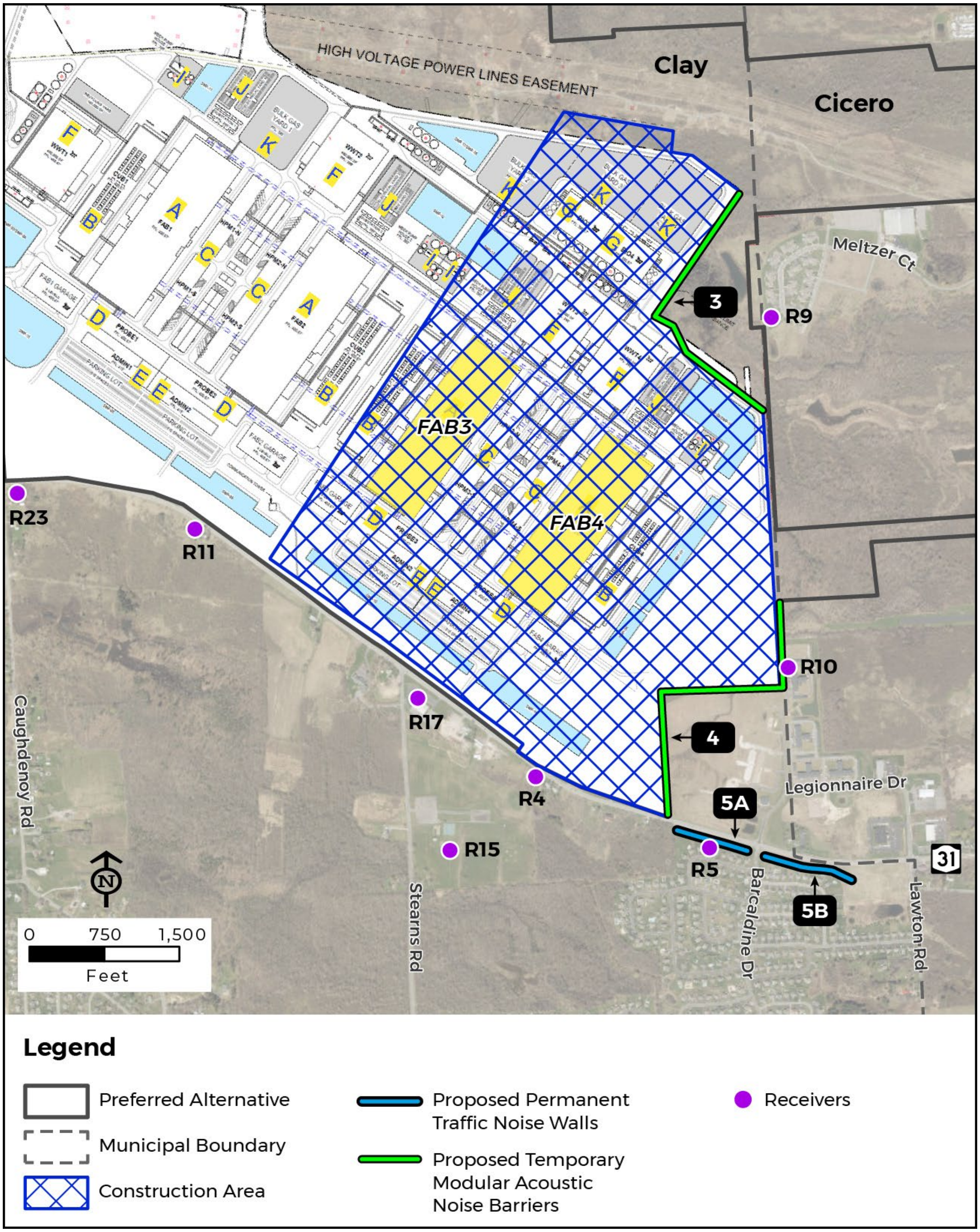
In summary, all significant adverse noise effects related solely to construction and operations noise could be mitigated to below the significance thresholds at all the 51 affected receptors that would be affected by such noise. However, not all significant noise effects from the Preferred Action Alternative can be mitigated given that traffic is the largest contributor to noise effects. Traffic noise could be abated to below the significance thresholds at 18 of the approximately 520 receptors that would be significantly affected by traffic noise. However, significant traffic noise effects at approximately 500 dwelling unit equivalents cannot be mitigated to below the significance thresholds. The largest of the unmitigated traffic noise level in 2041 would range from 66 to 75 dBA and noise level increases of 10 dBA or greater occur at receivers closest to portions of NYS Route 31, Caughdenoy Road, Route 11, and I-81.

Figure 3.12-15 Proposed Temporary and Permanent Noise Barriers to Abate Significant Effects from the Micron Campus (West) and Rail Spur Site



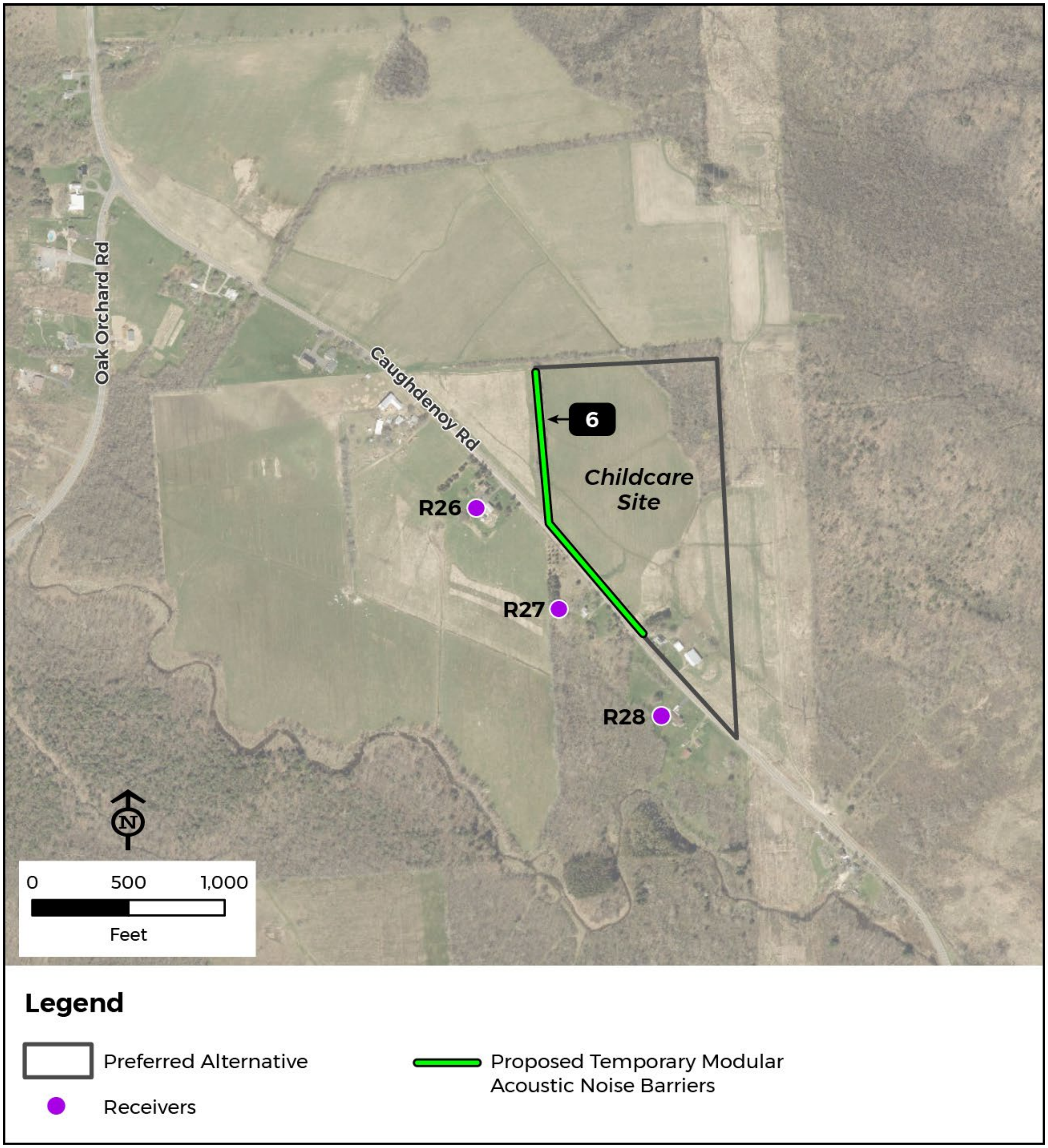
Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Micron Technology (n.d.).
Note: See Table 3.12-15 for details on the proposed barriers.

Figure 3.12-16 Proposed Temporary and Permanent Barriers to Abate Significant Noise Effects from the Micron Campus (East)



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Micron Technology (n.d.).
Note: See Table 3.12-15 for details on the proposed barriers and walls.

Figure 3.12-17 Proposed Temporary Barriers to Abate Significant Noise Effects from Construction of the Childcare Site



Sources: World Imagery (Esri, 2025c): Esri, Maxar, New York State; Hybrid Reference Layer (Esri 2025d): Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community.
Note: See Table 3.12-15 for details on the proposed barriers.

Table 3.12-15 Summary of Proposed Noise Abatement Measures

Noise Barrier Number[1]	Source of Noise to be Abated	Affected Representative Receiver	Number of Dwelling Units for which Noise Would be Abated	Proposed Abatement Measure	When the Abatement Needs to be Constructed	Barrier Length (feet)	Barrier Height (feet)	Noise Reduction Achieved with Abatement (dB)
1A	Micron Campus Fab 1 Construction Rail Spur Site Construction	R22	4	Temporary modular ground level noise barrier parallel to Caughdenoy Road on the Micron Campus for duration of Fab 1 construction	Prior to construction of Fab 1	1,450	24	7
1B	Micron Campus Fab 1 Construction Rail Spur Site Construction	R21	1	Temporary modular ground level noise barrier parallel to Caughdenoy Road on the Micron Campus for duration of Fab 1 construction	Prior to construction of Fab 1	1,460	24	7
2A and 2B	Rail Spur Site Operations	R21 and R22	5	Permanent ground level modular acoustic noise barriers at Rail Spur Site	Prior to operations of the Rail Spur Site	770 each	24	7 to 10
NA	Fab 1 Operations	R21 and R22	5	Permanent rooftop metal semi-enclosures on Fab 1 buildings	When Fab 1 becomes operational	NA	TBD2	5 to 7
3	Micron Campus Fab 3 and Fab 4 Construction	R9	25	Temporary modular ground level acoustic noise barriers on Micron Campus eastern boundary for duration of Fab 3 construction	Prior to construction of Fab 3	3,000	24	7 to 10
NA	Fab 3 Operations Fab 4 Operations	R9 R9 and R10	43	Permanent rooftop metal semi-enclosures on Fab 3 and Fab 4 buildings	When Fab 3 and Fab 4 each become operational	NA	TBD2	5 to 7
4	Micron Campus Fab 4 Construction; Micron Campus Operation	R10	18	Temporary modular ground level acoustic noise barriers on Micron Campus eastern boundary for duration of Fab 4 construction	Prior to construction of Fab 4	3,340	22	7 to 10
5A and 5B	Traffic Noise associated with Fabs 2, 3 and 4 Construction Micron Campus Operations	R5	9	Permanent ground level traffic concrete post and panel noise barrier in NYSDOT right of way	Prior to construction of Fab 2	750 and 950	16	7
6	Construction of childcare center, healthcare center, and recreation center[3]	R26 & R27	3	Temporary modular ground level acoustic noise barriers on Childcare Site construction area for duration of childcare center construction and again for duration of healthcare center and recreation center construction	Prior to construction childcare center Prior to construction of healthcare center and recreation center	1,550	18	7

[1] See Figure 3.12-15, Figure 3.12-16 and Figure 3.12-17.
[2] The design, location and specifications of the permanent rooftop metal semi-enclosures would be determined when the building design matures sufficient to allow identification of the major rooftop noise sources which would require enclosure.
[3] Once the childcare center is constructed, it is a noise-sensitive receptor and if possible, abatement measures, including temporary barriers, should be considered during construction of the healthcare center and recreation center.

3.13 VISUAL EFFECTS AND COMMUNITY CHARACTER

This section analyzes both the visual effects of the No Action Alternative and the Preferred Action Alternative and the effects of the alternatives on community character. Visual effects are changes in appearance in the physical environment. Community character refers to the natural and built environments of a community and how people perceive their community. Although visual effects can be modeled based on renderings of new buildings and how they would appear to the eye from various viewpoints in the vicinity, community character cannot be readily defined by quantitative measures and requires a more qualitative analysis that considers relevant plans and zoning as expressions of a community's desired future state or character.

The Proposed Project and Connected Actions would result in visual effects through the construction of permanent new structures and features on the landscape. These visual effects and other effects discussed in this EIS also may affect community character, primarily as a result of the new industrial and manufacturing profile and operations that the proposed Micron Campus would bring to the surrounding area. This section considers the relationship of these changes to the relevant study area (discussed below) in the context of local plans and zoning.

3.13.1 Visual Effects and Community Character Study Area

The study area for visual effects and community character includes: (1) the area within a five-mile radius around the proposed Micron Campus site, consistent with the Final SEQRA Scope (see Appendix A-2); and (2) the areas within quarter-mile radii around the Rail Spur Site, the Childcare Site, the Clay Substation expansion area, GRS 147, the OCWA Terminal Campus, the OCWA LOWTP, and the IWWTP, given that these other components of the Proposed Project and Connected Actions would primarily involve smaller-scale development with more limited off-site visibility. The remaining components of the Connected Actions would be of limited above-ground height or would be buried underground (e.g., the natural gas line and the wastewater conveyance) and therefore are not included in the visual effects analysis.

Section 3.13 includes a broad analysis of potential visual effects from the standpoint of an average viewer positioned at various vantage points or "viewpoints" within range of the Proposed Project and Connected Action components. This broad analysis is intended to provide a general sense of how the more visible Proposed Project and Connected Action components would "look" once they are fully constructed. In addition, Section 3.13 evaluates potential visual effects on "designated aesthetic resources", which are specific locations that have been formally "designated" or "inventoried" as part of Federal or State programs as having national or statewide importance based on their aesthetic or historic qualities. For a more detailed discussion of the visual effects and community character study area, the methodology used to evaluate potential visual effects, and an inventory of designated aesthetic resources, see Appendix O-1.

3.13.2 Legal and Regulatory Setting

Table 3.13-1 identifies the laws and regulations relevant to the analysis in this section.

Table 3.13-1 Legal and Regulatory Setting

Law or Regulation	Description
Federal	
CWA Section 404 (33 U.S.C. § 1344); 33 C.F.R. § 320.4, General policies for evaluating permit applications	As part of its review of CWA permit applications, including Section 404 dredge-and-fill permit applications (see Section 3.3, Water Resources), USACE must consider the potential effects of proposed permitted activities on historic, cultural, scenic, and recreational values. As noted in Section 1.2.1.3, USACE will conduct an independent review of this EIS. As part of that review, USACE will give due consideration to the effects of the Proposed Project and Connected Actions on historic and cultural resources (discussed in Section 3.5, Historic and Cultural Resources) and on resources possessing recognized scenic values as reflected in relevant state, regional, and local designations (discussed in this section).
State	
SEQRA (ECL § 8-0101 *et seq.*); 6 NYCRR Part 617; SEQR Handbook; NYSDEC Program Policy DEP-00-2	SEQRA requires an analysis of the effects of a proposed action on the environment, which is defined to include, among other things, "objects of historic or aesthetic significance" and "existing community or neighborhood character" (*see* ECL § 8-0105). The criteria in the SEQRA regulations for determining whether an action may have a significant effect on the environment include "impairment of the character or quality of important . . . aesthetic resources" (6 NYCRR § 617.7(c)(1)(v), NYSDEC, 2018). The SEQR Handbook, published by NYSDEC, provides additional guidance on consideration of visual effects and community character (NYSDEC, 2020). NYSDEC Program Policy DEP-00-2 also provides guidance on evaluating effects specifically on "designated aesthetic resources" (NYSDEC, 2019; see Appendix O-1).
Article VII of New York State PSL	NYSPSC has authority to consider visual effects as part of its review of the proposed National Grid electrical improvements under Article VII of the PSL, which applies to the siting of major utility transmission facilities.
NYSDOS Coastal Management Program (CMP)	NYSDOS, the Town of Clay, and the City of Oswego have authority to consider visual effects on resources designated under the CMP or LWRPs (see Section 3.3 (Water Resources) and Appendix F).
Local	
Town of Clay Zoning Code; Town of Cicero Zoning Code	Town of Clay and Town of Cicero zoning ordinances regulate certain visual effects from structures through setback, buffer, and lighting requirements. Proposed Project site plans would be subject to site plan approvals from these municipalities (see Section 3.1, Land Use, Zoning, and Public Policy). Connected Actions constructed in different municipalities also would be

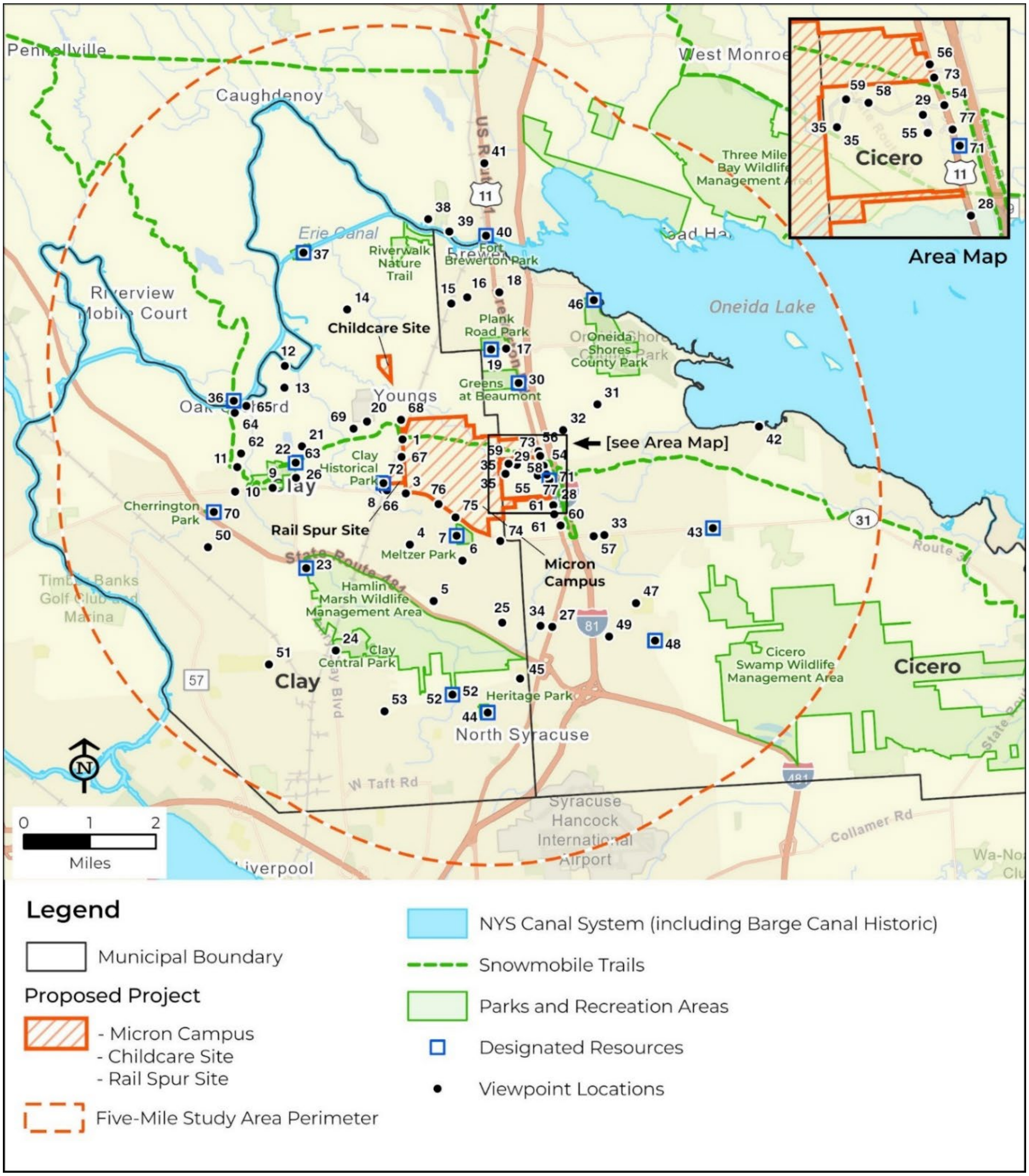
Law or Regulation	Description
	subject to applicable ordinances of those relevant municipalities, including any similar setback or buffer requirements. Under SEQRA, local comprehensive plans and zoning, including as summarized in Section 3.1 (Land Use, Zoning, and Public Policy) and Appendix D, and LWRPs, including as summarized in Section 3.3 (Water Resources) and Appendix F, may be relied on as primary expressions of communities' desired future state or character.

3.13.3 Affected Environment

As described above in Section 3.13.1 and Appendix O-1, a total of 76 viewpoints of the Proposed Project and Connected Actions were initially identified within the visual effects study area, inclusive of viewpoints from designated aesthetic resources in the study area, and conducted a viewshed analysis and site visits to exclude or "screen out" viewpoints from further analysis where Proposed Project and Connected Action components would not be visible due to factors such as thick vegetation or atmospheric interference. For the remaining list of viewpoints, the potential lines of sight to Proposed Project or Connected Action structures were reviewed, and a representative sample of 17 of these viewpoints was selected to prepare photo simulations of how the relevant structures would appear from the viewpoints (15 of the Micron Campus and two of the Rail Spur Site). These photo simulations are presented in Section 3.13.4.2 where relevant to the analysis.[117]

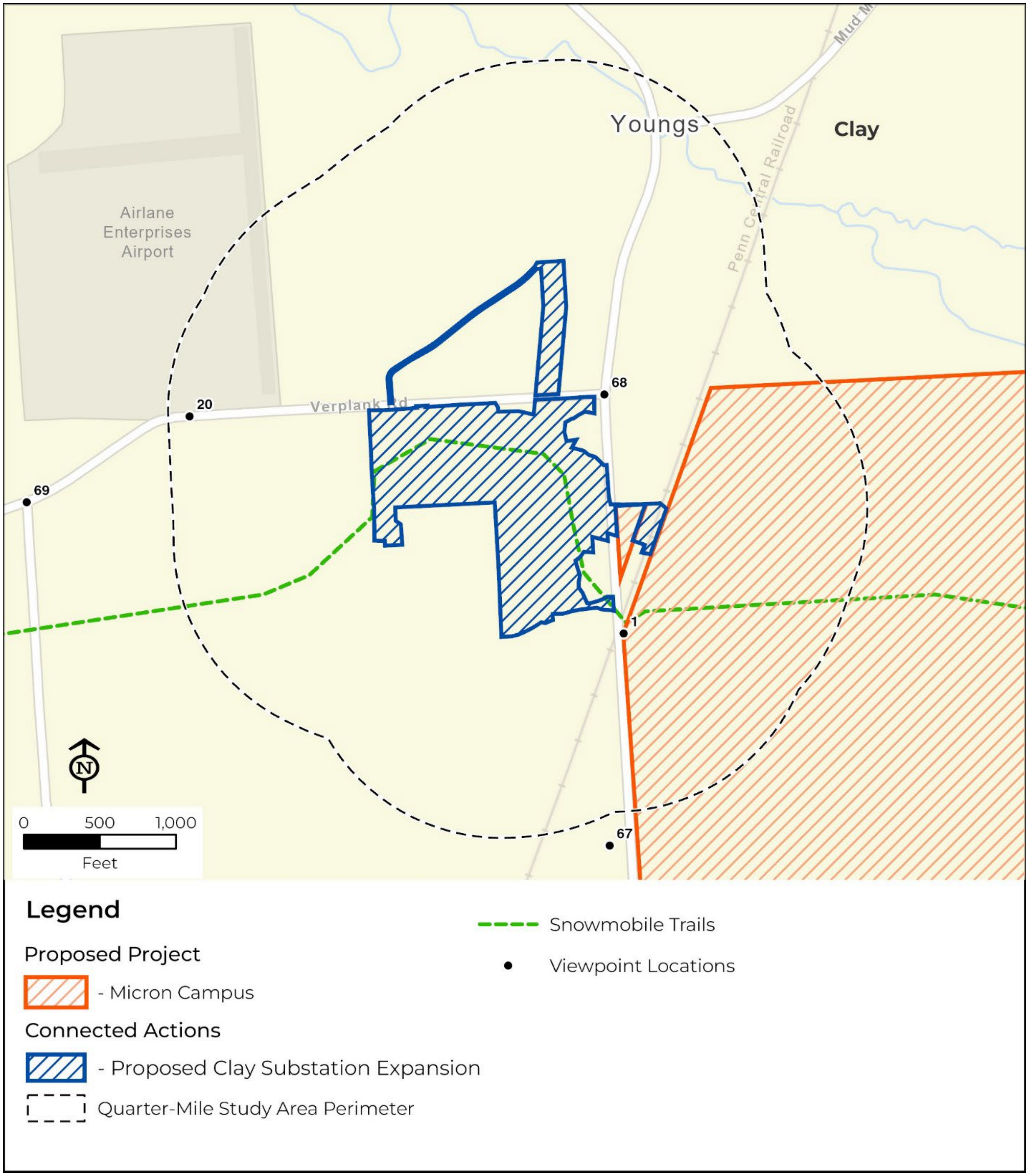
[117] Viewpoints were not included for the OCWA LOWTP because there are no designated aesthetic resources within a quarter-mile radius of the site and because the site is heavily screened by vegetation. Viewpoints also were not included for the natural gas line, water supply lines, wastewater conveyance, or fiber optic lines, because those Connected Action components would be of limited above-ground height or would be buried underground.

Figure 3.13-1 Visual Effects Study Area and Viewpoints



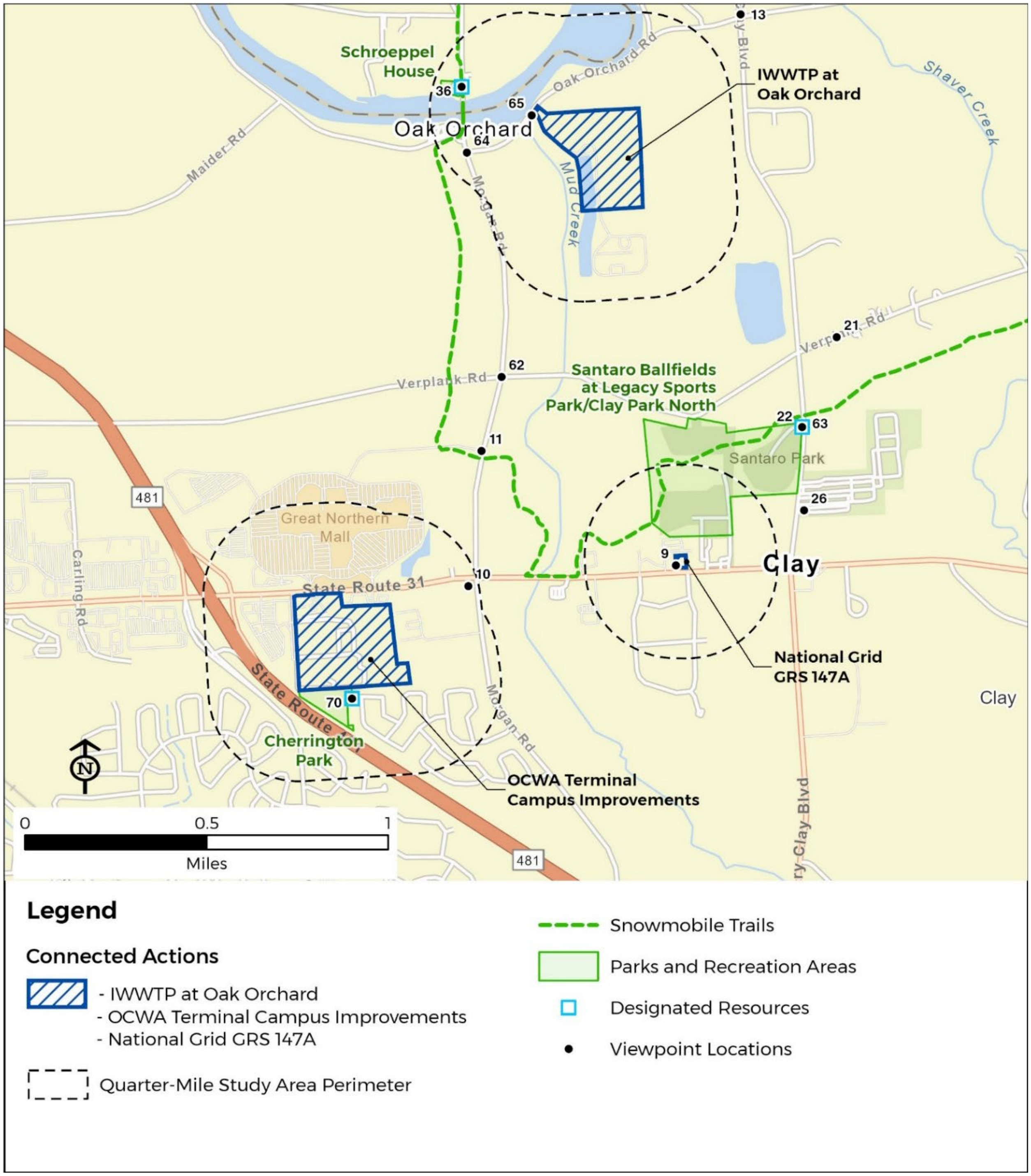
Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; METI/NASA; USGS; USEPA; NPS; USDA; NYSDEC.

Figure 3.13-2 Clay Substation Expansion Area Viewpoints



Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; METI/NASA; USGS; USEPA; NPS; USDA; NYSDEC.

Figure 3.13-3 Other Connected Action Viewpoints



Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; METI/NASA; USGS; USEPA; NPS; USDA; NYSDEC.

3.13.3.1 Proposed Project

The proposed Micron Campus site, Childcare Site, and Rail Spur Site are almost entirely undeveloped and generally consist of a mix of large upland areas with open fields (former agricultural land), shrubs, and woodland areas interspersed with wetlands (which generally are not accessible to the public). Figure 3.13-4 and Figure 3.13-5 on the following pages show typical views of the three sites. To the east of these sites is a commercial area along U.S. Route 11 that consists of businesses and a few homes, interspersed with shrubs and wooded areas, which continues toward Interstate 81. West of the Micron Campus site, the area is zoned industrial and includes the Clay Substation, the CSX rail line, a small number of businesses, a few residences, vacant lots covered in shrubs, and wooded areas. South of the Micron Campus site is NYS Route 31 and commercial and suburban development along U.S. Route 11 and NYS Route 481. Buildings in the study area are generally one and two-story single-family residences, three-story multifamily housing, and commercial buildings no taller than 50 feet. Topography in the study area is generally flat with gentle slopes, with one elevated viewpoint (Viewpoint 52) from which the Micron Campus would potentially be visible. There is little to no existing nighttime lighting in the vicinity of the Proposed Project sites except from a small number of existing residences. Nighttime lighting in the broader area is generated by businesses and homes, generally located a half mile or more to the east, west, and south of the Micron Campus site.

3.13.3.2 Connected Actions

The Connected Actions with potentially visible features as analyzed in Section 3.13 would include the Clay Substation expansion area, GRS 147, the OCWA Terminal Campus, and the IWWTP. The existing Clay Substation site has an electrical substation and large, overhead electric lines. Undeveloped areas within the site include a mix of grassland, shrub, and wooded areas. The Snow Owls Snowmobile Trail (discussed in Section 3.14, Community Facilities, Open Space, and Recreation) runs through the site. In general, the site has a low profile and is visible from its entrance roads but not from public roadways. Existing GRS 147 consists of a gravel area with above-ground equipment surrounded by a chain-link fence that can be seen from the local roadway. The Terminal Campus is a developed site with water supply infrastructure including holding tanks, a pump station, and a substation. The site is located between suburban residential developments and a commercial area in the Town of Clay. The campus sits atop a gently sloping hill with berms obscuring views from nearby Cherrington Park and Morgan Square Senior Apartments. The Oak Orchard site, where the IWWTP would be built, is a developed site with municipal treatment infrastructure, administrative buildings, and solar panel fields. The site also includes some forested, farmland, and wetland area. The site is in a small basin created by gently sloping hills to the east and west. Due to its low-lying position surrounded by sloping hills and dense vegetation, the site is not visible from public roadways.

Figure 3.13-4 Typical Views of Micron Campus Site

Photo view direction

View of the proposed Micron Campus, west from Caughdenoy Road

Photo view direction

View of the proposed Micron Campus, north from NYS Route 31

Source: AKRF.

Figure 3.13-5 Typical Views of Rail Spur and Childcare Sites

Photo view direction

View of the proposed Childcare Site, north from Caughdenoy Road

Photo view direction

View of the Proposed Rail Spur site, west from Caughdenoy Road

Source: AKRF.

3.13.4 Environmental Consequences

3.13.4.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. Therefore, the No Action Alternative would not result in any visual effects or changes in the community character separate from any relating to already planned development.

3.13.4.2 Preferred Action Alternative

Construction Effects

As described in Chapter 2 (Proposed Action and Alternatives), construction of the Proposed Project sites would occur over a 16-year period. Construction of the phases of the Micron Campus and of the Rail Spur and Childcare Sites would not all occur simultaneously. In general, although construction sites would be surrounded with 10-foot chain-link fencing with green privacy screens to partially screen views, cranes and other large construction equipment, the Rail Spur Site conveyance system over Caughdenoy Road,[118] and construction truck traffic would be visible activities. In addition, tree clearing would increase visibility and sight lines to areas of construction.

Construction of the Micron Campus and Rail Spur Site would involve placement and use of temporary construction lighting within construction and staging areas to allow for work at night during authorized construction windows (see Chapter 2) and to support site security. The lighting would include approximately 20-to-30-foot-high portable light towers with multiple adjustable fixture heads on single poles. Micron would require its contractors to use lighting that conforms to the Town of Clay lighting code (section 140 of the Town Code) and, where feasible, lighting eligible for the U.S. Green Building Council LEED light pollution reduction credit (SS8) for LZ1 land use zones. Construction of the Childcare Site would not take place at night and would only require minor safety and security lighting in limited areas.

In general, construction of the Connected Actions, including construction of underground utility lines along existing easements, would involve construction vehicle traffic, construction equipment, and temporary construction lighting, as well as removal of existing vegetation in certain areas. Construction activities would be visible from surrounding areas. Visual effects from completed Connected Action components are discussed below. Overall, construction of the Micron Campus would involve visible activity typical of a large construction project, with the other Proposed Project and Connected Action components involving similar visible activities to a lesser degree. These activities would be temporary, would occur during the construction phases described in Chapter 2, and would be consistent with local land use regulations, policies, and plans. Therefore, Proposed Project construction activities would not result in significant adverse visual effects or changes to community character.

[118] The Rail Spur Site conveyance system would be removed after construction of the Fab 4 building pad is completed.

Operational Effects

Operation of the Proposed Project and Connected Actions would be visible from various locations in the area. This section analyzes those visual effects consistent with the study area and methodology described in Section 3.13.1 and Appendix O. Following the discussion of the visual effects from operation of the Proposed Project and Connected Action components, the section includes a qualitative discussion of the effects on community character.

Micron Campus

The Micron Campus fabs and supporting buildings would become operational in phases over a 16-year period as described in Chapter 2. Due to the phased construction and operation of the fabs, views of the Micron Campus would include construction activity and equipment and operational buildings until the final build-out is complete.

The fabs would be the largest structures on the campus, each with a typical height of approximately 148 feet, with limited penthouse extensions up to 160 feet. The area to the north of the fabs would include four bulk gas yards, each with one or more gas storage columns approximately 170 feet tall. The area between the campus buildings and NYS Route 31 to the south would include smaller administration buildings, approximately 105 feet tall, that would be set back more than 600 feet from the road. On the western side of the campus, buildings would be set back at least 200 feet from Caughdenoy Road. From U.S. Route 11, buildings on the campus would be located more than a half mile away.

In general, during colder weather and no cloud cover, condensing water vapor plumes originating from cooling towers and process stacks on top of the four CUBs would be visible from surrounding areas. Because two of the CUBs would be adjacent to each other at the center of the campus, when visible, water vapor plumes would be noticeable from three distinct areas across the campus, with the middle plume appearing larger in size from the merging plumes above the two central CUBs. The plumes would generally be less visible during overcast or cloudy days, particularly from greater distances, and during warmer weather.

As described in Section 3.1 (Land Use, Zoning, and Public Policy), the portions of the Micron Campus not occupied by the manufacturing facility or related structures would remain essentially undeveloped, and would include several substantial vegetated and landscaped areas to provide visual buffering and maintain a natural appearance, particularly between the manufacturing facility and the NYS Route 31 corridor, to avoid or minimize potential effects on the existing character of the corridor and adjacent residential areas. These areas would include landscaping on the campus outside of the fenced manufacturing facility area, including in the bioretention ponds (see Section 3.3, Water Resources), and substantial planted areas in the outer southern, southeastern, and southwestern areas of the campus. In addition, the campus would include a 50-foot-wide landscaped perimeter planting strip along the western boundary with Caughdenoy Road and a 100-foot-wide landscaped buffer along the southern boundary with NYS Route 31. To account for sight lines and gaps, the first 25 feet of these buffers would include perennial plants, and the rest of the buffers would be planted with evergreen and deciduous tree types at varying heights and depths to screen most passing pedestrian and motorist views from the roads. Additional floodplain forest trees, shrubs, and plants would be planted between the NYS

Route 31 perimeter and the campus buildings. In general, the buffers and landscaped areas would be planted in tandem with the construction phases.

Outdoor lighting for operation of the Micron Campus would be expected to feature downward directional, shielded, warm white (2700 Kelvin) LED lights. Any modifications to the preliminary fixture selection would focus on providing energy efficiency, optical control, and optimal pole spacing for uniformity. All proposed lighting would be designed and installed in accordance with applicable local regulations.[119] The Micron Campus interior roadway network would be designed to provide access for industrial and emergency vehicles. Sidewalks would provide pedestrian access between buildings. The interior of the site would be lit by streetlights mounted on 26-foot poles along each street. Wall mounted versions, 16feet high, would add additional lighting where necessary. Streetlights also would be placed along the exterior driveways and in the frontages of the office buildings, administrative buildings, and parking lots. Parking areas would have warm white LED lights on shorter poles, approximately 13-16 feet tall.

Although each fab would have a typical height of approximately 148 feet (with limited penthouse extensions up to 160 feet), and bulk gas storage columns would be approximately 170 feet tall, the height of ground-mounted light fixtures would not be higher than approximately 26 feet. These lighting height design limitations would help to reduce the appearance of light beyond the immediate area. In addition, nighttime exterior lighting would be designed to minimize lighting effects beyond intended campus illumination areas. The campus also would install dark-sky compatible or LEED equivalent lighting where feasible. Overall, these design modifications would help to avoid and reduce lighting effects beyond the campus, but nighttime lighting levels would be a noticeable change from present-day nighttime lighting conditions in the area.

As described in Section 3.10 (Utilities and Supporting Infrastructure), Micron would plan to install solar panels on the roofs of certain Micron Campus buildings to generate renewable energy and help meet sustainability goals. The solar panels would be fixed and covered in an anti-reflective and anti-glare coating consistent with the NYSERDA Solar Guidance for Local Governments (NYSERDA, 2023).

As described in Section 3.13.3 and Appendix O, potential lines of sight to the Micron Campus structures were reviewed and a representative sample of 15 viewpoints was selected to prepare photo simulations of how the relevant structures would appear from the viewpoints. The 15 viewpoints of the Micron Campus for which photo simulations were prepared are listed in Table 3.13-2 below. Following the table, the section analyzes the visual effects that would be anticipated from each viewpoint, with figures of the corresponding photo simulations.[120]

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[119] Micron Campus structures are not anticipated to require any lighting or marking for purposes of aviation safety.

[120] The majority of the photo simulations account for "leaf-off" conditions during fall, winter, and spring months when no leaves are on deciduous trees, yielding less-obstructed views of buildings from intervening deciduous vegetation. Where leaf-off conditions are not included in a photo simulation, the analysis accounts for those conditions. Photo simulations of views near the Micron Campus include conceptual landscaping depicted at 40 percent maturity or approximately 10-15 years from initial planting.

Table 3.13-2 Representative Photo Simulations of Views of Micron Campus

#	Location	Use
71*	Property on Brewerton Rd	Eligible for NYSRHP / NRHP
61	Parking lot at Cicero Golf Store off Route 11	Commercial / Open Field
73	Route 11 and transmission lines near McKinley Rd	Roadway
77	Route 11 near CJ's Car America	Roadway
35	Meltzer Court	Residential
19*	East entry of Plank Rd Park – parking lot of Mud Mill Rd	Public Park
67	Parking lot of Jerome Fire Equipment off Caughdenoy Rd	Commercial
3	SW corner of NYS Route 31 and Caughdenoy Rd	Road
66	Parking lot of Freight Yard Brewing off NYS Route 31	Commercial
20	Driveway of Airlane Enterprises off Verplank Rd	Commercial
7*	Meltzer Park parking lot	Park
75	Stearns Rd and NYS Route 31	Roadway
74	Barcaldine Dr and NYS Route 31	Roadway
76	NYS Route 31 near 5158 NYS Route 31	Roadway
52	Bear Rd at Sandy Ln	Residential/Roadway

Source: AKRF. Note: * = designated aesthetic resource

Immediately East of the Micron Campus

Viewpoint 71 includes a home eligible for listing on the NYSRHP and NRHP. This designated aesthetic resource is located a little more than a half mile from the Micron Campus site. The Viewpoint 71 photo simulation (Figure 3.13-6) shows a slight, partial view of the Micron Campus during leaf-off conditions; the campus buildings would be below the tree line, only partially visible through bare trees. During leaf-on conditions, the Micron Campus would not be visible from Viewpoint 71. The low-profile visual presence of the Micron Campus from this viewpoint would not impede the use or enjoyment of the designated aesthetic resource and therefore would not result in a significant aesthetic impact.

Viewpoints closer to the Micron Campus would have partial views during leaf-off conditions, a noticeable change compared to current views. The Viewpoint 61 photo simulation (Figure 3.13-7) shows that there would be no appreciable view of the campus from that location on U.S. Route 11; however, the Viewpoint 73 and 77 photo simulations (Figure 3.13-8 and Figure 3.13-9) show that in areas with less intervening vegetation or fewer structures, the campus would be visible through the trees during leaf-off conditions, but would likely be fully screened when leaves are on the trees. Viewpoints closer to the Micron Campus, such as Viewpoints 35 and 59, would have partially screened views during leaf-off conditions. As shown in the Viewpoint 35 photo simulation (Figure 3.13-10), the tops of the fab buildings would be visible between larger trees and above the shorter tree line. During leaf-on conditions, the Micron Campus would be almost completely obscured, with the tops of buildings barely visible over the tree line.

Figure 3.13-6 Viewpoint 71 Photo Simulation

Viewpoint 71
Photo view direction

Location of Viewpoint

Existing view of 8642 Brewerton Road - a residence eligible for listing on the State/National Register of Historic Places

Proposed Project and Building Heights Outline

Source: AKRF.

Figure 3.13-7 Viewpoint 61 Photo Simulation

Viewpoint 61
Photo view direction

Existing view from the Cicero Golf Store - off U.S. Route 11

Location of Viewpoint

Proposed Project and Building Heights Outline

Source: AKRF.

Figure 3.13-8 Viewpoint 73 Photo Simulation

Viewpoint 73
Photo view direction

Existing view from U.S. Route 11 and the transmission lines near McKinley Road

Location of Viewpoint

Proposed Project Rendering

Source: Jacobs.

Figure 3.13-9 Viewpoint 77 Photo Simulation

Viewpoint 77
Photo view direction

Existing view from CJ's Car America - off U.S. Route 11

Location of Viewpoint

Proposed Project Rendering

Source: Jacobs.

Figure 3.13-10 Viewpoint 35 Photo Simulation

Viewpoint 35
Photo view direction

Existing view from the Cottages at Garden Grove - Meltzer Court

Location of Viewpoint

Proposed Project Rendering

Source: Jacobs.

1-5 Miles East of the Micron Campus

Two designated aesthetic resources, the Stone Arabia School Museum and the Oneida Shores County Park are within the area 1-5 miles east of the Micron Campus site. However, photo simulations of viewpoints closer to the Micron Campus indicate almost no view of the campus farther than a half-mile away during leaf-off conditions. Therefore, there would be no significant aesthetic impact on these resources. Other viewpoints in this area also would not have any views of the campus due to distance and dense intervening vegetation.

North of the Micron Campus

There are four designated aesthetic resources north of the Micron Campus site, including Plank Road Park, The Greens at Beaumont golf club, Lock 23 State Canal Park, and Fort Brewerton Park. Lock 23 State Park and Fort Brewerton Park are more than three miles away and would not have views of the Micron Campus. The Viewpoint 19 photo simulation (Figure 3.13-11) shows that because of flat topography, vegetative screening, and distance, the Micron Campus would only be barely visible through trees from Plank Road Park during leaf-off conditions and obstructed during leaf-on conditions. Views of the campus from The Greens at Beaumont (Viewpoint 30) would be similar to the views from Plank Road Park. Therefore, there would be no significant aesthetic impact on these resources.

Other viewpoints north of the Micron Campus site include a school, commercial properties, churches, and roadways near residences located one mile or farther away. Based on the relatively flat topography and intervening vegetation, the Micron Campus would likely be fully screened from these locations, similar to the Viewpoint 19 photo simulation. Although a portion of the Micron Campus could be visible during leaf-off conditions, the view would be negligible due to distance and extensive intervening vegetation.

Figure 3.13-11 Viewpoint 19 Photo Simulation

Viewpoint 19
Photo view direction

Location of Viewpoint

Existing view from Plank Road Park - a designated resource off Mud Mill Road

Proposed Project and Building Heights Outline

Source: AKRF.

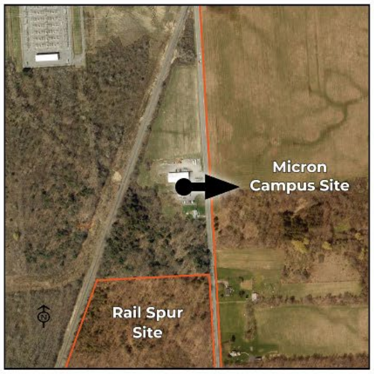
Immediately West of the Micron Campus

Clay Historical Park is the only designated aesthetic resource immediately west of the Micron Campus site. The park would have limited visibility of the Micron Campus over the tree line during leaf-on conditions. This change would be negligible and would not affect users' enjoyment of the resource. Therefore, there would be no significant aesthetic impact on this resource. (The Rail Spur Site, which would be constructed between the Micron Campus and Clay Historical Park, would be visible from the park and present an intervening view of the Micron Campus from the park; see discussion under Rail Spur Site, below).

Other viewpoints immediately west of the Micron Campus site, along Caughdenoy Road, would have unobstructed views of the campus until the proposed campus landscaping matures, at which time there would be some views of the site through and above the landscaped perimeter screening. The Viewpoint 67 and 3 photo simulations (Figure 3.13-12 and Figure 3.13-13) show the anticipated views of the campus buildings from Caughdenoy Road, which would be a noticeable change compared to the current undeveloped site.

The Viewpoint 66 and 20 photo simulations (Figure 3.13-14 and Figure 3.13-15) show that from these locations, each a quarter mile away, the Micron Campus would not be visible during leaf-off conditions. The Micron Campus would likely not be visible from other viewpoints at similar or farther distances in this area due to distance and intervening vegetation.

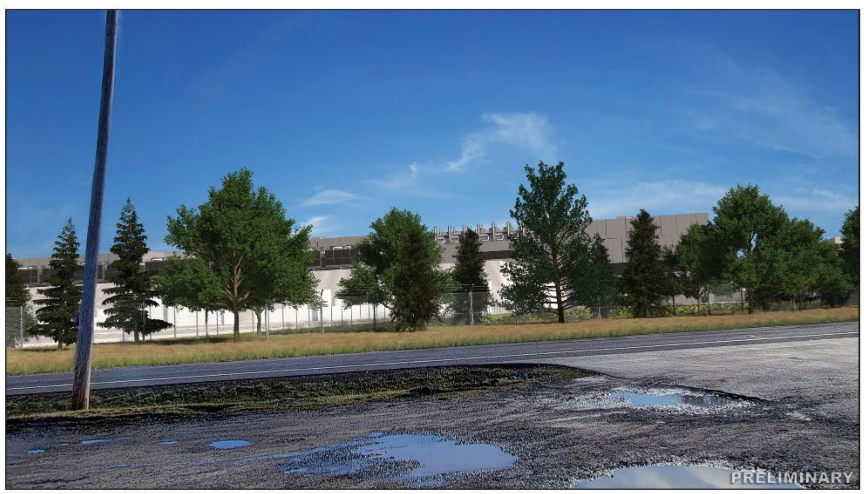
Figure 3.13-12 Viewpoint 67 Photo Simulation



Viewpoint 67
Photo view direction

Existing view from Jerome Fire Equipment - off Caughdenoy Road

Location of Viewpoint



Proposed Project Rendering

Source: Jacobs.

Figure 3.13-13 Viewpoint 3 Photo Simulation

Viewpoint 3
Photo view direction

Existing view from the intersection of NYS Route 31 and Caughdenoy Road

Location of Viewpoint

Proposed Project Rendering

Source: Jacobs.

Figure 3.13-14 Viewpoint 66 Photo Simulation

Viewpoint 66
Photo view direction

Existing view from Freight Yard Brewing - off NYS Route 31

Location of Viewpoint

Proposed Project and Building Heights Outline

Source: AKRF.

Figure 3.13-15 Viewpoint 20 Photo Simulation

Viewpoint 20
Photo view direction

Location of Viewpoint

Existing view from the driveway of Airlane Enterprises – off Verplank Road

Proposed Project and Building Heights Outline

Source: AKRF.

1-5 Miles West of the Micron Campus

Four designated aesthetic resources (Santaro Memorial Park, Clay Park North, Schroeppel House, and Cherrington Park) are within the area 1-5 miles west of the Micron Campus site. However, photo simulations of viewpoints closer to the Micron Campus indicate almost no view of the campus farther than a half-mile away during leaf-off conditions. Therefore, there would be no significant aesthetic impact on these resources. Other viewpoints in this area also would not have any views of the campus due to distance and dense intervening vegetation.

Immediately South of the Micron Campus

Meltzer Park is the only designated resource located immediately south of the Micron Campus site. The Viewpoint 7 photo simulation (Figure 3.13-16) shows that the park would have a partially screened view of the Micron Campus, with buildings partially visible above the trees and, during leaf-off conditions, through the trees. This change in view from Meltzer Park would be minor, as most of the Micron Campus would be screened, even during leaf-off conditions, and would not impede enjoyment of the park. Nighttime visitors to the park would potentially experience limited indirect atmospheric lighting, or skyglow, from the campus lighting sources. However, these changes would not result in a significant aesthetic impact on Meltzer Park.

As shown in the Viewpoint 75 photo simulation (Figure 3.13-17), the Micron Campus would be visible from Stearns Road through the proposed 100-foot landscaping buffer. The Viewpoint 74 photo simulation (Figure 3.13-18) shows that the campus would be visible from Barcaldine Drive, the entrance to a residential neighborhood, through community homes and vegetation. The Viewpoint 76 photo simulation (Figure 3.13-19) shows the view of the campus traveling further west along NYS Route 31. The campus would not be visible from viewpoints farther to the south due to intervening vegetation.

Figure 3.13-16 Viewpoint 7 Photo Simulation

Viewpoint 7
Photo view direction

Location of Viewpoint

Existing view from Meltzer Park parking lot - a designated resource off Stearns Road

Proposed Project and Building Heights Outline

Source: AKRF.

Figure 3.13-17 Viewpoint 75 Photo Simulation

Viewpoint 75
Photo view direction

Existing view from the intersection of Stearns road and NYS Route 31

Location of Viewpoint

Proposed Project Rendering

Source: Jacobs.

Figure 3.13-18 Viewpoint 74 Photo Simulation

Source: Jacobs.

Figure 3.13-19 Viewpoint 76 Photo Simulation

Viewpoint 76
Photo view direction

Existing view from NYS Route 31 near 5158 NYS Route 31

Location of Viewpoint

Proposed Project Rendering

Source: Jacobs.

South of NYS Route 481

Three designated aesthetic resources (Hamlin Marsh Wildlife Management Area (WMA), the Town of Clay Green Area, and Heritage Park) are within the area south of NYS Route 481. The photo simulation for Viewpoint 52 (Figure 3.13-20), which has a clear view of the Hamlin Marsh WMA due to its high elevation, shows that due to the distance and intervening vegetation, the Micron Campus would not be visible during leaf-off conditions. Therefore, there would be no significant aesthetic impact on these resources. The campus also would not be visible from other viewpoints in this area.

Figure 3.13-20 Viewpoint 52 Photo Simulation

Viewpoint 52
Photo view direction

Location of Viewpoint

Existing view from the Hamlin Marsh Wildlife Management Area - a designated resource near the intersection of Bear Road and Sandy Lane

Proposed Project and Building Heights Outline

Source: AKRF.

Rail Spur Site

The Rail Spur Site abuts the CSX freight railroad to the west, the Clay Substation and a fire equipment business to the north, a few commercial businesses and residences to the south, and Caughdenoy Road to the east. As described in Chapter 2, the Rail Spur Site would include rail siding, rail yards, and an off-loading track and facility; the aggregate materials conveyance system; an office building and trailer; a locomotive shed; paved access roads and a parking area; paved storage areas; a backup stockpile area; a stormwater management area; and lighting. The conveyance system would be elevated approximately 18 feet over Caughdenoy Road to connect to the Micron Campus.[121] As described in Chapter 2, rail cars would transport material to the Rail Spur Site daily during construction of the Micron Campus phases. The Viewpoint 67 photo simulation (Figure 3.13-21) shows how the perimeter of the site would appear from the north, just off Caughdenoy Road.

The Rail Spur Site would be enclosed by a 10-foot chain-link fence with green privacy screening. Site structures and operations would be set back at least 100 feet from adjacent roads, with most development set farther back, abutting the railroad tracks. In addition, a substantial wooded buffer zone would be maintained between the developed portion of the site and the existing residences located to the south of the site.

Lighting design for the site has not yet been finalized, but is expected to include a total of 28 lighting fixtures, roughly half warm amber (2,700 Kelvin) LED lights and the other half cool white (5,000 Kelvin) LED lights. The warm amber lights would be mounted on 25-foot poles at entrances and parking areas and the cool white lights would be mounted on 60- to 80-foot-tall poles at the rail yard and other operational areas. Wall-mounted lighting fixtures would be placed at building entrances. The lighting would be concentrated toward the western half of the site, except for a few lights around the conveyance system extending from the center of the site to Caughdenoy Road to the east. As with the Micron Campus, screening, setbacks, landscaping, and lighting would be subject to the municipal site plan approval process.

Clay Historical Park, located approximately 300 feet southwest across the railroad tracks, is the only designated aesthetic resource within a quarter-mile radius of the Rail Spur Site. Because all existing vegetation on the Rail Spur Site that could otherwise provide screening to the park would be removed as part of site construction, there would be open views of the Rail Spur Site from Clay Historical Park during leaf-off and leaf-on conditions. The photo simulation for Viewpoint 72 (Figure 3.13-22), in the park's northern parking area, shows that the Rail Spur Site would be highly visible from the park during leaf-off conditions. However, Clay Historical Park currently exists immediately adjacent to an active rail line and, in fact, draws much of its history from the prior use of that rail line. In addition, most visitor activity at the park occurs inside the park's on-site museum, historic barn, and replica of a historic log cabin. Therefore, the Rail Spur Site would not have a significant aesthetic impact on Clay Historical Park.

[121] As noted above, the conveyance system would be removed after construction of the Fab 4 building pad is completed, but would remain in place and visible until that time, when Fabs 1-3 would be operating.

Figure 3.13-21 Viewpoint 67 Photo Simulation (Rail Spur Site)

Viewpoint 67
Photo view direction

Location of Viewpoint

Existing view from near Jerome Fire Equipment - off Caughdenoy Road

Proposed Project Rendering

Source: Ramboll.

Figure 3.13-22 Viewpoint 72 Photo Simulation

Viewpoint 72
Photo view direction

Location of Viewpoint

Existing view from Clay Historical Park – off of NYS Route 31

Proposed Project Rendering

Source: Ramboll.

Childcare Site

The Childcare Site would include a childcare center, healthcare center, and recreation center, as well as the other features described in Section 2.1.3, including parking lots, a tennis/pickleball court, and a soccer field. The buildings would be one story tall and would be visible from Caughdenoy Road. Development on the Childcare Site would be concentrated in areas where former farmland had previously cleared vegetation and would largely preserve existing vegetative buffer along the exterior of the property. The new buildings would be set back 100 feet or more from the property line. The site would include perimeter tree plantings and parking lot vegetative screening, including a mix of trees, shrubs, and grasses. Landscaping and building placement would be reviewed during the Town of Clay Planning Board site plan approval process. Although the Childcare Site would be visible from the road and nearby residences, its low profile and uses would be consistent with other structures in the area. There are no designated aesthetic resources near the site.

Outdoor lighting at the Childcare Site would include 26-foot-tall warm white LED lights installed along the driveways and parking areas and around the buildings, and 80-foot-tall stadium-style cool white (5000 Kelvin) LED lights installed along the borders of the tennis/pickleball court and soccer field. Both of these lighting types would be downward-directional and concentrated in interior portions of the site to prevent light spillage beyond the property line. Lighting of the tennis/pickleball court and soccer field would be limited to approximately 9:00 p.m. in the spring, summer, and fall. All lights on the Childcare Site would be set back a minimum of 50 feet from the frontage before Caughdenoy Road and the shelterbelts (windbreaks) along the northern and western property boundaries. The lighting plan for the Childcare Site would be reviewed during the site plan approval process and would adhere to Town of Clay lighting restrictions, which prohibit off-site light spillage, require fixtures to be fully enclosed cut-off style, and require non-residential lighting to be extinguished 30 minutes after closing.

Connected Actions

As noted in Section 3.13.1, the study area was limited to a quarter-mile radius around the Clay Substation expansion area, GRS 147, the OCWA LOWTP and Terminal Campus, and the IWWTP, given that those Connected Actions would primarily involve smaller-scale development with more limited off-site visibility. The remaining linear improvements would be of limited above-ground height or would be buried underground and therefore were not included in the visual effects analysis; those improvements would be anticipated to have negligible effects on existing community character.

National Grid would expand the existing Clay Substation located immediately north of the Rail Spur Site by an additional 10 acres. There are no designated aesthetic resources near the site. The expansion would result in the permanent closure of the portion of the Snow Owls Snowmobile Trail that currently runs through the site. The expanded substation would be visible from the surrounding area, but the site already includes large overhead electric transmission lines.

National Grid also would expand existing GRS 147 to the north and east. Santaro Ballfields at Legacy Sports Park / Clay Park North is a designated aesthetic resource located to the north of the GRS 147 property. However, although the expanded station would be visible from the street, the expanded features would appear as very minor changes compared to the existing structure, equipment, and chain-link fence on the site. Therefore, the expansion would not have a significant aesthetic impact on the designated aesthetic resource, and would present little noticeable change compared to its present appearance.

The OCWA LOWTP improvements would be confined within the treatment plant's existing footprint, which is currently surrounded by dense vegetation that provides screening from nearby roads, and there are no designated aesthetic resources nearby. The Terminal Campus improvements also would be confined within the existing campus footprint. Cherrington Park is a designated aesthetic resource located immediately south of the campus. However, existing water tanks on the campus would obstruct any views of the campus improvements from the park. Therefore, there would be no significant aesthetic impact on this resource. In addition, an existing large berm currently blocks the view from the Morgan Square Senior Apartments parking lot.

The IWWTP would be located in the northern portion of the Oak Orchard site and would generally include structures with a maximum height of approximately 45 feet (up to three stories), though certain components, such as crystallizers, could be as tall as 75 feet, depending on final design. The IWWTP would require removal of some trees in the northern portion of the site. However, an approximately 100-foot buffer of existing mature tree screening would be maintained between the IWWTP and the existing houses on Oak Orchard Road. Many of the existing trees along the driveway to the facility and along the site's western boundary also would be maintained, limiting visibility from locations to the northwest of the site. As noted above, due to its low-lying position surrounded by sloping hills and dense vegetation, the site is not visible from public roadways. Overall, given the extremely limited visibility of the current Oak Orchard site and similar low visibility of the proposed IWWTP structures, the IWWTP would not have noticeable visual effects on viewpoints in the vicinity. Schroeppel House and the Barge Canal Historic District are designated aesthetic resources within a quarter-mile radius of the site, but for the same reasons, there would be no significant aesthetic impact on those resources.

Community Character

Construction and operation of the Proposed Project, in particular the Micron Campus, would change the surrounding community character from that of a primarily low-density, rural, and undeveloped area to a large industrial campus and employment center. The built environment would change from generally smaller-scale one- and two-story buildings to large industrial buildings up to 160 feet in height. The natural environment present on the property (trees, meadowlands, and wetlands) would be replaced by several buildings, some with footprints of more than one million sq. ft. The Micron Campus would be lit by streetlights mounted on 26-foot poles, and driveways and access roads would be lit with shorter, 13- to 16-foot streetlights. Perimeter landscaping would include a 50-foot-wide buffer along Caughdenoy Road and a 100-foot-wide buffer along NYS Route 31.

The phased construction and operation of the Proposed Project also would involve construction activity at the site over a 16-year period with substantial traffic and a growing worker population. At full Micron Campus operational capacity in 2045, the on-site workforce would total approximately 9,300 people, with a peak total headcount of 12,436 workers occurring in 2041 when most construction workers would still be on site and all four fabs would be in operation. As described in Section 3.11 (Transportation and Traffic), the Proposed Project would generate numerous transportation and traffic effects that will be felt across the communities surrounding the Micron Campus. In addition, as described in Section 3.12 (Noise and Vibration), the Proposed Project would generate noticeable combined noise effects from construction activity and traffic. The Rail Spur Site also would be part of the changing community character as a result of its industrial use, construction activity, and noise, although its operations would decrease following full build-out of the Micron Campus. Although the Childcare Site and the Connected Actions would contribute to the overall changes, in general they would involve lesser degrees of construction activity and new uses for surrounding communities.

However, although the changes described above would change community character in the area, with the Micron Campus in particular being a significant and highly noticeable change to the current character of the immediate surrounding area, these changes would be consistent with local zoning designations, including the industrial zoning designation of the Micron Campus, and would also be consistent with local policies and comprehensive plans. Although the Proposed Project would not directly affect community cohesion, as it would not physically separate surrounding communities from vital facilities and resources, as discussed below, it may indirectly affect community cohesion through induced growth.

As described in Section 3.1 (Land Use, Zoning, and Public Policy) and Appendix D, the industrial development of the area would likely result in beneficial effects to the community by fulfilling local economic development policy goals. The Proposed Project would be consistent with Plan Onondaga's goal to expand economic development within the County. The plan specifically cites the Proposed Project as an opportunity to realize Onondaga County's vision of economic revitalization that OCIDA has led since the early 1990s. The Proposed Project also would be consistent with the Town of Clay Northern Land Use Study's goal to redevelop the WPCP, and the Town of Cicero Comprehensive Plan's goal to develop new infrastructure to support economic growth.

Growth Inducing Effects

The growth inducing effects of the Preferred Action Alternative would gradually bring substantial changes to local communities and the wider region surrounding the Proposed Project over time. These changes would likely produce their own visual effects and changes to community character across the five-county region from increases in population and higher-density residential, commercial, and industrial development in the area takes shape (see Appendix C). The region's current character varies widely from dense, urbanized areas such as the City of Syracuse, to suburbs, and rural forested and agricultural lands. As described above, the Proposed Project would be a major employment center that would attract a large number of people to Central New York over time, creating the need for new homes and businesses to support Micron, the semiconductor supply chain, and a growing population.

New development would still be subject to local land use regulations, such as setbacks, height restrictions, and landscaping and lighting requirements. Other large projects also would be subject to site plan approvals and may be subject to the SEQRA process, which may include consideration, as here, of visual effects or aesthetic impacts on designated aesthetic resources. If future growth is concentrated in "centers," and does not occur on contiguous farmland, it would be consistent with Plan Onondaga's goal to encourage compact development to avoid sprawl and maintain rural character.

Induced growth could affect community cohesion in the five-county region in the future. Existing community patterns would potentially change over time as a result of population increases and new commerce occurring in and throughout the region. However, changing community composition alone would not adversely affect community cohesion. On the whole, induced growth could gradually lead to significant changes to the visual appearance and character of communities in the five-county region.

Summary of Effects

As outlined above, the Preferred Action Alternative, and construction and operation of the Micron Campus and Rail Spur Site in particular, would be highly visible from certain surrounding areas and would produce noticeable visual effects from multiple viewpoints. Visual effects would be most apparent from viewpoints closest to the Micron Campus, but would become less apparent or would not occur beyond approximately a half-mile distance from the site. Overall, these visual effects would be significant from the standpoint of viewers at closer distances. Separately, there would be no significant aesthetic impacts on any designated aesthetic resources in range of the Proposed Project or Connected Actions. Lastly, the Preferred Action Alternative would result in changes to community character based on the combination of the visual effects described above with other effects described in the EIS, such as increased traffic and noise, and the effects of induced growth (reflecting an overall change from a low-density, rural, and undeveloped area to a site with a large industrial manufacturing facility). However, these changes would be consistent with community character as expressed in local land use regulations, policies, and plans.

3.13.5 BMPs and Mitigation Measures

As described above, the Micron Campus and the Rail Spur Site would include various setbacks, perimeter vegetation screening, on-site vegetative screening, and downward directional, shielded, warm lighting where feasible to help reduce overall visual effects on the surrounding area. The Childcare Site and the Connected Actions are not anticipated to result in highly noticeable visual effects on surrounding areas once completed. The Preferred Action Alternative would not result in any significant aesthetic impacts on designated aesthetic resources; therefore, no mitigation for those resources is required. Overall, construction of the Proposed Project and Connected Actions would be consistent with community character as expressed in local land use policies and zoning.

3.14 COMMUNITY FACILITIES, OPEN SPACE, AND RECREATION

This section analyzes the effects of the No Action Alternative and the Preferred Action Alternative on community facilities, open space, and recreation. This includes an analysis of both the effects of the alternatives on local police, fire, and emergency medical services (EMS), healthcare facilities, school districts, and local parks and recreation areas.

The phased construction and operation of the Proposed Project would likely require additional fire service resources over time to ensure adequate response capacity over the longer term. Other services would be anticipated to enhance existing capacity to accommodate Proposed Project construction and operation and the needs of growing populations in the area.

3.14.1 Legal and Regulatory Setting

SEQRA requires consideration of a proposed action's potential effects on community facilities, which include police and fire services, EMS, healthcare facilities, and school districts, as well as potential effects on open space and recreational resources, such as nature preserves, parks, and trails.

3.14.2 Affected Environment

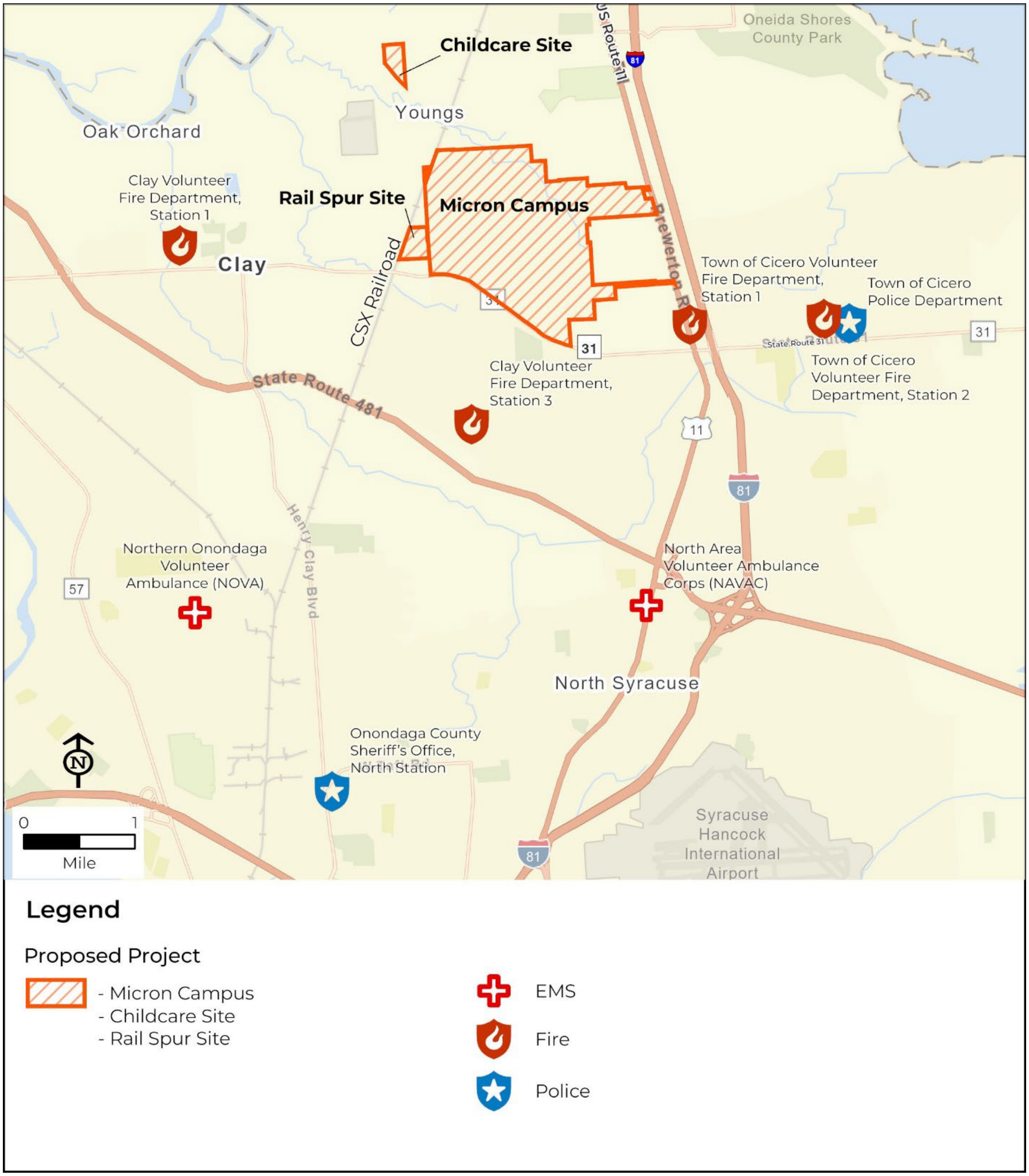
This section describes the affected environment within the study areas for community facilities, open space, and recreation: the Towns of Clay and Cicero for police, fire, EMS, and school districts; Onondaga County for healthcare facilities; and a 1-mile radius around the WPCP for open space and recreational resources. For additional information on the study area methodology, see Appendix P-1.[122]

3.14.2.1 Police, Fire, and EMS

Figure 3.14-1 and Table 3.14-1 below identify the existing police, fire, and EMS within the Town of Clay and the Town of Cicero. These services are summarized following the figure and table.

[122] The Connected Actions would not directly displace community facilities, introduce new uses in the areas where they would be located, or increase demands on public services or school districts, and would generate only a nominal increase in employees over their long-term operation. Therefore, Section 3.14 (Community Facilities, Open Space, and Recreation) does not further evaluate the effects of the Connected Actions on community facilities, but it does consider their effects on open space and recreation.

Figure 3.14-1 Police, Fire, and EMS



Sources: Websites for Clay Volunteer Fire (n.d.), Cicero Volunteer Fire (n.d.), Onondaga County Sheriff's Office (n.d.), Cicero Police Department (n.d.), Northern Onondaga Volunteer Ambulance (NOVA; n.d.), and North Area Volunteer Ambulance Corps (NAVAC; n.d.). Note: NYS Police Station and Syracuse Fire Department are not shown on the map because of their distances from the WPCP, where the proposed Micron Campus would be built.

Table 3.14-1 Police, Fire, and EMS

Service	Staffing Levels / Capacities	Distance*
Police Services		
Cicero Police Department, 6200 NYS Route 31, Cicero, NY 13039	25 officers, combination of full and part time, 15 of whom operate in the field.	2.5 miles
Onondaga County Sheriff's Office, 7120 Henry Clay Blvd, Liverpool, NY 13088	750 employees (police officers and administrative staff); has a patrol car that operates in the vicinity of the WPCP.	5 miles
New York State Police, 3071 Belgium Rd, Baldwinsville, NY 13027	5,000 troopers across the state; Troop D has a patrol car that operates in the vicinity of the WPCP.	8 miles
Fire Services		
Clay Fire Station 3, 8129 Caughdenoy Rd, Clay, NY 13041	One ladder truck, three engines, one heavy rescue vehicle, and three squad cars.	1.5 miles
Clay Fire Station 1, 4383 NYS Route 31, Clay, NY 13041		2.5 miles
Cicero Fire Station 1, 8377 Brewerton Rd, Cicero, NY 13039	Three squads, one pickup truck, one heavy rescue vehicle, three engines, one ladder truck, and four Chief vehicles.	1 mile
Cicero Fire Station 2, 6109 NYS Route 31, Cicero, NY 13039		2 miles
Syracuse Fire Station 5, 110 N Geddes St, Syracuse, NY 13204	Engine Company 5, Truck 3, Hazmat, and Car 2.	9.5 miles
EMS		
North Area Volunteer Ambulance Corps (NAVAC), 603 N Main St, North Syracuse, NY 13212	75 career staff, six ambulances, and a support vehicle.	2.5 miles
Northern Onondaga Volunteer Ambulance (NOVA), 4425 Buckley Rd, Liverpool, NY 13090	80 career staff, eight ambulances, and two advanced life support first response vehicles.	5 miles
American Medical Response (AMR) of Central New York, 101 Richmond Ave, Syracuse, NY 13204	Primary provider of ambulance services in Onondaga, Cayuga, Herkimer, Montgomery, and Schoharie Counties.	9.5 miles

Source: Websites for Cicero Police Department (n.d.), Onondaga County Sheriff's Office (n.d.), New York State Police (n.d.), Clay Volunteer Fire (n.d.), Cicero Volunteer Fire (n.d.), Syracuse Fire Department (2025), NAVAC (n.d.), NOVA (n.d.), and AMR (2025). Note: *Approximate distance from WPCP.

The only police service with a station located in the community facilities study area is the Cicero Police Department. However, the Onondaga County Sheriff's Office and the New York State Police both have patrols and respond to incidents within the Towns of Clay and Cicero and in the surrounding area. The regional 911 system coordinates incident response among these three police services and dispatches the nearest available units from the services to incidents on a case-by-case basis.

The Town of Clay Volunteer Fire Department (Clay Fire) and the Town of Cicero Volunteer Fire Department (Cicero Fire) are the primary fire services in the Towns of Clay and Cicero, and each operates out of two stations. Clay Fire and Cicero Fire coordinate with the City of Syracuse Fire Department for responses to incidents involving potential hazardous materials, as the Syracuse Fire Department employs a specialty hazardous material response unit.

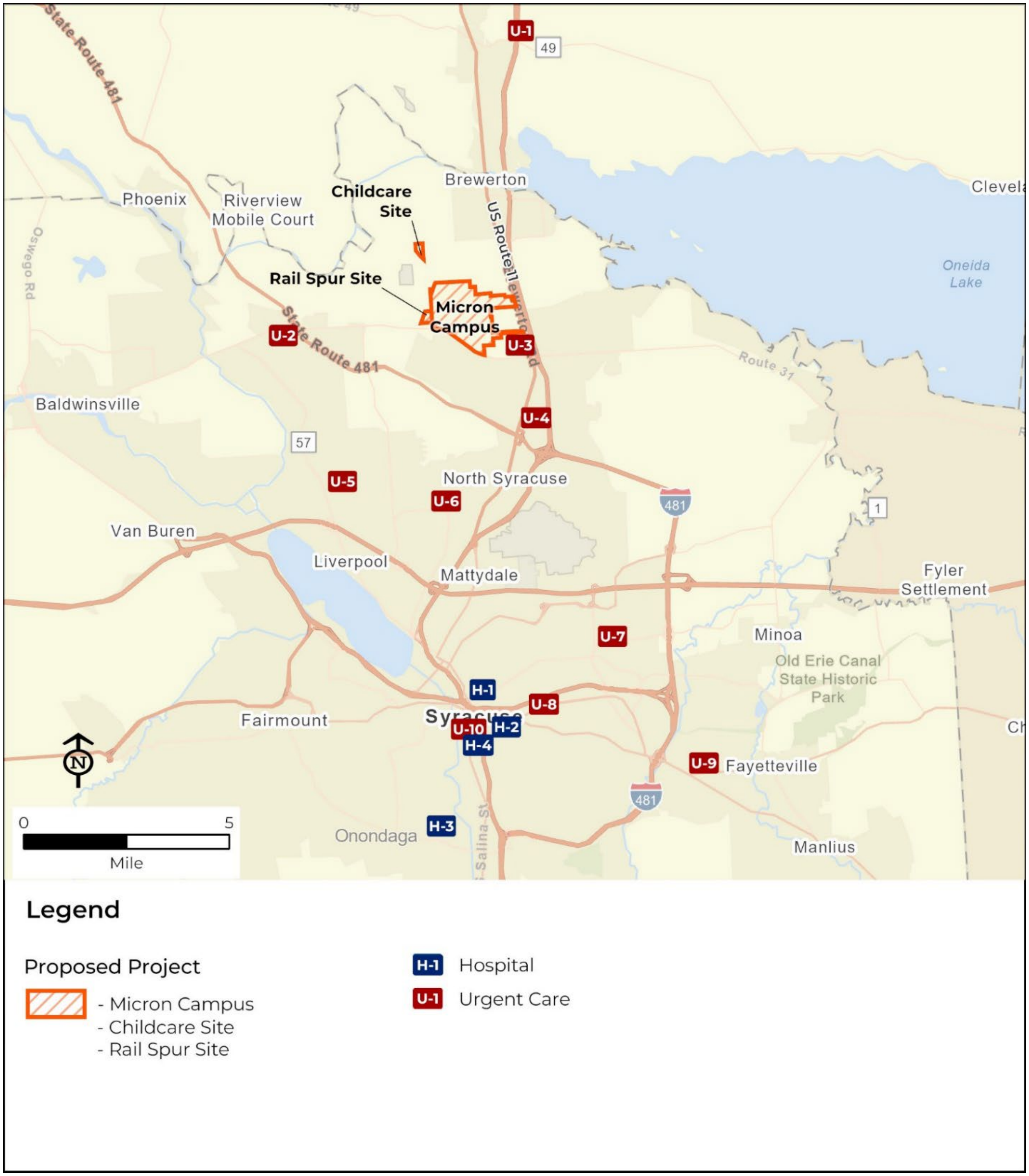
Three EMS providers operate in the study area: NAVAC, NOVA, and American Medical Response (AMR) of Central NY. Despite their names, NAVAC and NOVA are not volunteer-based services and are comprised of paid employees. NAVAC provides basic and advanced life support ambulance services to a 64-square mile area within the North Syracuse Central School District (CSD) (NAVAC, n.d.). NOVA provides advance life support medical transportation to the Town of Clay and mutual aid areas (NOVA, n.d.). AMR of Central NY serves communities in Onondaga, Cayuga, Madison, Herkimer, Montgomery, Schoharie, Otsego, and Chenango Counties and is the area's only Commission on Accreditation of Ambulance Services (CAAS)-accredited ambulance service, with paramedics and EMTs responding to more than 76,687 calls each year (AMR, 2025).

The Onondaga County Department of Emergency Management (DEM) administers mutual aid coordination agreements between Clay Fire, Cicero Fire, the Syracuse Fire Department, and other local fire services. DEM also is responsible for coordinating local EMS providers to ensure that capacity is available to effectively manage emergency response County-wide, and provides EMS networking, training, and problem-solving support. (Onondaga County, n.d.).

3.14.2.2 Healthcare Facilities

Onondaga County has a network of healthcare facilities operated by both nonprofit and private entities that provide services on a fee-for-service model. These facilities include nonprofit hospitals with emergency departments, private urgent care centers, and private practices and specialists' offices. Figure 3.14-2 and Table 3.14-2 below identify existing hospitals and urgent care centers in Onondaga County. These healthcare facilities are summarized following the figure and table. For additional information on healthcare facilities in the five-county region, see Appendix P-2.

Figure 3.14-2 Healthcare Facilities



Sources: NYSDOH (n.d.) and online search engine results.

Table 3.14-2 Healthcare Facilities

Map	Healthcare Facility
H-1	St. Joseph's Hospital Health Center, 301 Prospect Ave, Syracuse, NY 13203
H-2	Upstate University Hospital, 750 East Adams St, Syracuse, NY 13210
H-3	Upstate Community Hospital, 4900 Broad Rd, Syracuse, NY 13215
H-4	Crouse Hospital, 736 Irving Ave, Syracuse, NY 13210
U-1	Central Square Urgent Care, 3045 East Ave, Central Square, NY 13036
U-2	WellNow Urgent Care, 3840 NYS Route 31, Bayberry, NY 13090
U-3	Drakos Urgent Care, 5586 Legionnaire Dr, Cicero, NY 13039
U-4	WellNow Urgent Care, 7851 Brewerton Rd #1, Cicero, NY 13039
U-5	WellNow Urgent Care, 7375 Oswego Rd, Liverpool, NY 13090
U-6	WellNow Urgent Care, 4995 Wintersweet Dr, Liverpool, NY 13088
U-7	WellNow Urgent Care, 6227 Thompson Rd, Syracuse, NY 13206
U-8	WellNow Urgent Care, 1600 Erie Blvd E, Syracuse, NY 13210
U-9	WellNow Urgent Care, 6870 E Genesee St, Fayetteville, NY 13066
U-10	Quick Care, 819 S Salina St, Syracuse, NY 13202

Sources: NYSDOH (n.d.) and online search engine results. Note: the hospitals (H-1 to H-4) are all approximately 10 miles from the WPCP. For additional information on healthcare facilities in Onondaga County and the broader five-county region, see Appendix P-2.

The U.S. Department of Health and Human Services has designated portions of Onondaga County as medically underserved areas (MUAs), which are defined as geographical areas where residents lack access to primary care services due to the lack of healthcare providers and other staffing shortages, including shortages of primary care physicians, dentists, and mental health professionals serving low-income and Medicaid-eligible populations (HRSA Map Tool, n.d.). A number of MUAs have been identified in and around the City of Syracuse, including the Onondaga Nation Reservation (HPSA Find, n.d.). Because of these provider and staffing shortages, hospitals in Syracuse experience emergency room overcrowding and longer than average wait times (see Appendix P-2).

3.14.2.3 Schools

Figure 3.14-3 and Table 3.14-3 below identify the six public school districts overlapping the Towns of Clay and Cicero, and their historical enrollment trends (considered under Growth Inducing Effects in Section 3.14.3.2).

Figure 3.14-3 Public School Districts overlapping Study Area

Source: Onondaga County Planning Agency GIS (Onondaga County Planning Agency, 2025)

Table 3.14-3 Public School District Enrollment in Study Area

School District	2000–2001 Enrollment	2023–2024 Enrollment	Change
North Syracuse CSD	10,156	7,486	-26%
Baldwinsville CSD	5,746	5,228	-9%
Liverpool CSD	8,722	6,641	-24%
Central Square CSD	4,978	3,410	-32%
Phoenix District CSD	2,543	1,590	-38%
East Syracuse-Minoa CSD	4,025	3,176	-21%

Sources: NYS IRS Student Information Repository System (SIRS) (NYSED, n.d.-a); New York State Education Department (NYSED) Basic Education Data System (NYSED, n.d.-b).

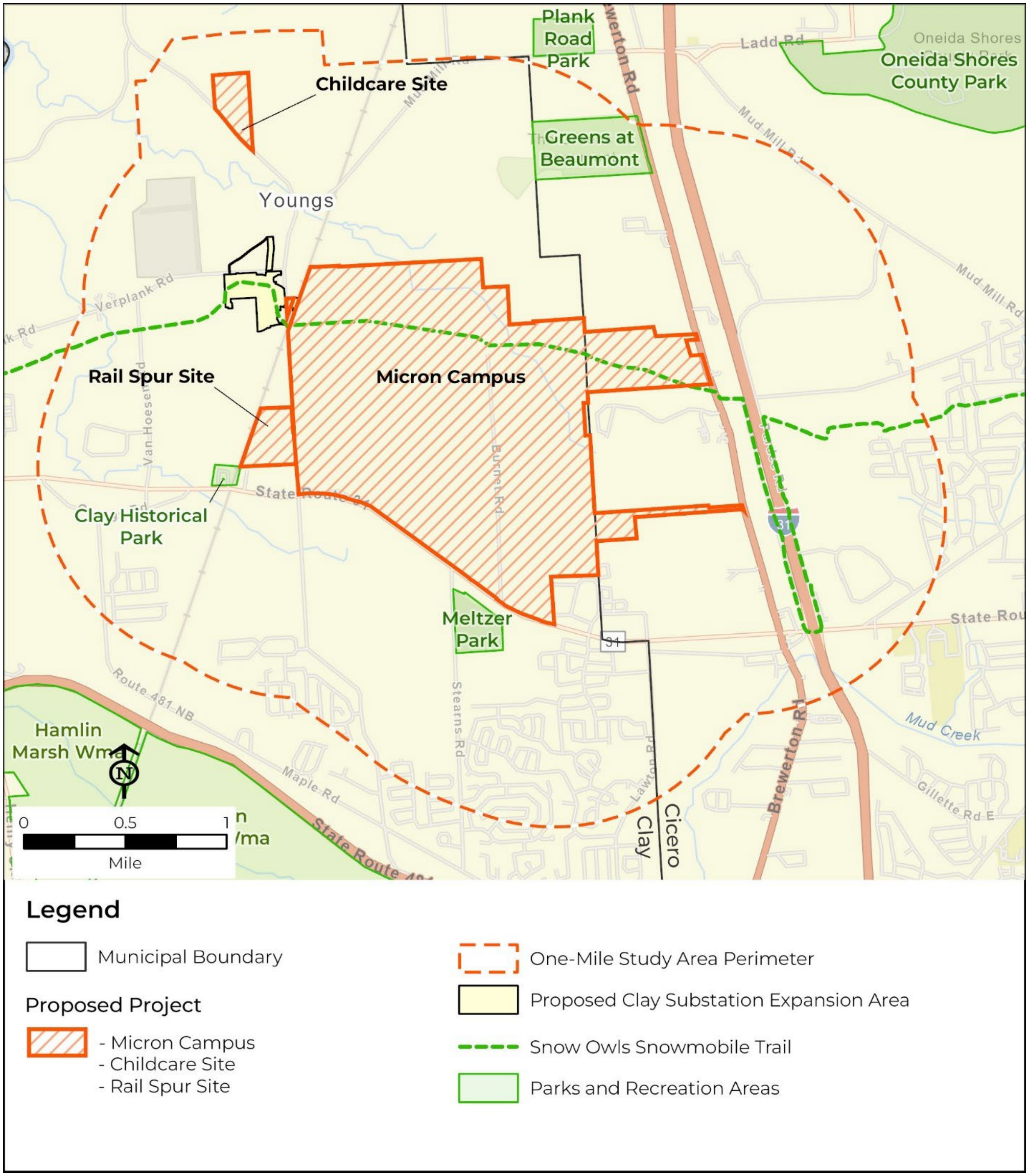
The North Syracuse CSD spans both the Towns of Clay and Cicero and has an enrollment of 7,486 students as of the 2023-2024 school year. The Baldwinsville, Liverpool, Central Square, and Phoenix CSDs overlap the Town of Clay, while the East Syracuse-Minoa CSD overlaps the Town of Cicero. Each of these six school districts have experienced declining enrollment since 2000 (NYSED, n.d.-a). Other factors affecting school enrollment and capacity include building closures, staffing levels, and budgets (discussed further in Section 3.15, Socioeconomic Conditions), however, these factors can vary from school to school and year to year.

There are 24 private schools in Onondaga County. According to New York State Education Department (NYSED) data, approximately 12 to 15 percent of students in the five-county region attend private schools.

3.14.2.4 Open Space and Recreational Resources

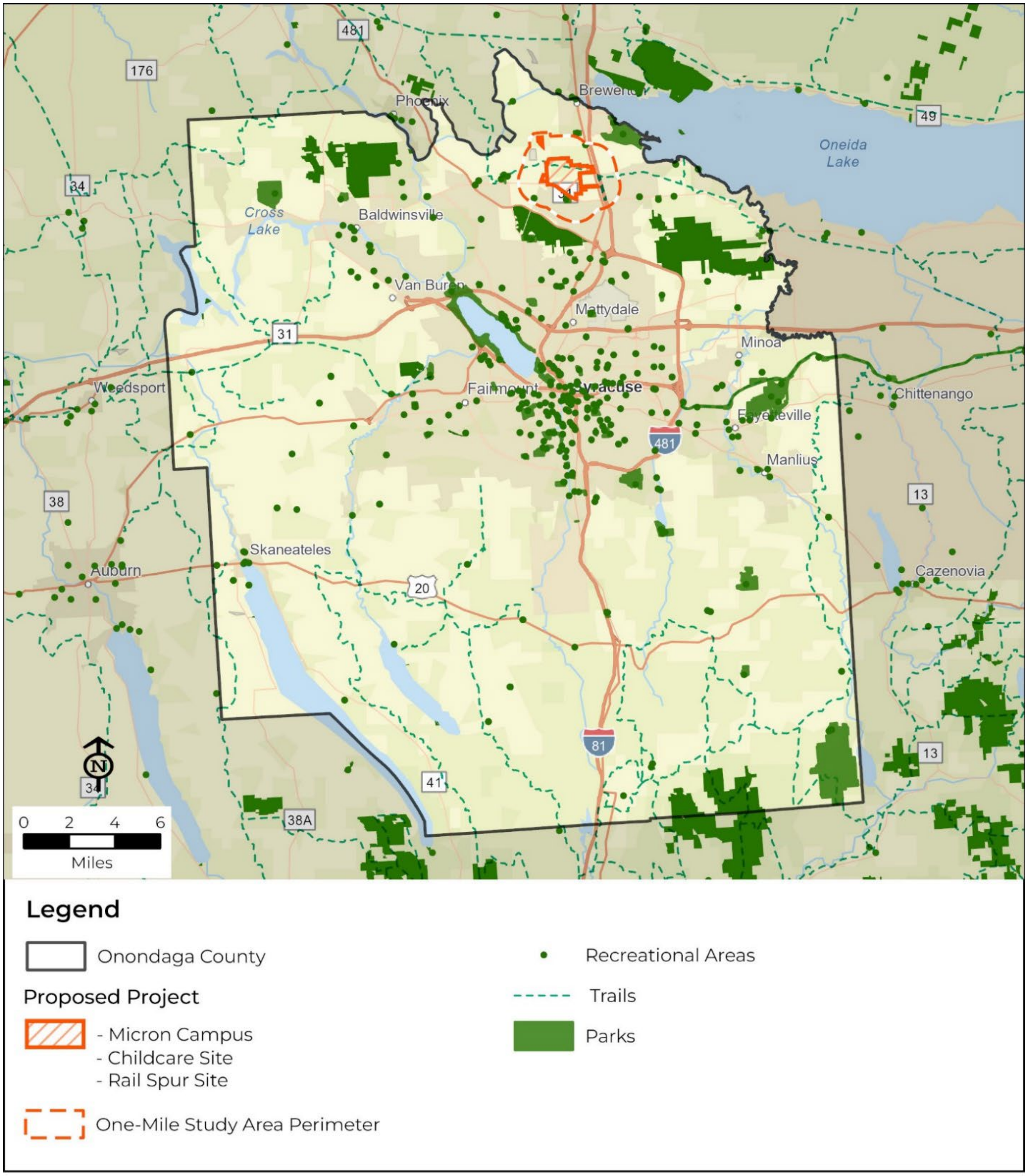
Figure 3.14-4 and Table 3.14-4 below identify the open space and recreational resources located within a 1-mile radius of the WPCP (discussed following the table). Figure 3.14-5 below shows the regional park system in Onondaga County (considered under Growth Inducing Effects in Section 3.14.3.2).

Figure 3.14-4 Open Space and Recreational Resources



Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA; NYSDEC.

Figure 3.14-5 Regional Park System



Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA; NYSDEC.

Table 3.14-4 Open Space and Recreational Resources in Study Area

Resource	Description / Use
The Greens at Beaumont, 9113 Brewerton Rd, Brewerton, NY 13029	Local family run business, golf club, and golf course.
Meltzer Park, 8400 Stearns Rd, Clay, NY 13041	Local park with baseball and soccer fields, tennis and pickle ball courts, playground, and picnic area.
Clay Historical Park, 4483 NYS Route 31, Clay, NY 13041	Local historic park with railroad museum, historic barn, and replica of historic log cabin.
Snow Owls Snowmobile Trail (23-mile trail; see Figure 3.14-4)	Local trail running through Towns of Clay and Cicero and the northern portion of the WPCP.

Sources: Online search engine results. Note: *Approximate distance from WPCP.

The Greens at Beaumont, located along U.S. Route 11 to the north of the WPCP, is a local business with an 18-hole public golf course surrounded by forested area. Meltzer Park, located just south of the WPCP across NYS Route 31, is one of four regional recreational areas maintained by the Town of Clay Recreational Department. The park totals 35 acres, is used for organized league sports and large functions, and includes amenities such as a pavilion, tennis, pickleball, and basketball courts, and baseball, little league, and soccer fields. The Clay Historical Park, located just southwest of the proposed Rail Spur Site across the CSX Railroad line, includes a small railroad museum, a historic barn, and a replica of a historic log cabin. It does not include recreational amenities but is used for Town of Clay Recreation Department programming.

The Snow Owls Snowmobile Trail is a 23-mile snowmobile trail that is privately maintained through year-to-year agreements with private landowners. The trail runs east-west through the Towns of Clay and Cicero and north into Oswego County. The trail runs through the northern portion of the WPCP under the existing high-voltage power lines connecting to the National Grid Clay Substation, and through the proposed Clay Substation expansion area. A four-mile segment of the trail in Oswego County runs parallel to OCWA's existing clear water transmission main from the LOWTP to the Terminal Campus. The trail is part of a network of hundreds of miles of trails across the State (Snow Owls Snowmobile Club, n.d.).

Outside the 1-mile radius around the WPCP, the Town of Clay includes approximately 28 neighborhood parks, which are generally located in more densely populated areas and designed for activities such as recreational sports leagues. The Clay Recreation Department also maintains three nontraditional public spaces: the Clay Historical Park (noted above), the Three Rivers Park for fishing, and the Black Creek Park / Project Green for gardening. As shown in Figure 3.14-5, there are numerous other open spaces within Onondaga County, including three NYSDEC WMAs (Three Rivers Park (noted above), Hamlin Marsh, and Cicero Swamp).

3.14.3 Environmental Consequences

3.14.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. There would be no additional demands as a result of the Proposed Project or Connected Actions on existing police, fire, or EMS operating in the Towns of Clay and Cicero, no additional demands on healthcare facilities in Onondaga County, and no additional demands on schools. There also would be no displacement of existing open space or additional demands for open space or recreational resources as a result of the Proposed Project or Connected Actions.

Other announced or planned projects in the vicinity of the WPCP (see Section 3.1 (Land Use, Zoning, and Public Policy) and Table 3.1-2) could still generate increased demand for police, fire, and EMS, or for open space or recreational resources. Existing conditions within MUAs also would likely continue and could be exacerbated by other announced or planned projects. The six school districts overlapping the Towns of Clay and Cicero could experience some increases in enrollment due to planned residential developments, but may continue to experience an overall net decline in enrollment due to the large trending decline in enrollment in the Towns of Clay and Cicero. Therefore, under the No Action Alternative, the only effects on community facilities, open space, and recreation would be from planned development, but the direct and indirect effects of the planned development are not anticipated to be adverse.

3.14.3.2 Preferred Action Alternative

This section describes the potential direct and indirect effects of the Preferred Action Alternative on community facilities, open space, and recreation. Direct effects on community services would include physical alterations to a facility, whether by displacement or other physical changes. Indirect effects would include increased demands for facilities and services from incidents or other needs associated with the Proposed Project or as a result of induced growth.[123]

Construction Effects

Police, Fire, and EMS

Construction of the Proposed Project would potentially require occasional calls to local police and fire services and EMS serving the Towns of Clay and Cicero for incidents at the proposed Micron Campus, Rail Spur Site, or Childcare Site. In general, Micron and its contractors would implement and follow construction safety BMPs (described in Section 3.14.4 below) to avoid non-essential first responder calls and minimize construction incidents requiring police, fire, or EMS response, which would typically only include serious emergencies such as crime, active fires, and heart attacks, strokes, or other severe accidents or injuries.

Police calls during construction would be anticipated to be relatively rare. Micron would contract with private security services to guard Proposed Project construction sites and areas where hazardous materials would be stored, which would be enclosed by security fencing, throughout the construction period and during operations. Private security would call local police services should any situation escalate, as needed, or in the event an incident, accident, or police report would need to be filed. With these personnel and procedures in place, Micron and local police services would

[123] As noted in Section 3.14.2, Section 3.14 does not evaluate the effects of the Connected Actions on community facilities, but it does consider their effects on open space and recreation.

be anticipated to have adequate capacity to address any relevant needs associated with Proposed Project construction activities.[124]

Calls to local fire services during construction also would be anticipated to be relatively rare and consistent with the potential fire response needs for a typical large-scale construction project. As part of construction planning, Micron would engage closely and collaboratively with local fire departments, including Clay Fire and Cicero Fire, to familiarize local fire service personnel with any potential Proposed Project construction hazards such as construction site fuel and chemical storage, jointly prepare to implement BMPs for construction fire safety, and ensure compliance with applicable fire protection code requirements. Through these efforts, Micron and local fire services would be anticipated to have adequate capacity to address any relevant needs associated with Proposed Project construction activities.

Medical incidents would potentially be relatively more common than police and fire calls, given the nature of occupational hazards associated with large-scale construction project activities. To ensure continuous front-line coverage during construction of the Proposed Project, Micron would continuously employ construction site safety and EHS personnel to respond to and contain a range of construction incidents, and would continuously employ its ERT to address medical incidents.

For a complete summary of the ERT and its roles and responsibilities, see Appendix L-3. As relevant here, in the case of most construction incidents involving any on-site injury or sudden illness, ERT members would be on hand to provide immediate care and support to any affected construction workers and personnel. ERT members would be trained in the OSHA's hazardous communication and emergency response standards and State and National Emergency Medical Technician-Basic (EMT-B) standards (an entry-level certification for emergency medical care). An on-site Occupational Medical Director (physician) would oversee the ERT's medical response protocols in accordance with the National Incident Management System/Incident Command System (NIMS/ICS) (a standardized approach to incident management developed by the U.S. Department of Homeland Security). EMT-B certified personnel are trained in the basic knowledge and skills necessary to stabilize patients in incidents ranging from routine medical evaluation to life-threatening emergencies, using basic emergency medical equipment. ERT members also would be trained in technical confined space and high-angle rescue procedures and certified in OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standards (see Section 3.9, Human Health and Safety).

In addition, as part of the construction of the Proposed Project, Micron would establish a dedicated on-site construction occupational health clinic (separate from the proposed Childcare Site healthcare center) staffed with an occupational medical physician, physician's assistant, registered nurse, licensed nurse practitioner, physical therapist, and other support staff. The ERT would transport injured construction workers or personnel to the construction clinic for medical care, as appropriate. In an emergency event requiring an immediate 911 call, the ERT or other Micron personnel overseeing construction would immediately call 911, which would dispatch local EMS, such as NAVAC, NOVA, or AMR of Central NY (see Section 3.14.2.1). Otherwise,

[124] For comparison, Micron only needed to place two outside calls to local police services during the first year of construction of its facility in Boise, ID, which is approximately one third the size of the proposed Micron Campus.

should the level of care needed exceed the construction clinic's capacities, the ERT would assist in transporting personnel to the nearest and most appropriate healthcare facility, such as a hospital or urgent care center (see Section 3.14.2.2.).

With these personnel and procedures in place, Micron and local EMS would be anticipated to have adequate capacity to respond to medical and other EMS needs related to construction activities throughout the Proposed Project construction period.[125]

Based on the above, Proposed Project construction activities would not result in significant adverse effects on police services, fire services, or EMS in Clay or Cicero.

Healthcare Facilities

As noted above, Micron and its contractors would implement and follow construction safety BMPs (described in Section 3.14.4 below) to avoid non-essential first responder calls and minimize construction incidents requiring police, fire, or EMS response, which would typically only include serious emergencies such as crime, active fires, and heart attacks, strokes, or other severe accidents or injuries. In addition, Micron would employ its ERT continuously throughout the Proposed Project construction period, supported by the on-site construction health clinic, to provide coverage for most construction-related medical incidents. Accordingly, construction of the Proposed Project would not be anticipated to materially increase the number of visits to hospitals and urgent care centers or other healthcare facilities located throughout Onondaga County (see Section 3.14.2.2) and therefore would not result in significant adverse effects on healthcare facilities.

School Districts

Because 2,700 of the projected 4,200 construction workers are within the commuter shed for the Proposed Project, and only 1,400 of the 1,500 in-migrating construction workers would locate within the regional study area (including approximately 100 locating in the Towns of Clay and Cicero (local study area)) (see Section 3.15, Socioeconomic Conditions) and Appendix Q) there would be minimal effects from Proposed Project construction activities on the school districts serving the Towns of Clay and Cicero. The anticipated in-migrating workers for operation and the indirect effects on school districts in the five-county region due to demand from induced population growth are discussed together under Growth Inducing Effects, below.

Open Space and Recreational Resources

This section considers Proposed Project and Connected Action construction effects on the open space and recreational resources identified in the 1-mile radius around the WPCP (see Section 3.14.2.4): The Greens at Beaumont, Meltzer Park, Clay Historical Park, and the Snow Owls Snowmobile Trial.

Construction of the Proposed Project would not require closing or placing any access restrictions on The Greens at Beaumont, Meltzer Park, or Clay Historical Park.

[125] For comparison, Micron's ERT at its Boise, ID facility placed approximately 20 outside calls to local EMS during the first year of facility construction.

Construction of the Proposed Project would not produce substantially noticeable noise effects at The Greens at Beaumont, based on the noise assessment prepared for this EIS (see Section 3.12, Noise and Vibration).

Noise exceedances from construction would occur at Meltzer Park (represented by receptor R15 in the noise assessment in Section 3.12, Noise and Vibration), primarily as a result of construction traffic. These noticeable noise increases would primarily occur during a 3- to 5-month construction noise peak period associated with the construction of Fab 4, while Fabs 1-3 are operating. The park would remain open throughout construction, would continue to experience long periods of quiet outside of the windows described above, and would continue to be able to host both quiet recreational activity and active use of its athletic fields and other amenities throughout the year.

Noise exceedances from construction also would occur at Clay Historical Park (represented by receptor R16 in the noise assessment in Section 3.12, Noise and Vibration), primarily from noise increases attributable to the Rail Spur Site and Micron Campus construction traffic along NYS Route 31 throughout the construction period. Although visitors to Clay Historical Park may already experience noise at the park from passing trains on the adjacent CSX Railroad line, the Proposed Project would result in additional noise increases at the park, primarily as a result of traffic sources.

Construction (and subsequent operation) of the proposed Micron Campus would require permanently closing the portion of the Snow Owls Snowmobile Trail that runs through the northern portion of the WPCP. Initial construction would require perimeter fencing around the WPCP, which would cut off and require closure of the WPCP portion of the trail beginning in late 2025. In addition, construction and subsequent operation of the National Grid Clay Substation expansion area would require permanently closing the portion of the trail that runs through that area. Construction of the new OCWA clear water transmission main from the LOWTP to the Terminal Campus would not start until 2030, but would involve trenching activity in an existing easement that would require temporarily closing and restricting access to the four-mile segment of the snowmobile trail in Oswego County that runs parallel to OCWA's existing transmission main, although the trail could be re-opened after the work is complete. Parties maintaining the snowmobile trail through year-to-year license agreements with private landowners would potentially be able to seek new agreements with landowners to re-route affected portions of the trail to avoid Proposed Project and Connected Action construction areas.

Although there may be certain adverse effects on these particular resources at certain times, overall, Preferred Action Alternative construction activities would not result in significant adverse effects on open space and recreational resources in the 1-mile radius around the WPCP (or on the four-mile segment of the Snow Owls trail noted above).

Operational Effects

Police, Fire, and EMS

As with construction, operation of the Proposed Project would not be anticipated to result in substantial increases in police calls. Micron would continue to contract with private security services for any ongoing construction as fab operations come online. Micron also would employ permanent on-site security personnel to respond to minor incidents such as worker disputes or stolen property. For other incidents, Micron's security team would require police assistance from the Onondaga County Sheriff's Office or the New York State Police. As the Cicero Police Department would only respond to incidents within the Town of Cicero and most of the Micron Campus would be within the Town of Clay, calls to the Cicero Police Department would be minimal. Overall, the limited number of potential police service calls would not warrant an increase in patrols or a need to hire additional officers. Accordingly, local police services would be anticipated to have adequate capacity to address any incidents that arise in connection with Proposed Project operations.

Similarly, operation of the Proposed Project would not be anticipated to result in substantial increases in calls to local fire services or EMS. As shown in Table 3.14-5, this would be in large part due to the low number of anticipated fire incidents and the large number of medical incidents that Micron's ERT team would be able to address, extrapolating from experience based on similar fab operations at Micron Technology's Boise, ID facility.

Table 3.14-5 Fire and EMS Incidents at Micron Technology Boise, ID Facility

Incident Type and Response	2022	2023	2024*	Average per Year
Fire	1	1	3	2
EMS	29	27	44	27
Internal ERT Responses	1,390	1,413	1,966	1,590

Source: Micron Technology (n.d.). Notes: *2024 data includes construction calls. The Boise facility is approximately one third the size of the proposed Micron Campus.

Micron's ERT would act as the initial line of response to any fire alarms on the Micron Campus and would be equipped to handle smaller fires and hazardous material spills. Micron would adhere to applicable requirements to report fires, spills, or other accidents to government agencies such as NYSDEC or USEPA (see Section 3.8, Solid Waste, Hazardous Waste, and Hazardous Materials). In the event of a structural fire or a hazardous material spill requiring outside assistance, the ERT would notify Clay Fire via 911. Prior to operations, Micron, Clay Fire, and the Syracuse Fire Department would establish a joint protocol for when the Syracuse Fire Department's hazardous material response unit would be brought in to address a relevant incident. Onondaga County DEM also would alert and deploy Cicero Fire as needed. Further, as shown in Table 3.14-5, Micron's Boise, ID facility experienced on average only two incidents per year that required a local fire response. Accordingly, local fire services would be anticipated to have adequate capacity to address any incidents that arise in connection with Proposed Project operations.

In addition, the Proposed Project would be subject to site plan approval from the Town of Clay Planning Board. Micron would work with the Town Board and the Planning Board to ensure that the Proposed Project design complies with the Town of Clay Zoning Code and applicable building and fire codes, provides for proper fire engine access and maneuverability, and incorporates any measures to address or alleviate any fire access or related concerns.

Micron's ERT would be continuously employed to address medical incidents arising from Proposed Project operations as well as construction, operating with the same certifications and level of care described above, under Construction Effects. For operations, Micron would establish a dedicated occupational health clinic at the Micron Campus for all employees (separate from the construction clinic described above), which will focus on occupational health, illness, and injury care and management under the direction of Micron's occupational medical provider. An on-site dispatch center would deploy the ERT to assist injured or sick employees, provide first aid, and transport them to the occupational health clinic as needed. As reflected in Table 3.14-5 above, based on experience with similar fab operations at its Boise, ID facility, Micron's ERT has only required outside EMS assistance in relatively few cases at that facility (approximately two percent of all such cases, or two calls to outside EMS per month). Extrapolating to the proposed Micron Campus, which would be approximately three times the size of the Boise facility, Micron's ERT would anticipate placing an average of approximately six calls to outside EMS per month at full campus build-out. The vast majority of other cases would likely be incidents that the ERT would be equipped to manage internally. Micron would also continue to train its employees based on a "see something, say something" safety culture, which helps address many minor incidents before they escalate. Finally, the Childcare Site healthcare center, once operational, would be an additional facility available to Micron employees and their families, staffed with appropriate family health medical providers equipped to manage a range of medical issues. Accordingly, Micron's ERT and local EMS would be anticipated to have adequate capacity to address most medical incidents that arise in connection with Proposed Project operations.

An independent third-party rail operator would be responsible for managing and coordinating any police, fire, or EMS response activities in connection with operation of the Rail Spur Site. However, Micron would coordinate closely with the rail operator to ensure joint implementation of appropriate BMPs (see Section 3.14.4) and open communication and coordination between Micron Campus and Rail Spur Site operations.

Based on the above, Proposed Project operational activities would not result in significant adverse effects on police services, fire services, or EMS in Clay or Cicero.

Healthcare Facilities

As noted above, Micron would employ its ERT continuously for Proposed Project operations, supported by the on-site occupational health clinic, to provide coverage for most employee medical incidents. Accordingly, operation of the Proposed Project would not be anticipated to materially increase the number of visits to hospitals and urgent care centers or other healthcare facilities located throughout Onondaga County (see Section 3.14.2.2), and therefore would not result in significant adverse effects on healthcare facilities.

Open Space and Recreational Resources

As described above under Construction Effects, most effects from the Proposed Project and Connected Actions on open space and recreational resources in the 1-mile radius around the Micron Campus would occur during the Proposed Project construction period. As the Proposed Project components enter the operational phase, noise effects from construction would fluctuate until completion of the final fab. Once construction ends, noise effects would decrease to operational only (which includes traffic noise). During operations, the effects of traffic noise would remain significant at Clay Historic Park during periods of peak traffic but would not be considered significant during operations at either The Greens at Beaumont or Meltzer Park. Operations would not be anticipated to generate other effects on The Greens at Beaumont, Meltzer Park, or Clay Historical Park. The portions of the Snow Owls Snowmobile Trail noted above would be permanently closed, except for the four-mile segment of the trail in Oswego County along the OCWA clear water transmission main, which could re-open after construction. Although there may be certain adverse effects on these particular resources at certain times, overall, Proposed Project and Connected Action operations would not result in significant adverse effects on open space and recreational resources in the 1-mile radius around the WPCP (or on the four-mile segment of the Snow Owls trail noted above).

Growth Inducing Effects

This section analyzes the indirect effects on community facilities, open space, and recreation from induced growth, consistent with the methodology and study area outlined in Appendix C. For purposes of this analysis, induced growth refers to reasonably foreseeable increases in population, jobs and economic activity, and residential, commercial, and industrial development resulting from the Preferred Action Alternative within the five-county region. The Preferred Action Alternative would likely induce growth in all of these categories, including through growth associated with additional businesses within the semiconductor supply chain locating to the area. In terms of population increases, Onondaga County in particular would be projected to experience an increase of approximately 13,700 to 18,200 households by 2035, and 16,500 to 23,500 households by 2041, an approximately 9 to 12 percent increase compared to 2023 (see Appendix C). The pace of this induced growth would occur gradually over many years.

Police, Fire, and EMS

Induced growth would potentially require some police services in the five-county region to expand their capacity over time and shift services and patrols due to changes in population patterns. In general, because police services are funded by taxes, the increased tax base associated with induced population growth would likely help to fund the needs of police services to expand over time to keep pace with that growth. The New York State Police, the Onondaga County Sheriff's Office, and the Cicero Police Department indicated that they do not anticipate the gradual build-out of the Proposed Project to hinder their service capacities. Although the police services noted that increases in traffic could potentially affect response times, measures to address traffic increases associated with the Proposed Project would likely help avoid those effects. For additional information on traffic projections, see Section 3.11 (Transportation and Traffic). Based on the above, the Proposed Project would not be expected to result in significant adverse growth inducing effects on police services.

Induced growth would likely result in the need for additional fire service capacity over time. In general, the majority of the fire services in the five-county region are volunteer-based, but a few services, such as the Syracuse Fire Department, are paid services. Because paid fire services are funded by taxes, the increased tax base associated with induced population growth would likely help to fund the needs of those services to expand over time to keep pace with that growth. Volunteer fire services are also funded through taxes. For example, the Town of Clay has a fire district special assessment, to which Micron and other supply chain companies would be significant contributing taxpayers, which may help to support volunteer fire services responding to induced growth and offset their costs. However, volunteer fire services are also dependent on volunteers. Volunteer fire departments in the five-county region have indicated it is becoming more difficult to find volunteer firefighters in Central New York. Induced growth could potentially increase the number of available volunteers over time, but may not do so at the rate necessary for area fire services to keep pace with increases in calls. Some local volunteer fire departments, including Clay Fire and the combined fire services in the Town of Clay, may consider adapting their current all-volunteer models to include paid personnel, whether through fully paid departments, paid fire chiefs, or a mix of volunteer and paid firefighters. Clay Fire and Cicero Fire, which are both currently staffed by volunteers, anticipate the potential need for additional resources, including professional firefighters, to accommodate anticipated growth. In particular, Clay Fire has identified a potential need to consolidate fire services within the Town of Clay and develop a full-time professional fire service. Based on the above, the Proposed Project would potentially result in significant adverse growth inducing effects on volunteer fire services, depending on the growth each department would need to serve. Mitigation measures to address these potential effects are described in Section 3.14.4 below.

Induced growth would likely result in the need for additional EMS capacity over time. In general, EMS in the five-county region are private businesses with paid employees that are coordinated through 911 centers and bill per call. As noted above, despite their names, NAVAC and NOVA are not volunteer-based services and are comprised of paid employees, as is AMR of Central NY. Based on their business models, increased revenue associated with increased calls to accommodate gradual population growth over time would be anticipated to enable these and other EMS to expand and hire additional employees as needed. NAVAC and NOVA have indicated that the pool of certified EMTs in Central New York is currently in decline, which could make it difficult to fill positions if EMS need to expand to keep pace with induced growth and the decline does not change. However, induced growth may reverse that trend and bring new EMTs to the region or other workers who may be able to become certified EMTs. With increased billable calls and an expanded worker pool, the Proposed Project would not be anticipated to result in significant adverse growth inducing effects on EMS.

Healthcare Facilities

Induced growth would potentially place added strains on healthcare facilities in the five-county region over time. The proposed Childcare Site healthcare center is intended in part to help reduce potential demands on area healthcare facilities by serving as an initial resource to accommodate the healthcare needs of Micron employees and their families, although the healthcare center would not open until 2031, after operation of the Micron Campus has begun. Induced growth would be expected to put greater demand on the regional healthcare facilities, which, as outlined above and discussed in Appendix P-2, include MUAs, a shortage of primary care physicians, dentists, and mental health professionals serving low-income and Medicaid-eligible populations, and long wait times and overcrowding at the region’s only Level 1 Trauma Center (Upstate University Hospital). Nevertheless, the induced growth effects would occur gradually over the 16-year construction period, would bring new healthcare workers to the region to support the growing population, and would likely generate additional economic benefits and tax revenue that would support planned expansions of healthcare facilities in Syracuse and other longer-term healthcare planning initiatives in the region. Independent of the Proposed Project, Upstate University Hospital and New York State are planning to expand the hospital’s emergency room and increase the number of beds from 35 to 120 to better serve the area. With increased economic benefits, tax revenue, the expanded worker pool, and the planned Upstate University

Hospital expansion, the Proposed Project would not be anticipated to result in significant adverse growth inducing effects on the regional healthcare facilities.

School Districts

As noted above, for ease of discussion, this section considers both the non-growth inducing indirect effects of the Preferred Action Alternative on schools (i.e., increased demand for schools from in-migrating Micron employees and contractors) as well as increased demands on schools and school districts from induced population growth in the five-county region. As explained below, these indirect effects of the Preferred Action Alternative would not be expected to place substantial strains on schools or school districts in the five-county region, and could potentially lead to benefits for school services. Although workers would migrate to the region beginning in 2025, induced population growth would occur gradually over many years. Because school districts in the region have already experienced declines in enrollment, this influx would not be expected to overburden public school district capacity, and private schools in the area could also help absorb some of the increase in school-aged children. Moreover, induced population growth and business activity would help expand the regional tax base to further fund area school districts.

As shown in Table 3.14-6, the public schools in the five-county region have experienced a 22 percent average decline in enrollment since 2000.

Table 3.14-6 Five-County Region Public School Enrollment

County	2000 Enrollment	2022-2023 Enrollment	Change
Onondaga	79,095	64,519	-18%
Oswego	25,808	18,152	-30%
Cayuga	12,448	8,814	-29%
Madison	9,830	8,777	-11%
Cortland	7,765	5,576	-28%
Total	134,946	105,838	(Avg.) -22%

Source: NYSED enrollment data, NYSED (2024).

The induced growth from the Proposed Project would be expected to begin reversing this decline by gradually increasing the number of school aged children (SAC) across the five-county region, as shown in Table 3.14-7 below.

Table 3.14-7 Estimated Changes in School-Aged Children from 2020-2041

Locality	Low Induced Growth Estimate			High Induced Growth Estimate		
	New Households	New SAC	Change	New Households	New SAC	Change
Onondaga	16,568	3839	6%	23,518	5,449	8%
Clay/Cicero	4,378	1039	4%	6,214	1,475	6%
Oswego	1,674	382	2%	4561	1,040	6%

Cayuga	940	214	2%	2562	584	6%
Madison	874	199	2%	2382	543	6%
Cortland	540	123	2%	1473	336	6%

Source: Blended multipliers of school-aged children per household with one or more working heads-of-household generated from USCB American Community Survey (ACS) 2022 five-year data (USCB, 2022a) and Census-based Public Use Microdata Sample (PUMS) files for housing units and persons (USCB, 2022b). Note: for additional supporting information and data, see Appendix P-3.

As the table shows, even Onondaga County, which would experience the highest rate of induced growth in the region, would likely only experience an eight percent total increase in school aged children in a high induced growth scenario over the course of 21 years, from 2020 to 2041. Compared to the 18 percent decrease in student enrollment that Onondaga County has already experienced since 2000, an induced 21-year incremental increase in enrollment of potentially eight percent would be unlikely to burden the County school districts and would likely only help to backfill the decreases in enrollment. The trends for the other four counties in the five-county region, and for the Towns of Clay and Cicero, would likely be similar.

Further, multiple factors beyond enrollment contribute to school capacity, including facility space and maintenance, deferred maintenance, staffing levels, and funding. Although each school is different, as noted above, the induced growth would likely bring increased economic activity and an expanded regional tax base capable of providing increased funding for school district budgets, facilities, and staffing. Given the current decreased student enrollment, the gradual nature of increased student enrollment from induced growth, and the potential for induced growth to result in additional school district funding, the Preferred Action Alternative would not be expected to result in any significant adverse growth inducing effects on schools or school districts in the five-county region, and may have beneficial effects.

Open Space and Recreational Resources

Under the Preferred Action Alternative, induced household growth could gradually increase the number of people seeking to attend and benefit from open space and recreational resources in Onondaga County over time. However, the Town of Clay alone is home to approximately 28 neighborhood parks and, as shown in Figure 3.14-5, Onondaga County is home to numerous other open spaces, including various nature preserves, parks, and recreation areas. Induced residential growth also would be anticipated to contribute to property taxes and other fees that would support the maintenance of parks and recreational resources within the County, should any become close to capacity. Therefore, the Preferred Action Alternative would not be expected to result in significant adverse growth inducing effects on open space and recreational resources in Onondaga County.

Summary of Effects

In sum, construction and operation of the Proposed Project would not result in any significant adverse effects on police services, fire services, EMS, healthcare facilities, or schools, nor would construction and operation of the Proposed Project and Connected Actions have any significant adverse effects on open space or recreational resources. The Preferred Action Alternative would not result in significant adverse growth inducing effects on police services, EMS, healthcare facilities, schools, or open space or recreational resources, but would potentially have significant adverse effects on volunteer fire services in the five-county region.

3.14.4 BMPs and Mitigation Measures

As described above, Micron's implementation of the Proposed Project would include the establishment of the ERT, and extensive plans and procedures developed by the ERT. Separately, as shown in Table 3.14-8 below, Micron would incorporate several BMPs as part of the Proposed Project to address the emergency response needs described in Section 3.14.

Table 3.14-8 Best Management Practices

Activity	BMP Description
Construction; Operations	Prepare a release response procedure and contingency plan to reflect hazardous material storage at Proposed Project sites.
Construction; Operations	Install facility perimeter fencing and provide for 24/7 security coverage to ensure that only authorized personnel can access Proposed Project sites and restricted areas where hazardous chemicals are stored.
Construction; Operations	Maintain an on-site ERT for deployment, if necessary, to assess, manage, and respond to spills and emergency situations.
Construction; Operations	Implement an internal chemical management system tracking and hazard communication process.
Construction; Operations	Maintain a crisis management plant with established mustering locations and coordinate plan with local emergency service agencies.
Operations	Partner with local fire and EMS to provide documentation of hazardous materials stored on-site and coordinate emergency response readiness and preparedness.

To address the potential significant adverse effect on volunteer fire services as a result of induced growth associated with the Proposed Project, including on Clay Fire and the Town of Clay's fire response capacity, as a mitigation measure, Micron would commit to pay for and support ongoing Micron-related training efforts with Clay Fire and other local fire departments. Similarly, Micron would work with Clay Fire to determine any future need for the development of a full-time professional fire service. The determination of future needs planning could be completed through a feasibility study or similar alternative method.

3.15 SOCIOECONOMIC CONDITIONS

This section analyzes the current socioeconomic conditions of the local and regional study areas and whether potential changes in those conditions would occur under the Preferred Action and No Action Alternatives. Socioeconomic conditions and trends present within the local and regional study areas include those related to population and demographics; real property, housing, relocation, and displacement; economic development, labor, and employment; and funding for local governments and taxing districts, including school districts. The socioeconomic study areas and analysis methodology are more thoroughly discussed in Appendix Q.

The Proposed Project would generate thousands of new jobs both on- and off-site through business-to-business supply chain services, stimulate local and regional development through induced residential and worker spending, generate additional tax revenues and payments in lieu of taxes (PILOT), and, provide $500 million towards identified regional and local community needs over the 20-year term of the Green CHIPS CIF. Unless otherwise noted, dollar values are presented in constant 2023 dollars.

3.15.1 Legal and Regulatory Setting

NEPA does not require consideration of socioeconomic factors in the decision-making process, but CPO may consider such factors as part of its review of the Proposed Action. Under SEQRA, the protection and enhancement of the environment should be given appropriate weight with social and economic considerations, and the factors should be considered together in reaching decisions on proposed activities; environmental factors are not the sole consideration in decision-making (6 NYCRR § 617.1(d)). An EIS facilitates the weighing of social, economic, and environmental factors in the decision-making process (6 NYCRR § 617.2(n)).

In addition, the New York State EDPL is relevant to the analysis of real property, housing, relocation, and displacement as a key socioeconomic consideration in the EIS. The EDPL serves as the exclusive procedure for acquiring property through eminent domain in New York State. Key objectives of the EDPL include ensuring appropriate public notice and just compensation for property rights acquired.

3.15.2 Affected Environment

For a socioeconomic conditions analysis, the study area is the area within which a project is most likely to affect population, housing, and economic activities due to the presence of future workers who seek to reside in communities within the local and broader regional area. The outer boundary of the regional study area for the analysis in this EIS is shaped by the anticipated worker commuter shed, which is the area where existing and new residents who would work at Proposed Project sites would be most likely to reside and, in turn, would be most likely to directly or indirectly influence surrounding socioeconomic conditions. Based on existing commuter patterns, most Micron employees would be likely to reside within an approximately 45-minute travel distance from the proposed Micron Campus.

The Preferred Action Alternative has the potential to directly and indirectly affect socioeconomic conditions within the Town of Clay and the Town of Cicero, given that the Proposed Project's footprint would intersect both towns, and the Proposed Project and most of the Connected Action components would be within the Town of Clay. Therefore, the local study area is defined as the Town of Clay and the Town of Cicero, spanning 97 square miles and located solely in Onondaga County (see Figure 3.15-1).

The Preferred Action Alternative also has the potential to indirectly affect socioeconomic conditions in a broader regional area. This regional study area is the five-county region (shown in Figure 3.15-2) and has a total footprint, including waterbodies, of 3,723 square miles (NYS Office of Information Technology Services, 2024b). This regional study area is the same as the study area for growth inducing effects in the EIS, as described in Appendix C, and was selected based on a 2022 Empire State Development (ESD)-sponsored study prepared by Regional Economic Models, Inc. (REMI) (the "REMI Study"), which estimated that 85 percent of induced job growth and 90 percent of induced residential growth from Micron establishing a four-fab semiconductor manufacturing facility in Onondaga County would occur within this five-county region. A copy of the REMI Study is included in Appendix C-2. The regional study area would encompass all Proposed Project and Connected Action components.

Figure 3.15-1 Local Study Area

Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; SafeGraph; GeoTechnologies, Inc.; METI/NASA; USGS; USEPA; NPS; USDA.

Figure 3.15-2 Regional Study Area

Sources: World Street Map (Esri, 2025b): Esri; HERE; Garmin; Food and Agriculture Organization (FAO); NOAA; USGS; USEPA; NPS.

3.15.2.1 Population and Demographics

This section describes the population and demographics of the local and regional study areas, including total population, average household income and size, population growth rate, and poverty rate.[126]

Local Study Area

The local study area has an estimated 91,301 residents, with 60,083 residing in the Town of Clay and 31,218 residing in the Town of Cicero. The population within the local study area has grown by approximately 1.6 percent since the 2010 decennial census. This area experienced higher growth from the 1950s to the 1980s but has seen a slower rate of growth since 1990.

There are 37,778 households in the local study area, with an average household size of 2.4 persons, down 4.7 percent since 2006-2010. The average household income in the local study area is $105,650, with a median household income of $90,592.[127] Although local study area households have higher average incomes compared to Onondaga County overall, with a larger proportion of households earning over $100,000 annually and a lower proportion earning under $50,000 annually, approximately 15 percent of the local study area population under 18 years of age is living in poverty, a rate that has more than doubled since 2006-2010. Approximately 7.1 percent of local study area residents 18 and older live in poverty, up from 5.0 percent in 2010.

Appendix Q, Tables Q-2 through Q-10 provide additional population and demographics data for the local study area.

Regional Study Area

There are an estimated 778,993 regional study area residents, of whom approximately 471,611 residents (60 percent) live in Onondaga County, 117,945 in Oswego County, 75,464 in Cayuga County, 67,572 in Madison County, and 46,401 in Cortland County. While the entirety of the regional study area experienced population growth from the 1950s to the 1990s, from 2010-2023 population growth in the area as a whole has mostly stagnated. The regional study area population has decreased by approximately 1.6 percent, led by an 8.0 percent population decline in Madison County. Onondaga County was the only county with population growth, with a 1.0 percent increase overall, including a 1.0 percent increase in the City of Syracuse.

There are 317,760 households in the regional study area, with an average household size of approximately 2.3 persons, down 6.4 percent since 2006–2010. The average and median household incomes are $95,095 and $71,924, respectively. Regional study area households have higher average incomes than households in New York State overall, with a greater share of households in lower income brackets. In the regional study area, 20.5 percent of the population under the age of 18 is living in poverty – a rate which has increased approximately 2.5 percent

[126] The information provided in this section is based on USCB decennial censuses and American Community Survey (ACS) 2006-2010 and 2019-2023 5-year estimates (USCB, 2021, 2024).

[127] The median household income represents the midpoint of all household incomes in the study area, while the average (or mean) household income is calculated by dividing aggregate income by the total number of households in the study area.

since 2006-2010 and is higher than that of New York State overall. Approximately 12.1 percent of regional study area adults live in poverty, slightly below the New York State rate (12.5 percent).

Appendix Q, Tables Q-11 through Q-23 provide additional population and demographics data for the regional study area.

3.15.2.2 Real Property, Housing, Relocation, and Displacement

Real Property and Housing

This section describes the population and housing characteristics of the local and regional study areas, including the number of households, the owner-occupancy rate, the number of housing units, the vacancy rate, and market conditions.

Local Study Area

The local study area has nearly 40,000 housing units, representing about one-fifth of the units in Onondaga County. About three-quarters of housing units are single-family detached homes, mostly built in the 1960s and 1970s. Nearly three-quarters of households are owner-occupied – a higher rate than Onondaga County as a whole. An estimated 1,808 housing units are vacant, with approximately 382 units available for rent or sale. The average and median gross rents in the local study area are $1,138 and $1,143, respectively, increasing by about 8 percent since 2010. About 42 percent of renters are rent burdened,[128] slightly below the 47 percent rent-burdened rate for Onondaga County as a whole.

In the local study area, housing costs for homeowners represent a lesser percentage of household income than in 2010. However, between January 2024 and January 2025, the Town of Clay and the Town of Cicero both saw increases in the median sale prices; the Town of Clay's year-over-year median sale price increased by over 20 percent, while the Town of Cicero's year-over-year median sales price increased by 6.5 percent. Onondaga County experienced a nearly 14 percent increase in median sale price between January 2024 and January (Redfin, 2025).[129]

Appendix Q, Tables Q-24 through Q-33 provide additional real property and housing data for the local study area, as well as additional details regarding the recent market conditions and planned projects in the local study area. As noted in Appendix Q, the local study area will be experiencing growth in housing stock; identified planned projects are expected to generate an estimated over 4,000 new residential units.

Regional Study Area

There are approximately 354,000 housing units in the regional study area, representing a 2.9 percent increase since 2010. In 2023, there were approximately 7,101 units available for rent

[128] According to U.S. Department of Housing and Urban Development (HUD) guidelines, a household is considered rent burdened if it pays more than 30 percent of its gross income toward rent.

[129] Year-over-year percentages are based on transactions in January 2024 and January 2025, and do not necessarily reflect annual year-to-year trends.

or sale.[130] About two-thirds of occupied housing units are owner-occupied, and most owners are not housing cost-burdened.[131] However, approximately 45 percent of renter households in the regional study area are rent-burdened. While the median home value has increased over the past decade, the average and median gross rents are lower than those for New York State as a whole.

Overall, the housing stock in the regional study area is aging, both in smaller communities and metropolitan centers such as Syracuse. The regional study area, however, continues to have a competitive real estate market, with all five counties seeing a year-over-year increase in the median sale price between January 2024 and January 2025. Cayuga County saw the largest increase in median sale price, jumping over one-third to $200,000. Sales volume also saw a year-over-year increase in all counties except Onondaga, which held steady when compared to January 2024. Within the county of Onondaga, the City of Syracuse saw a decrease in median sale price year-over-year, as well as a decrease in sales volumes. Oswego County saw the largest increase in sales volume with a jump of over 44 percent year-over-year (Redfin, 2025).[132]

Appendix Q, Tables Q-34 through Q-43 provide additional real property and housing data for the regional study area. Appendix Q also provides further detail on recent market conditions and planned projects within the regional study area.

Relocation and Displacement

This section describes the relocation and displacement of populations within the local and regional study areas for lands proposed to be occupied by the Proposed Project.

Local Study Area

Proposed Project

Within the local study area, much of the land proposed to be occupied by the Proposed Project has previously been acquired by OCIDA in anticipation of the future development of an industrial park. The Micron Campus would be located on OCIDA properties within the WPCP. In 2013, the WPCP consisted of seven contiguous parcels, covering a total area of approximately 339 acres of land. In 2021, OCIDA initiated an expansion of the WPCP to approximately 1,250 acres. The expanded footprint required OCIDA to acquire several residences along Caughdenoy Road, NYS Route 31, and approximately three dozen additional residences along Burnet Road. Residential properties were acquired through negotiated purchase agreements, with all owners receiving at least fair market value for their properties. While most of the residential dwelling units associated with the expansion have been removed or are unoccupied, only one single-family home

[130] Of almost 400 units listed for sale on Zillow in Onondaga County in 2024, approximately 53 percent of listings were for two-bedroom units and approximately 33 percent of listings were for four or more bedrooms. Of just over 300 units actively listed for rent in Onondaga County in November 2024 approximately 41 percent of listings were for three-bedroom units and approximately 33 percent were for two-bedroom units.

[131] According to HUD guidelines, a household is considered housing cost burdened if it pays more than 30 percent of its gross income toward its housing costs. These costs can include mortgage payments, taxes, insurance, and utilities.

[132] Year-over-year percentages are based on transactions in January 2024 and January 2025, and do not necessarily reflect annual year-to-year trends.

on an OCIDA-owned property on Caughdenoy Road, occupied by an individual through a license agreement, remains.

The Rail Spur Site would be located on vacant, vegetated land owned by Micron. A small portion of this land previously included structures dating from the 1950s that were removed in the 1980s.

With respect to the proposed location of the Childcare Site, Micron previously acquired the subject property in 2023. Although the home was vacated in 2024, a single-family home and a barn remain on the site; removal of the existing structures would occur once Micron obtains the necessary regulatory approvals.

Connected Actions

With the exception of proposed water supply improvements, the Connected Actions would be located wholly within the local study area. As detailed in Table 3.1-2, most utility construction activity associated with the Connected Actions would occur within publicly owned property boundaries and public utility rights-of-way and would not result in direct displacement or relocation. The proposed industrial wastewater conveyance system connecting the Micron Campus to the new IWWTP and the natural gas line would be located in recently obtained utility corridors over privately owned parcels. The easements for the natural gas line have been obtained and do not result in direct displacement or relocation. The industrial wastewater conveyance would be constructed within nine easement parcels and one private residential parcel acquired by Micron. The structure on the private residential parcel acquired by Micron is unoccupied and would be removed for the industrial wastewater conveyance. The status of acquisition of wastewater easements is described in Section 3.15.3.2.

Regional Study Area

Connected Actions

As detailed in Table 3.1-2, the water supply improvements outside of the local study area would occur within existing easements[133] and at the existing LOWTP in Oswego County. There are no residential or business properties on easements associated with the Connected Actions within the regional study area.

3.15.2.3 Economic Development, Labor, and Employment

This section describes the economic development, labor and employment within the local and regional study areas, including labor force participation and rates, represented employment sectors, small business population, age of the labor force and job loss rates.

Local Study Area

Approximately 18 percent of the local study area labor force works in the local study area, with 25 percent working in the City of Syracuse. The top five employment sectors for local study area residents are healthcare, education, retail trade, manufacturing, and accommodation/food

[133] Several parcels located along existing water supply easements contain structures that encroach on the easement.

services. In 2022, the construction sector accounted for an estimated 1,923 primary jobs. Most of the approximately 32,000 jobs in the local study area are provided by small businesses, with the notable exception of an Amazon distribution center that opened in the Town of Clay in 2022 and employs approximately 2,900 workers.

While the local study area has experienced residential population growth since 2010, this growth has not directly corresponded to growth in labor force participation rates or jobs.[134] Within the local study area, an estimated 50,249 residents are labor force participants, either working or seeking work. Since 2010, the local study area's labor force participation rate has decreased; in 2010, approximately 72 percent of local study area residents 16 years and older worked or were seeking work, as compared to 68 percent in 2023. The only labor force participation rate that has increased is the share percentage of workers aged 60 years or over, increasing from approximately 7.9 percent of the local workforce to 15.6 percent of the workforce. Notably, most local study area residents aged 25 or older have received some college education or more.

The overall unemployment rate in the local study area is 2.9 percent, with an estimated 2,137 people unemployed. Between 2010 and 2022, the local study area experienced a net loss of 1,448 jobs, including a net loss of 509 manufacturing sector jobs, and 1,083 wholesale trade industry sector jobs (USCB, 2022c). The unemployment and labor force participation rates in the local study area, however, continue to be lower than that of the whole of Onondaga County.

As detailed in Chapter 4 (Cumulative Effects), Table 4.2-1, there are planned development projects within the local study area—most notably the Great Northern Mall (GNM) Redevelopment in the Town of Clay—that will add a mix of residential and commercial uses facilitating residential and job opportunities in some sectors. The GNM redevelopment contemplates a mix of housing, medical and office space, retail, hotel, and community center, anticipated to be developed in phases with completion by 2034.

Appendix Q, Tables Q-44 through Q-50 provide additional information on the economic development, labor and employment for the local study area.

Regional Study Area[135]

Approximately 318,000 jobs are located in the regional study area, of which an estimated 192,320 (about 60 percent) are located in Onondaga County, including 48,089 jobs in the City of Syracuse. The top five employment sectors in which regional study area residents are employed are healthcare, education, retail trade, manufacturing, and accommodation/food services. The sectors with the highest number of business establishments are retail trade, construction, other services (excluding public administration), health care and social assistance, accommodation and food services, and professional, scientific, and technical services. In 2022, the construction sector accounted for an estimated 14,318 primary jobs in the regional study area.

[134] The information provided in this section is based on 2022 U.S. Census Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics and ACS 2006-2010 and 2019-2023 5-year estimate data.

[135] The information provided in this section is based on ACS 2006-2010 and 2019-2023 data, the 2023 Bureau of Labor Statistics' Quarterly Census of Employment and Wages, and the LEHD program.

While population growth in the regional study area has largely stagnated since 2010, labor force rates for the region have decreased over this time. Approximately 393,000 regional study area residents are members of the labor force, a 1.7 percent decrease since 2010. Of these labor force participants, an estimated 3.2 percent are unemployed. There is also a higher proportion of older workforce members (60 years and over) compared to 2010.

Between 2002 and 2011, the regional study area lost over 25,000 jobs (a decrease of over 7 percent). This trend was driven by losses in the educational services (-23 percent, -12,748 jobs) and the manufacturing sector (-21 percent, -9,033 jobs). Since 2011, however, the regional study area overall employment grew by approximately 1 percent (+3,344 jobs). This gain was led by significant increases in the educational services sector (+20 percent, +8,645 jobs) and in transportation and warehousing (+25 percent, +2,614 jobs). Based on ESD labor statistics reporting for the five-county region, in 2024, private sector jobs in the Syracuse metro area rose by 5,400 jobs in 2024. Job gains occurred in private education and health services (+2,900), professional and business services (+900), trade, transportation, and utilities (+700), leisure and hospitality (+600), mining, logging and construction (+400) and other services (+100). Job losses occurred in information (-200). The government job count rose over the year (+800), with growth concentrated in State government education (NYSDOL, n.d.).

Even with an overall net increase in jobs for the regional study area, several sectors in the regional study area continued to experience decreases in employment. The largest losses by sector since 2011 were in finance and insurance (-27 percent, -3,715 jobs), public administration (-21 percent, -3,749 jobs), manufacturing (-8 percent, -2,581 jobs), and the information sectors (-19 percent, -966 jobs).

Appendix Q, Tables Q-51 through Q-58 provide additional information on the economic development, labor and employment for the regional study area. As detailed in Chapter 4, Table 4.2-1, there are known economic development projects anticipated for completion within the regional study area, primarily in Onondaga County.

3.15.2.4 Funding for Local Governments and Taxing Districts

Local Study Area

This section describes local municipal service providers, including public schools, and their current sources and uses of funding.

The Town of Clay’s 2025 Adopted Budget totals approximately $18.4 million. About $10.3 million is generated from property taxes, while the remaining approximately $8.1 million is generated from other sources, such as state aid, fines, and unexpended balances. The budget is organized into three funds, as shown in Table 3.15-1.

Table 3.15-1 Town of Clay 2025 Adopted Budget

Fund	Uses	Appropriations and Other Uses	Estimated Revenues	Less Unexpended Balance	Amount to be Raised by Property Taxes
Fund 01 General Fund	General government functions, cultural / recreational services, and debt service	$7,445,975	$3,760,000	$1,500,000	$2,185,975
Fund 02 General Fund (Town outside Village)	Zoning/planning services, and debt service	$1,497,258	$445,500	$300,000	$751,758
Fund 03 Highway Fund	General repairs and improvements to local roadways, brush / snow removal, and debt service	$9,431,358	$1,177,500	$800,000	$7,363,858
Totals	-	$18,374,591	$5,398,000	$2,675,000	$10,301,591

Source: Town of Clay 2025 Adopted Budget (Town of Clay, 2024). All dollar values are presented in nominal dollars. "Nominal dollars" refer to the value of money expressed in the terms of the prices at the time of measurement, without adjusting for inflation.

The Town of Cicero 2025 Final Budget totaled approximately $17.2 million, with approximately $12.8 million generated by property tax revenues and the remaining $4.4 million generated by other revenue sources (e.g., state aid, fines and forfeitures, fees, and unexpended balances), and is organized by municipal function into the three funds described in Table 3.15-2.

Table 3.15-2 Town of Cicero 2025 Final Budget

Fund	Uses	Appropriations and Other Uses	Revenues (Other than Fund Balance)	Appropriated Fund Balance	Amount to be Raised by Property Taxes
General Fund	General government functions, cultural / recreational services, and employee benefits	$4,689,912	$1,867,000	$515,947	$2,306,965
Part-Town Outside of Village Fund	Policing, zoning, and planning services as well as funding to cover	$6,345,947	$790,364	$100,000	$5,455,583

Fund	Uses	Appropriations and Other Uses	Revenues (Other than Fund Balance)	Appropriated Fund Balance	Amount to be Raised by Property Taxes
	part of employee benefits				
Part-Town Highway Fund	General repairs and improvements to local roadways, brush / snow removal, and debt service	$6,154,810	$900,500	$230,000	$5,024,310
Totals	-	$17,190,669	$3,557,864	$845,947	$12,786,858

Source: Town of Cicero 2025 Final Budget (Town of Cicero, 2024). Notes: All dollar values are presented in nominal dollars. "Nominal dollars" refer to the value of money expressed in the terms of the prices at the time of measurement, without adjusting for inflation.

Other services to residents and businesses are provided by Onondaga County (e.g., policing for the Town of Clay), or are contracted and funded by federal, state, and local aid, as well as special district taxes and fees (e.g., for emergency services and local libraries). According to its 2025 Budget, Onondaga County will receive approximately $18.8 million from tax levies in the Town of Clay and $11.3 million from tax levies in the Town of Cicero. These funds support a variety of services, including public safety, public health, public workers, social services, education, recreation and parks, and environmental services.

With respect to tax levies for school district funding, as shown in Table 3.15-3, the amount of school district budget generated from tax levies varies by district. The Town of Clay and Town of Cicero are served by six public school districts. Portions of the Town of Clay and the entire Town of Cicero are served by the North Syracuse CSD. Non-property tax funding sources include Federal funding and New York State school aid, including state funding for Boards of Cooperative Educational Services (BOCES).

The average cost per pupil to taxpayers varies by school district. Table 3.15-3 demonstrates a decrease in student enrollment within all six school districts over the past two decades. Apart from the Baldwinsville CSD, all districts experienced double-digit percent decreases in student enrollment over the past 10 and 20 years. Over the past five years, enrollment decreases have ranged from an approximate 3 percent decline in the Baldwinsville CSD to a 13 percent enrollment decline in the North Syracuse CSD. Enrollment, however, is only one measure of capacity within a school or school district; as discussed in Section 3.14 (Community Facilities, Open Space, and Recreation), other factors such as building closures, staffing levels, or budgets could also have an impact on capacity, and may vary by school and academic year.

Table 3.15-3 School Districts that Service the Local Study Area 2023-2024 Budgets and Enrollment Trends

School District	2023-2024 Budget	Average Cost Per Pupil	2023-2024 Budget from Property Taxes	Average Per Pupil Cost to Taxpayers	Enrollment			Change in Enrollment 2011-2024	Change in Enrollment 2001-2024
					2023-2024	2010-2011	2000-2001		
North Syracuse Central School District (serves Town of Clay and Town of Cicero)	$203,300,000	$27,157	$101,700,000	$13,585	7,486	9,661	10,156	-22.5%	-26.3%
Baldwinsville Central School District (serves Town of Clay)	$129,200,000	$24,713	$63,300,000	$12,108	5,228	5,730	5,746	-8.8%	-9.0%
Liverpool Central School District (serves Town of Clay)	$184,400,000	$27,767	$95,500,000	$14,380	6,641	7,399	8,722	-10.2%	-23.9%
Central Square School District (serves Town of Clay)	$93,000,000	$27,273	$30,800,000	$9,032	3,410	4,519	4,978	-24.5%	-31.5%
Phoenix District Schools (serves Town of Clay)	$51,500,000	$32,390	$17,800,000	$11,195	1,590	2,135	2,543	-25.5%	-37.5%
East Syracuse Minoa School District (serves Town of Cicero)	$97,600,000	$30,730	$53,100,000	$16,719	3,176	3,522	4,025	-9.8%	-21.1%

Sources: Enrollment data from NYSED's Student Information Repository System; 2023-2024 budgets from school district websites (North Syracuse Central School District, 2023; Baldwinsville Central School District, 2023; Liverpool Central School District, 2023; Central Square Central School District, 2023; Phoenix Central School District, 2023, East Syracuse Minoa School District, 2023). Notes: Enrollment includes pre-K through grade 12. All dollar values are presented in nominal dollars. All dollar values are presented in nominal dollars. "Nominal dollars" refer to the value of money expressed in the terms of the prices at the time of measurement, without adjusting for inflation.

The Office of the New York State Comptroller's (NYSOSC) Fiscal Stress Monitoring System (FSMS) evaluates fiscal stress (i.e., difficulty in maintaining budgetary solvency) in local governments and school districts by assessing annual financial information (NYSOSC, 2016).[136] The October 2024 local governments reporting (based on 2023 data) found that neither the Town of Clay nor the Town of Cicero are experiencing "significant" or "moderate" fiscal stress, nor were they identified as "susceptible to fiscal stress" (NYSOSC, 2024a) In addition, the FSMS reporting did not identify environmental stress factors outside the control of local officials, such as changes in property values or unemployment, that may affect the local study area.[137]

With respect to school districts, the FSMS January 2025 school districts reporting (based on 2024 data) did not identify any of the six school districts serving the local study area as experiencing "significant" or "moderate" fiscal stress, nor were any identified as "susceptible to fiscal stress." Liverpool CSD was identified as "susceptible to environmental stress" due to a relatively high student-teacher ratio, a relatively high teacher turnover rate, and a relatively low budget approval rate.

Regional Study Area

This section describes the composition of governments and municipal service districts in the regional study area and their fiscal health, as evaluated by the NYSOSC.

The regional study area is comprised of five counties, each encompassing multiple towns, cities, school districts, and fire districts. It also contains villages and over 1,200 other types of special districts. The services for these governmental entities are paid for through a combination of federal, state, and county aid; sales and property tax revenues; PILOT payments; and licenses, fines, and fees.

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[136] The FSMS evaluation of financial stress for municipalities includes evaluation of the following nine indicators: 1) unassigned fund balance; 2) total fund balance; 3) operating deficit, 4) cash ratio; 5) cash as a percent of monthly expenditures; 6) short-term cash-flow debt issuance; 7) short-term cash-flow debt issuance trends; 8) personal services and employee benefits; and 9) debt service as a percent of revenue. The FSMS evaluation of financial stress for school districts includes evaluation of the following six indicators: 1) unassigned fund balance; 2) total fund balance; 3) operating deficit, 4) cash ratio; 5) cash as a percent of monthly expenditures; and 6) reliance on short-term cash-flow debt. These factors are scored on a scale of 0-100 and then aggregated into an overall score given to the relevant entity. The score may fall into one of four categories: no designation; susceptible to fiscal stress; moderate fiscal stress; and significant fiscal stress. For more information see: https://www.osc.ny.gov/local-government/fiscal-monitoring.

[137] NYSOSC uses the term "environmental stress" to refer to factors not directly related to the fiscal management of public entities that can contribute to increased levels of fiscal stress. For municipalities these factors include changes in population and home value, median household income, poverty rates, reliance on State and Federal aid, and unemployment in the relevant geography. For school districts the factors evaluated include the percentage of economically disadvantaged students, student-teacher ratio, turnover among teachers, changes in property value, budget vote approval rates, and percentage of English language learners. The factors for both municipalities and school districts are scored on a scale of 0-100 and then aggregated into an overall score given to the relevant entity. This score may fall into one of four categories: no designation; susceptible to environmental stress; moderate environmental stress; and significant environmental stress.

Based on 2024 full value tax rates from the NYSOSC:

- The regional study area's county average effective tax rate[138] is $7.24 per $1,000 of full value, compared to an average of $5.21 for all counties in New York State.
- The regional study area's villages' average effective tax rate is $6.03 per $1,000 of full value, compared to an average of $6.14 for all villages in New York State.
- The regional study area's cities' average effective tax rate is $11.89 per $1,000 of full value, compared to an average of $10.37 for all cities in New York State.
- The regional study area's towns' average effective tax rate is $4.16 per $1,000 of full value, compared to an average of $3.98 for all towns in New York State.

According to real estate broker data, the estimated property tax bill on the median value home is currently $4,376 in Onondaga County, compared to $5,884 statewide. The median real estate taxes paid for other counties in the regional study area are as follows: in Cayuga, $3,345; in Cortland, $3,843; in Masion, $3,656; and in Oswego, $3,272 (PropertyShark, 2023).

The NYSOSC's FSMS evaluates fiscal stress in about 200 government entities in the regional study area. As of October 2024 (based on 2023 data), there were no municipalities in the regional study area identified as having "significant" or "moderate" fiscal stress, and only the Town of Schroeppel in Oswego County was identified as "susceptible to fiscal stress." The Town of Albion in Oswego County and the Town of Eaton in Madison County were identified as having "moderate" environmental stressors, while the Towns of Boylston and Parish in Oswego, the Town of Lebanon in Madison, and the Town of Willet in Cortland were identified as "susceptible to environmental stress."

As of January 2025 (based on 2024 data), no school districts in the regional study area were identified as experiencing "significant" fiscal stress. The Chittenango Central School District was the only district in the regional study area identified as experiencing "moderate fiscal stress." Four regional school districts were identified as "susceptible" to fiscal stress: Fabius-Pompey CSD in Onondaga County; Fulton City School District in Oswego County; the Homer CSD in Cortland County; and the Oneida City School District in Madison County.

The Comptroller determined that two school districts were experiencing "moderate" environmental stress: the Solvay Union Free School District in Onondaga County, and Brookfield CSD in Madison County. Six school districts were identified as "susceptible" to environmental stress: Liverpool CSD, Lyncourt Union Free School District, and West Genesee CSD in Onondaga County; Fulton City School District and Hannibal CSD in Oswego County; and Port Byron CSD in Cayuga County.

[138] The effective tax rate is the portion of taxable income paid in taxes (total taxes paid/total taxable income), as opposed to the marginal tax rate, which considers only the uppermost tax bracket applicable to reported taxable income.

3.15.3 Environmental Consequences

3.15.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The Rail Spur Site and the Childcare Site would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions. New York State and OCIDA would continue to have the goal of enhancing job growth in Central New York by promoting advanced manufacturing. Similarly, the Central New York Community Engagement Committee (CEC) would continue to have a priority of investing regionally in educational or workforce training programs (CEC, 2024).

However, without the Proposed Project investments many of these policy objectives would remain unmet. Without the Proposed Project, the regional workforce may struggle to adapt to an increasingly service- or tech-focused economy, exacerbating opportunity gaps for vulnerable populations. The net decline in manufacturing would likely also continue within the local study area. While the local study area population would continue to experience modest growth, the historical trends of job losses in some industry sectors would impact the ability of the local study area to accommodate increased populations and could lead to weaker market conditions. A source of high paying jobs to Onondaga County from the Proposed Project would also be eliminated, as would additional revenues to local and regional taxing authorities.

Therefore, the No Action Alternative could have adverse effects on local and regional economic development, labor, and employment until such time as OCIDA identifies another development proposed for the WPCP. The No Action Alternative would not result in any adverse effects on population and demographics, real property, housing, relocation, and displacement, or local governments and taxing districts, but beneficial effects related to economic development policies would not occur.

3.15.3.2 Preferred Action Alternative

This section describes the potential direct and indirect effects of the Preferred Action Alternative on socioeconomic conditions within the local and regional study areas. The assessment considers temporary effects that would occur during the Proposed Project's approximately 16-year construction period, as well as permanent effects that could begin during construction and would extend through ongoing operations.

This section also separately addresses the potential induced growth effects generated by the construction and operation of the Proposed Project and Connected Actions, including off-site increases in population, jobs and economic activity, and in residential, commercial, and industrial development (see Growth Inducing Effects section below).

Construction Effects

This section discusses the potential effects of the construction of the Preferred Action on the population and demographics of the local and regional study areas. Construction of the Connected Actions is anticipated to be undertaken by the available local and regional study workforce and is, therefore, not expected to affect the population and demographics of the local and regional study areas.

Population and Demographics

The Preferred Action Alternative does not include the construction of any residential dwelling units and, therefore, would not directly increase the population of the local or regional study areas. The construction of the Proposed Project would, however, indirectly increase local and regional study area populations through the in-migration of workers and their families into those areas, resulting in corresponding increases in local and regional study area employment and income and wage growth opportunities.

Through its agreement with Onondaga County, OCIDA, and ESD, Micron has committed to employing primarily union labor for construction of the Proposed Project.[139] Union labor wages and benefits exceed industry averages and, therefore, are expected to exceed the average annual wages for construction industry workers in Onondaga County ($80,873 in 2023) and the five-county region ($77,707 in 2023).[140] The Proposed Project's direct construction employment is expected to improve household incomes for Micron construction workers and their families living within the local and regional study areas. Though at a lesser scale, construction activities associated with the Connected Actions would also generate additional income opportunities for local and regional study area construction workers; workers on public works projects would receive prevailing wages and benefits.[141]

The increased household income benefits extend beyond the direct construction workforces. As detailed in the Growth Inducing Effects section below, the Proposed Project's construction activities would generate additional labor income within industries supporting Micron's operations and governments and businesses supporting workers' day-to-day spending. The growth of local and regional household incomes would begin at the start of construction in late 2025 and last throughout the 16-year construction period. Accordingly, the construction of the Preferred Action Alternative would have significant beneficial effects on the local and regional study areas through projected increases in average annual wages and household incomes for those areas, as well as the associated induced income growth through increased household spending.

Further discussion of the induced population and demographics growth effects from construction are provided in the Growth Inducing Effects section below.

Real Property and Housing

The construction of the Proposed Project would require a labor supply that could not be fully met by the available labor force within the local and regional study areas, resulting in the in-migration of workers and families to the local and regional study areas. The in-migration of workers and families for construction of the Proposed Project in the local and regional study areas would not create direct or indirect effects to real property and housing within the local and regional

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[139] It is expected that certain specialty trades and services may not be subject to union labor agreements though could be fulfilled by union labor.

[140] Onondaga County wage estimates from U.S. Bureau of Labor Statistics QCEW; the weighted average wage for the five-county region computed by AKRF based on QCEW workers and average wage data for the five counties.

[141] For more information on area prevailing wages see New York State Article 8 Prevailing Wage Schedules, https://apps.labor.ny.gov/wpp/publicViewPWChanges.do.

study areas. The induced effects of this population growth on housing demand, property values and housing costs are fully addressed in Growth Inducing Effects section below.

Relocation and Displacement

Proposed Project

Direct Residential Displacement

Direct displacement (sometimes called primary displacement) is the involuntary displacement of residents or businesses from sites directly affected by a project. As detailed in Section 3.15.2.2, a vast majority of the properties located on the WPCP were acquired by OCIDA through voluntary purchases from previous landowners, prior to Micron's site selection process and announcement of the Proposed Project. Given the voluntary nature and timing of those acquisitions, the residents who once lived on OCIDA-owned parcels are not considered directly displaced by the Proposed Project, with the following exception: Phase 1 construction would require the direct displacement of a single residence living on an OCIDA-owned property on Caughdenoy Road subject to a license agreement. OCIDA intends to engage in a mutually agreeable solution to relocate the family ahead of the start of construction of Fab 1; if an agreement is not reached, the household would be displaced pursuant to EDPL and could be entitled to compensation and relocation support pursuant to EDPL. The Proposed Project's direct displacement of the one household from the Micron Campus would be an adverse effect, but it would not substantively alter the demographics of the local study area. Even when accounting for the households who have been voluntarily displaced from the WPCP site for the past several years, the displaced population would not be of a scale that substantially alters residential demographics within the local study area, containing an estimated 37,778 households.

Therefore, the Proposed Project's direct residential displacement would not have a significant adverse effect on the local study area's socioeconomic conditions.

Direct Business Displacement

There are no businesses located on the Micron Campus, Childcare Site, or Rail Spur Site, and, therefore, the Proposed Project's construction would not result in any adverse effects from direct business displacement.

Connected Actions

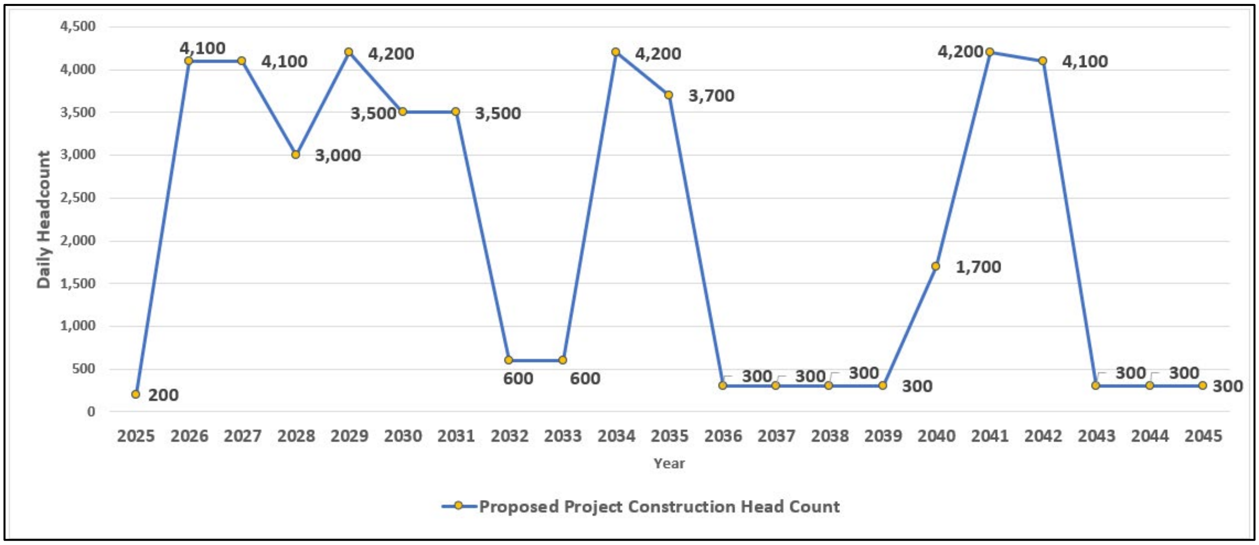
As detailed in Section 3.15.2.2 above and Section 3.1.2.2, most utility construction activity associated with the Connected Actions would occur within publicly owned property boundaries and public utility rights-of-way. However, construction of the industrial wastewater conveyance system connecting the Micron Campus to the new IWWTP at Oak Orchard would occur through easements on portions of 10 privately owned properties. One of these properties has been permanently acquired, is currently vacant, and contains structures that would be demolished. None of the other nine properties would require demolition, relocation, or movement of any structures. All necessary easements have been secured with the exception of two parcels which, if mutually agreeable easements cannot be obtained, would require eminent domain to acquire access to portions of the two properties. If an agreement cannot be reached with the owners, the property owners would be entitled to compensation pursuant to EDPL.

Construction of the wastewater conveyance and other Connected Actions would not displace any residents or businesses and, therefore, would not result in a significant adverse effect due to local or regional study area demographics or business conditions.

Economic Development, Labor, and Employment

It is estimated that construction of the Proposed Project would reverse the overall net job loss trend in the local and regional job construction sector, as it will require approximately 4,200 construction workers on-site daily at the peaks of the construction schedule. As illustrated in Figure 3.15-3, direct on-site construction jobs would fluctuate over time, with peak construction labor demand corresponding to construction of each fab. Appendix Q-3 provides additional detail on the types of construction labor required for the Proposed Project.

Figure 3.15-3 Proposed Project On-Site Construction Jobs (2025–2045)*



Source: Micron Technology (n.d.). Note: *Construction job estimates shown in this figure are representative of the on-site construction associated with the Micron Campus and Rail Spur Site. The Childcare Site would require an additional approximately 125 on-site construction workers daily during peak construction periods.

Although construction job estimates for the Connected Actions are not yet known, construction of Connected Actions would generate additional short-term construction job opportunities not quantified in the Proposed Project's construction job estimates above.

The Proposed Project's construction would provide new employment opportunities for unemployed, underemployed, and job-changing residents in the short-term (starting in 2025) and over the approximately 16-year construction period. The 4,200 on site construction jobs required at the peaks of the construction schedule would be more than double the annual construction employment in the local study area as of 2022 (see Appendix Q, Table Q-50), and would represent an approximate 30 percent increase in regional study area construction employment compared to 2022 levels (see Appendix Q, Table Q-57). This is a significant socioeconomic benefit of the Proposed Project during the 16-year construction period, which would also generate longer-term benefits. The creation of full-time, well-paying jobs is strongly associated with beneficial health outcomes, such as an increase in life expectancy, improved child health status, improved mental health, and reduced rates of chronic and acute disease morbidity and mortality (HDA, 2004; Cox et al. 2004).

In addition to direct job opportunities, construction activities would generate demand for jobs at businesses supporting Micron's construction (e.g., materials suppliers) and at businesses supporting workers' day-to-day spending. The REMI Study projects that during peak construction periods, Micron's construction supply chain demand would generate over 1,000 jobs at construction support businesses in the region and is predicted to generate over 5,000 regional jobs at governments and businesses supporting workers' day-to-day needs.[142] Accordingly, there would be a significant beneficial effect of the Proposed Project realized in both the local and regional labor workforce.[143]

The Proposed Project's initial construction labor demand would exceed historic year-to-year levels, which has the potential to create temporary shortages within local and regional construction labor supply. Temporary labor shortages could lead to higher construction labor costs for some specialized trades in markets within the region. These potential adverse effects are expected to be limited and short-term as the market adjusts to new entries.

In the longer-term, Micron and other construction-related employment opportunities would attract skilled workers to the region due to this increased labor demand (see also Growth Inducing Effects section below). The potential for significant adverse short-term effects would be avoided through Micron's partnership with various stakeholders in the community to scale the construction workforce including: partnering with CenterState Corporation for Economic Opportunity (CEO)[144] and ESD to scale existing programs that train new construction workers and facilitate entry into the trades; partnering with the local Building Trades Unions to increase membership and encourage training opportunities on semiconductor-specific construction skills; and planning to provide training and certifications through suppliers and distributors for semiconductor-specific construction skills, such as specialty welding skills.

To date, Micron has worked with local partners to identify the potential to source approximately 76 percent of the labor necessary for construction of Fab 1 from workers living within a 90-mile radius of the Micron Campus—exceeding the 64 percent rate conservatively assumed for analysis of the Proposed Project's construction effects—and will be initiating training and certifications to meet or exceed that higher target. The job training initiatives are a significant beneficial effect resulting from the Preferred Action Alternative, training the labor force in

[142] The REMI Study assumed a larger amount of on-site construction activity relative to Micron's 4,200 peak worker estimates, which could result in variation from REMI Study projections of off-site job demand (e.g., Micron's planned modular construction techniques reduce on-site construction activities with those activities shifting off-site, potentially outside the region.).

[143] The REMI Study estimated a 4-Fab facility's capital expenditures, facility operations, and other economic activities during both the operational and construction periods and employed a REMI multi-region Tax-PI model that forecasts and simulates responses to compensation, price, expenditures, and other economic factors on an annualized basis. This model then provides estimates of changes in economic and fiscal indicators as a result of the given inputs over the period 2025-2055. More information on the functionality of the REMI model is available in Appendix II of the REMI Study, which is included in Appendix C-2.

[144] Centerstate CEO is a business leadership and economic development organization servicing Central New York. For more information on Centerstate CEO see: https://centerstateceo.com/.

specialized construction trades that would provide a beneficial effect on the labor force beyond the Proposed Project's approximately 16-year construction period. These specialized training programs and the presence of these skills in the labor force provide long-term alternative pathways to higher wage employment workers employed in the trades, benefitting future age cohorts through apprenticeship.

In sum, construction of the Proposed Action Alternative is not expected to have significant adverse effects on economic development, labor, and employment within the local and regional study areas. Instead, it would result in significant beneficial effects through the creation of direct construction job opportunities and demand for jobs at businesses supporting Micron's construction and workers' day-to-day spending. Construction of the Proposed Action Alternative would also benefit the local and regional study areas through the creation of specialized training programs and new skilled labor in the regional work force.

Funding for Local Governments and Taxing Districts

The fiscal health of a municipality depends on its ability to maintain a balanced budget by providing an appropriate level of services to residents and businesses while maintaining a reasonable tax rate. Municipalities rely on various sources of revenue to fund their operations and provide essential services; those sources include service fees (e.g., building permits), fines, and taxes, including property taxes.

Proposed Project

Micron has submitted an application to OCIDA for Phase 1, requesting a 49-year PILOT agreement. If approved, the PILOT agreement would exempt Micron from county, town, and school property taxes. In place of these local tax payments, Micron would make PILOT payments that would be apportioned to those taxing jurisdictions in an identical manner as the apportionment of property taxes using the applicable yearly tax rates. Special ad valorem levies, special assessments, and user charges such as general fire protection, highway, sewer, and water would be paid in full.

As detailed in Section 3.14.3.2, construction of the Proposed Project is not expected to result in a substantial increase in demand for emergency and health services supporting the construction of the Proposed Project and would not have significant adverse effects on the operations of the local police, EMS, fire services, or healthcare facilities. The incremental costs to emergency service providers would be offset by the Proposed Project's property tax revenues (for local police and fire/EMS) and PILOT payments (for county police).

Thus, the Proposed Project's construction activities would not have a significant adverse effect on local governments and taxing districts from incremental demands created by the Proposed Project's construction activities, as it would provide payments under a PILOT agreement and is not expected to substantially increase demand for local governmental services. The Proposed Project's growth inducing effects on local governments and taxing districts is described in the Growth Inducing Effects section below.

Connected Actions

Construction of Connected Actions would be performed by the organizations shown in Table 3.15-4. The table also shows which utility enhancements would be exclusively for the Proposed Project, and which would also be available or benefit the public. For example, the additional natural gas line would be built for the Proposed Project only and would not be available for other businesses or residential properties. Similarly, the industrial wastewater conveyance from the Micron Campus to the IWWTP would be exclusive to the Proposed Project. Conversely, the water supply infrastructure and the IWWTP would benefit communities serviced by OCWA and OCDWEP within the local and regional study areas.

Table 3.15-4 Connected Actions – Responsible Parties and Beneficiaries

Connected Action	Responsible Party	Exclusive to Proposed Project?
Electricity	National Grid	Yes
Natural Gas	National Grid	Yes
Water Supply	OCWA	No
IWWTP	OCDWEP	No
Wastewater Conveyance	OCDWEP	Yes
Telecommunications	To be sourced in 2026	Yes

The Connected Actions are not expected to result in significant adverse effects on ratepayers. Onondaga County will establish policy and guidelines for appropriate user rates for the IWWTP to support Micron fabs and Micron would enter into a user agreement with OCWA to pay for operational expenditures. In addition, there are Federal, State, and local funding sources for these infrastructure expansions that the utilities may seek to receive. Micron would pay for gas and electrical upgrades from National Grid. Any increase in rates for National Grid customers would be subject to NYSPSC approval through rate case proceedings.

Operational Effects

The following sections describe the Preferred Action Alternative's operational effects on the local and regional study areas, focusing on the Proposed Project's operational effects. Operation of the Connected Actions is not expected to result in significant changes to socioeconomic conditions.

Population and Demographics

As detailed in Appendix Q-3, the Proposed Project's manufacturing jobs would generate new household income for thousands of existing residents within the local and regional study areas. In addition to income from direct employment, the Proposed Project would generate additional labor income for workers within Micron's supply chain (within and outside the local study area), and for workers located throughout the region at businesses supporting day-to-day spending created by the increases in household income. This would be a significant beneficial effect of the Proposed Project.

The increases in economic activities attributable to the Proposed Project's operations would also lead to growth in local and regional study area businesses and worker populations; the induced effects of which are described in the Growth Inducing Effects section below.

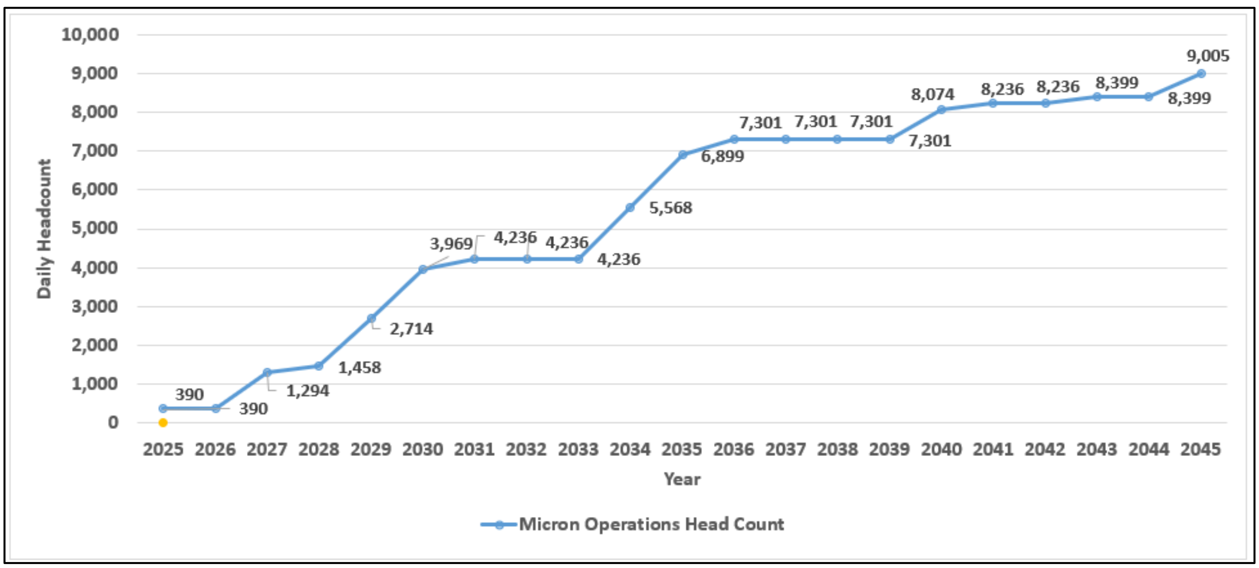
Real Property and Housing

The operation of the Proposed Project would require a labor supply that could not be fully met by the available labor force within the local and regional study areas, resulting in the in-migration of workers and families to the local and regional study areas. The in-migration of workers and families for operation of the Proposed Project in the local and regional study areas would not create direct or indirect effects to real property and housing within the local and regional study areas. The induced effects of this population growth on housing demand, property values and housing costs are fully addressed in Growth Inducing Effects section below.

Economic Development, Labor, and Employment

As shown in Figure 3.15-4, direct (on-site) operational jobs at the Micron Campus would steadily increase as fabs are brought online over the Proposed Project's full build-out. By 2041, with four fabs in operation, there would be approximately 8,200 permanent on-site operational jobs. When at full operational capacity in 2045, the Proposed Project would generate approximately 9,000 permanent on-site operational jobs.

Figure 3.15-4 Proposed Project On-Site Operational Jobs 2025-2045



Source: Micron Technology (n.d.).

Using its existing labor models for high-volume fabs around the globe, Micron has estimated that 90 percent of on-site operational workers would be dedicated to manufacturing, and the remaining 10 percent would provide support services, including IT, security, quality, procurement, supply chain, smart manufacturing technology, finance, people, and legal services. Annual salaries plus cash bonuses of employees at the Micron Campus are expected to average approximately $100,000. This amount exceeds the average annual wages per employee in Onondaga County ($62,768 in 2023) and for manufacturing employment specifically ($83,578).

Appendix Q-3 provides additional information on Micron manufacturing jobs and required skillsets.

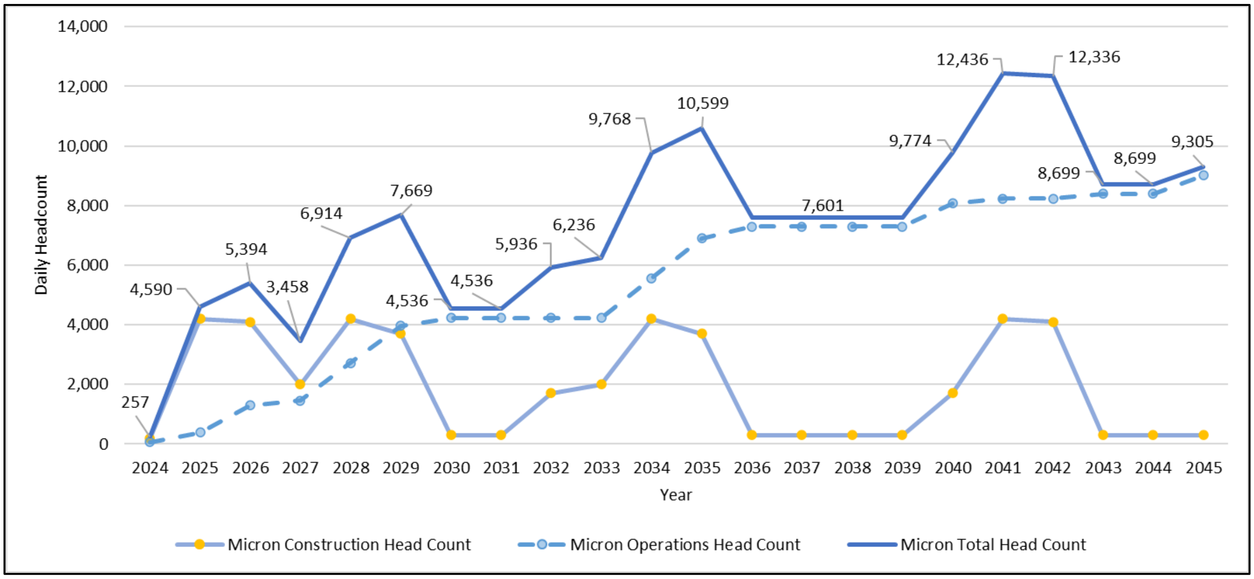
Micron would operate five (5) shifts over a 24-hour day. Day and night shifts would be utilized to sustain 24-hour manufacturing activities, as well as a Monday-Friday day shift. Additionally, the facilities at the Childcare Site would employ approximately 40 permanent workers.

Nationally, there are significant shortages of engineers and skilled technicians across all industries. Semiconductor manufacturers have had particular difficulty attracting workers with technology skills and, therefore, need to offer competitive wages while also investing in recruiting, workforce training, and educational programs necessary to develop talent. Education and workforce training programs already being initiated (detailed in Appendix Q) would help to prepare the regional workforce for jobs at the Micron Campus, and the Proposed Project's operational labor needs are expected to be met in large part by existing labor force participants residing within reasonable commuting distance of the Micron Campus. Given the Micron Campus' proximity to colleges and universities, the regional collaborations, and initiatives for training already in place, and with additional investments through the Green CHIPS CIF[145] it is reasonable to assume that Micron could exceed the 60 to 70 percent local job recruitment rates experienced at Micron's Boise, Idaho and Manassas, Virginia facilities. For the Proposed Project, this equates to over 6,300 permanent operational high-paying jobs secured by existing local and regional study area residents, and approximately 2,700 secured by workers who would be in-migrating to the region.

Figure 3.15-5 presents the anticipated scale of total on-site construction jobs, operational jobs, and total jobs between 2025 and 2045. On-site activity would peak at an estimated 12,436 workers in 2041, with the completion and operations of Fab 4.

[145] For more information on the Green CHIPS CIF *see* https://esd.ny.gov/green-chips-community-investment-fund#workshop-recording.

Figure 3.15-5 Proposed Project Total Jobs 2025-2045



Source: Micron Technology (n.d.).

In addition to on-site Micron jobs detailed above, the Proposed Project would generate labor demand in industries supporting Micron's construction and operations. The REMI Study projects that by 2041, approximately 33,000 non-Micron jobs would be created within the five-county region. The Growth Inducing Effects section below details the jobs indirectly generated by the Proposed Project and its effects on local and regional socioeconomic conditions.

Thus, the Proposed Project's operational activities would not have a significant adverse effect on economic development, labor and employment in the local and regional study areas. Conversely, it would provide significant beneficial effects through its creation of approximately 9,000 on-site jobs across numerous sectors at increased annual wages, as well as generating labor demands in industries supporting Micron construction and operation. The Proposed Project is also projected to benefit the local and regional study areas through creation of skill-worker training initiatives that would provide regional laborers with job growth opportunities.

Funding for Local Governments and Taxing Districts

As detailed in Section 3.14.3.2, the Proposed Project's operational activities would not be expected to result in a substantial increase in demand for emergency or healthcare services and would not have significant adverse effects on the operations of the local police, EMS, fire services, or healthcare facilities. The incremental costs to these emergency providers would be offset by the Proposed Project's property tax revenues (for local police and fire/EMS) and PILOT payments (for county police). Therefore, the demands from the Proposed Project's on-site operational activities would not have a significant indirect adverse effect on the funding for local governments and taxing districts.

Growth Inducing Effects

This section describes the socioeconomic effects of the Proposed Project's induced growth. As detailed in Appendix C, the Proposed Project's induced growth includes off-site increases in population, increases in jobs and economic activity, and increases in residential, commercial, and industrial development. This assessment focuses on the induced growth generated by the construction and operation of the Proposed Project. Any induced growth resulting from the Connected Actions would not substantially alter the findings of this assessment, as construction and operation of the Connected Actions is not anticipated to require substantial in-migration of workers or the growth of residences and businesses to support construction.

Population and Demographics

The REMI Study estimates that by 2035 the Proposed Project would induce growth of approximately 43,000 new residents (a 6 percent increase from 2023) within the five-county regional study area and approximately 64,000 new residents by 2041, which equates to about 8 percent of the region's year 2023 population. The REMI Study further estimates that the Proposed Project could generate over $2 billion in induced disposable personal income in the five-county region by 2035 and over $3.3 billion by 2041.[146] This represents a significant long-term beneficial effect of the Proposed Project.

As detailed in Appendix Q, the Proposed Project would lead to in-migration of Micron workers and their families, the retention of existing residents and workers and their families, retention and in-migration of supply chain workers and families, retention and in-migration of workers supporting the increase in household spending from additional population and labor income, and the retention and in-migration of other residents attracted to the area by increased social and economic opportunities. As noted in the REMI Study, these population effects would be primarily driven by the in-migrating population to the region, largely due to the expanded availability of high compensation jobs.

Based on experience from other operating Micron facilities and ACS data, it is anticipated that in-migrating Micron workers would locate within reasonable commuting distances of the Micron Campus (i.e., within 45 minutes) and, therefore, the Proposed Project would result in higher population densities in the local area and other nearby communities within Onondaga and Oswego counties.[147] Similarly, induced workers (i.e., those not working at Micron) are anticipated to locate within a 45 minute commute of their places of work and, thus, could locate throughout the local and regional study areas and in existing population centers where consumer demands and needs for goods and services would increase.

As detailed in Appendix C, for purposes of assessing the potential magnitude of induced population effects at a community level, this assessment utilizes ranged estimates of induced household growth at the town and county levels, based on regional projections from the REMI Study and applying a 2.3 persons-per-household assumption (based on ACS 2019-2023 5-year estimates for the five-county region). As shown in Table 3.15-5, several towns could experience household growth exceeding 10 percent of existing household estimates (areas with the greatest

[146] This includes disposable income from jobs supporting Micron's supply chain (defined as indirect income by REMI), and jobs servicing the region's increased household consumer needs (defined as induced income by REMI).

[147] Based on ACS 2023 5-year estimates, the average commute time to work within the regional study area is approximately 22 minutes; approximately 75 percent of the working labor force in the regional study area have commute-to-work times of less than 30 minutes, and approximately 91 percent of workers commute less than 45 minutes.

potential to experience significant socioeconomic effects). The Towns of Clay, Cicero, and Dewitt could see an increase of over 15 percent compared to current household estimates. Full ranged estimates by municipality within the five-county region by 2035 and by 2041 are presented in Appendix C.

Table 3.15-5 Induced Household Growth Projections Exceeding 10 Percent of Existing Household Estimates

Geographic Area	Project-Induced Households by 2041* High-End Estimates	Percent Increase in Households compared to 2023 Census ACS Estimates High-End Estimates
CNY Region (Total)	27,546**	8.6%
Onondaga County	*23,518*	*12.1%*
Town of Clay	3,866	15.4%
Town of Cicero	2,348	18.6%
City of Syracuse	7,570	12.8%
Town of Dewitt	1,471	14.2%
Town of Lysander	1,394	15.5%
Town of Manlius	1,459	10.5%
Town of Onondaga	1,126	13.0%
Town of Van Buren	800	12.4%
Oswego County	*4,561*	*9.7%*
Town of Constantia	195	10.4%
Town of Hastings	400	10.4%
Town of Palermo	127	10.4%
Town of Schroeppel	352	10.4%
Town of Volney	244	10.4%
Town of West Monroe	177	10.4%

Source: AKRF. Note: * Induced household growth estimates presented in this table include all Proposed Project-induced new populations, including: in-migrating Micron workers and their families and the retention of existing residents/workers and families analyzed as indirect growth in resource assessments; in-migrating and retained supply chain workers and families; in-migrating and retained workers and their families supporting the increase in household spending from additional labor income; and other retained and in-migrating residents attracted to the area by increased social and economic opportunities. **The CNY region estimate is provided by the REMI Study and is a single point estimate (i.e., not a high-end estimate); high-end estimates by county are conservative and exceed the CNY region total estimate.

Table 3.15-5 presents the geographic areas anticipated to exceed a growth of over 10 percent of current household estimates (see also Appendix C).

Communities within the region have not experienced population growth of this size since the 1950s and 1960s; the region's overall population has grown by only 3 percent since 1970. The Proposed Project's economic activities would attract and retain working-age households, including young families, which has been a diminishing cohort in many regional communities. There would be induced job demand across numerous industry sectors and job types (detailed below) such that the Proposed Project's induced households would be expected to have a range of incomes. With greater employment opportunities, there are also greater opportunities to achieve higher incomes. As stated above, the REMI Study projects over $2 billion in induced disposable personal income in the five-county region by 2035 and over $3.3 billion by 2041 as a result of the Proposed Project.[148] This would be a significant long-term beneficial effect.

The household growth anticipated from Micron's worker populations at a community level would be of a scale that may be readily noticeable in terms of increased population densities, as well as increased commercial and residential activity. While there would be new single-family housing development, much of the new housing already planned and projected is expected to be of a higher density in existing and newly formed town centers, consistent with the housing development framework advanced in Plan Onondaga, Onondaga County's Comprehensive Plan (Onondaga County Department of Planning, 2023). Given the projected population increases, in some communities there is the potential for loss of a more rural lifestyle, and some may even relocate as a result. While for some this is a potential adverse effect, it would not lead to significant adverse socioeconomic effects because the Proposed Project would be facilitating growth, consistent with applicable community plans. From a socioeconomic perspective, it would avoid the potential for stagnating conditions that can lead to neighborhood disinvestment or blight.

Real Property and Housing

The Proposed Project's induced population would be large enough to alter local and regional housing markets. While there have been increases in housing demand and production within some regional communities, the Proposed Project's induced growth would generate housing demand at a scale not experienced since the 1970s. As detailed in Appendix Q, the median built year for a residential property in the regional study area is 1957 and only approximately 10 percent of the current housing stock was constructed after the year 2000. From 2010 to 2022, the region saw a 2.6 percent increase in its housing stock, while the number of vacant units increased over 4.6 percent during the same period. In real terms, the median gross rent throughout the local study area increased only 3.8 percent between the years 2010 and 2022.

The in-migrating labor force would increase the demand for housing and exceed available vacant supplies in the local study area.[149] Because Micron construction would begin as soon as practicable after all applicable regulatory approvals are secured, the local study area would likely not be able to provide new housing stock necessary to accommodate a substantial number of Phase 1 construction workers and their families. A portion of new workers and their families would rent or purchase homes from existing available supply (vacant rental and for-sale units), while others would seek housing outside of the local study area and within the regional study area or beyond. There are numerous communities within reasonable commuting distance of the Micron Campus (i.e., within approximately 45 minutes), such that demand pressures created locally would be alleviated to some degree by housing availability in the broader regional study area. However, the local study area would experience increased demand for rental and for-sale housing, which in turn could lead to increases in property values, home purchase prices, and residential rents. This, in turn, could lead to the indirect displacement of local study area residents unable to afford rent

[148] This includes disposable income from jobs supporting Micron's supply chain (defined as indirect income by REMI), and jobs servicing the region's increased household consumer needs (defined as induced income by REMI).

[149] According to 2023 ACS data, of the roughly 1,800 vacant housing units located in the local study area, only 382 of these were listed for rent or sale. As detailed in Appendix Q, the Proposed Project is anticipated to require the in-migration of approximately 1,500 construction workers from outside the 90-minute commuter shed.

increases, which could result in a potential short-term significant adverse socioeconomic effect (see Section 3.15.4, Mitigation).

While there would be rent pressures attributable to the Proposed Project's induced growth in markets beyond the local study area, the projected growth within regional communities is more disperse, and in larger part attributable to non-Micron induced growth that would not be as immediate, allowing time for regional markets to respond to the increased demand through new housing production. Areas which are highly desirable to the incoming populations may see larger rent and home price increases; different communities may experience these increases at different temporal scales, although the property market should be expected to react to the new demand within approximately four years.[150]

Although the introduction of additional households may create short-term challenges in local and regional housing markets, there is the potential for long-term benefits. The increased housing demand would lead to investment in neighborhoods where deferred maintenance and lack of housing production are present, including in the City of Syracuse, where housing conditions have been deteriorating for some time.[151] Additional demand for housing leading to an increase in rent may create a market environment where the existing housing stock can be upgraded and maintained at a higher standard. Higher demand can be expected to spur the development of new housing throughout the region, including housing types that have historically been underdeveloped in the region. For example, new multi-family developments near public transportation could benefit not only in-migrating families but also existing residents looking to downsize and/or relocate closer to community centers and transit.

The Proposed Project's induced growth could lead to increases in commercial and industrial property values and rents for some existing businesses. The Proposed Project's supply chain demands would facilitate improvements and redevelopment of some industrial properties, while the induced population and personal income generated by the Proposed Project would spur demand for consumer goods and services, leading to higher revenue potential for businesses, along with the potential for higher commercial rents. While some businesses could be adversely affected by indirect displacement due to rent increases, the growth inducing effects of the Proposed Project are not expected to result in significant adverse socioeconomic effects within any local or regional study area communities. Properties experiencing business displacement would not remain vacant; they would be redeveloped with uses responding to market demand and meeting the needs of residents and businesses. Given the range of job types induced by the Proposed Project (detailed below), in-migrating workers are expected to have a range of household incomes; therefore, there would be growth in overall household consumer offerings, and continued demand for goods and services at a range of price points.

[150] According to USCB Residential Construction Survey (Northeastern region) data and an affordability assessment conducted in November of 2023 by JP Morgan, four years is a conservative estimate for a market reaction and an effective decrease in housing prices. Tertiary factors may accelerate or decelerate this market reaction.

[151] In a 2024 study entitled "Syracuse Housing Strategy" prepared for the City of Syracuse, czbLLC found that the Syracuse housing market was struggling with chronic maintenance issues related to extensive low demand. Market conditions had disincentivized private, unsubsidized investment into the housing stock, leading to soft sub-markets with roughly one-third of all residential properties in the city in "visible decline."

Economic Development, Labor, and Employment

Economic Development

The Proposed Project would generate substantial new economic activity in the five-county region, facilitating the growth of industries and commercial and residential development. The REMI Study estimates that between 2025 and 2055 construction and operations of a 4-fab facility at the WPCP would generate an annual average of $14.9 billion in real economic output (in 2025 dollars) within the five-county region and $8.6 billion annually in real gross domestic product (GDP) impacts within the region.[152] In 2027 (the second full year of construction activity), the REMI Study projects $9.5 billion annually in regional economic output (in 2025 dollars) and $5.3 billion in GDP growth. By 2041 the projected $16.7 billion in real economic output (in 2025 dollars) would include over $7 billion annually generated by supply chain businesses and nearly $4 billion annually generated at businesses supporting new worker and household spending. Comparatively, in 2023 the regional study area had an annual GDP of $57 billion, roughly 2.6 percent of New York State's overall GDP (U.S. Bureau of Economic Analysis, n.d.). Additionally, the Proposed Project's induced growth would encourage economic diversity, increasing regional competitiveness and strengthening regional supply chain industries. The supply chain and consumer spending activity would support existing businesses and would attract new businesses to the region. This is a significant beneficial, long-term effect of the Preferred Action Alternative within the local and regional study areas.

Labor and Employment

The Preferred Action Alternative's induced growth would generate labor demand and employment opportunities throughout the region in a variety of industry sectors. The Preferred Action Alternative's construction and operations would require support from regional supply chain businesses, including those providing raw materials and equipment to the Micron Campus. The REMI Study estimates that between 2025 and 2041 construction activities would generate an annual average of approximately 1,200 regional jobs at businesses supporting the Proposed Project's construction. By 2041, a 4-fab facility is projected to generate approximately 9,500 jobs at regional businesses supporting Micron's construction and operations. Table 3.15-6 presents the REMI Study's projected distribution of "supply chain" jobs generated within industries supporting Micron's construction and operations in 2027, 2035, and 2041. Although these amounts fluctuate annually within the REMI Study projections, manufacturing businesses, as well as businesses providing administrative support and waste management services, are expected to receive the highest amount of job creation in support of the Proposed Project's construction and operations.

[152] The REMI Study defines economic output as the amount of production, including all intermediate goods purchased as well as value added (compensation and profit). This can also be thought of as sales or supply. GDP is the market value of goods and services produced by labor and property. It is also the sum of value-added across all industries. The REMI Study assumed a larger amount of on-site construction activity relative to Micron's 4,200 peak worker estimates, which could result in variation from REMI Study projections of off-site job demand (e.g., Micron's planned modular construction techniques reduce on-site construction activities with those activities shifting off-site, potentially outside the region.).

Table 3.15-6 Projected Supply Chain Jobs by Industry

NAICS Industry Sector	Jobs by 2027	Jobs by 2035	Jobs by 2041
11. Agriculture, Forestry, Fishing and Hunting	0	1	1
21. Mining, Quarrying, and Oil and Gas Extraction	16	11	1
22. Utilities	7	9	10
23. Construction	7	13	16
31-33. Manufacturing	3,553	3,490	6,233
42. Wholesale Trade	182	179	104
44-45. Retail Trade	419	144	26
48-49. Transportation and Warehousing	126	131	113
51. Information	5	6	9
52. Finance and Insurance	7	11	11
53. Real Estate and Rental and Leasing	71	78	88
54. Professional, Scientific, and Technical Services	389	469	512
55. Management of Company and Enterprises	3	7	9
56. Administrative and Support and Waste Management and Remediation Services	1,234	1,341	2,172
61. Private Educational Services	2	3	4
62. Health Care and Social Assistance	7	7	2
71. Arts, Entertainment, and Recreation	11	12	14
72. Accommodation and Food Services	35	49	66
81. Other Services (except Public Administration)	78	78	70
92. Public Administration	0	0	0
Total Supply Chain Jobs	6,152	6,037	9,461

Source: REMI Consulting and ESD, based on projections summarized in the REMI Study (Appendix C-2).

In addition to generating new supply chain jobs, the Proposed Project's induced economic activity would increase housing production and household spending, leading to additional labor demand in the variety of sectors that serve workers' and residents' day-to-day needs. The REMI Study estimates that by 2041 construction of a 4-fab facility would generate demand for approximately 23,500 regional workers to satisfy the increase in household consumption. Induced jobs supporting new household spending (e.g., restaurants, retail stores and doctors' offices) would be realized largely within communities that receive induced residential growth. Table 3.15-7 shows the projected industry sector distribution of induced jobs from increased household spending. Although these amounts fluctuate annually within the REMI Study projections, by 2041 state and local governments (including public schools) are expected to receive the highest amount of job creation from increased household spending, followed by health care and social assistance; accommodations and food services; professional, scientific, and technical services; and retail trade.

Table 3.15-7 Projected Jobs Supporting Household Spending

NAICS Industry Sector	Jobs by 2027	Jobs by 2035	Jobs by 2041
11. Agriculture, Forestry, Fishing and Hunting	12	5	3
21. Mining, Quarrying, and Oil and Gas Extraction	6	1	3
22. Utilities	32	11	21
23. Construction	2,164	1,052	1,155
31-33. Manufacturing	505	-106*	172
42. Wholesale Trade	5479	373	723
44-45. Retail Trade	1,358	1,167	1,772
48-49. Transportation and Warehousing	670	626	1,080
51. Information	62	33	45
52. Finance and Insurance	111	-7*	11
53. Real Estate and Rental and Leasing	552	502	767
54. Professional, Scientific, and Technical Services	1,051	1,509	2,499
55. Management of Company and Enterprises	8	-24*	-30*
56. Administrative and Support and Waste Management and Remediation Services	718	559	934
61. Private Educational Services	164	153	245
62. Health Care and Social Assistance	1,628	1,595	2,528
71. Arts, Entertainment, and Recreation	583	557	828
72. Accommodation and Food Services	1,423	1,647	2,502
81. Other Services (except Public Administration)	1,013	996	1,491
92. State and Local Government (including Public Schools)	3,022	4,683	6,689
Total Jobs Supporting Household Spending	15,579	15,329	23,436

Source: REMI Consulting and NYS ESD, based on projections summarized in the REMI Study (Appendix C-2). Note: *Induced growth can lead to jobs shifts that reduce certain industry job types over a period of time within a region.

When accounting for both supply chain jobs and jobs at businesses supporting household spending, based on projections from the REMI Study, the Proposed Project could induce over 3.5 jobs in the region for every job created on-site. The growth in job opportunities within a range of industry sectors would be a significant benefit to the local and regional study areas. However, the induced labor demand generated by the Preferred Action Alternative could lead to temporary labor shortages in some sectors where the existing labor force is unable to readily meet demand, which in turn could lead to increases in labor cost. This potential adverse effect within the local and regional study areas is expected to be short term—likely during the earliest years of construction and operations, prior to any labor shortages being met through in-migrating workers and/or job training for existing unemployed or underemployed workers—and would not result in significant adverse effects on the labor market.

Funding for Local Governments and Taxing Districts

The Proposed Project's induced development, employment, and new populations would have an effect on municipal and school budgets. While the Proposed Project would generate additional sources of revenues through the creation of new commercial businesses and household growth, it would also increase demands on existing public services, including schools. Where new revenues exceed additional costs, the induced growth could have a beneficial effect on local governments and taxing districts.

The Proposed Project's projected induced growth is expected to generate substantial new revenues for local governments and taxing districts from new commercial businesses and household growth principally through the form of property and school taxes. The REMI Study estimates that a 4-fab facility's economic activity would, on average, generate nearly $500 million annually in local government and taxing district revenues for municipalities within the region. Although sources and recipients of these revenues are not specified in the REMI Study, much of the revenue would be generated by the Proposed Project's induced development and economic activities and would be realized within communities where induced development would occur.

The net fiscal impact of induced growth within any given municipality or school district depends on many factors, including: the amounts and types of induced development (commercial, industrial, residential) that a specific municipality would receive; existing labor and infrastructure capacities, and whether induced growth can be served by existing employees and infrastructure, or whether new employees and infrastructure would be needed; and whether new development is concentrated near existing infrastructure and service providers. The REMI Study does not provide the level of detail necessary to quantify net effects for municipalities or school districts within the local and regional study areas, and any projections of net effects at a municipal level would be speculative. However, for the following reasons the effects of induced growth on local and regional communities are not expected to result in significant increases in taxes or the substantial diminishment of community services:

- The Proposed Project would induce both commercial and residential development. Property taxes from commercial growth tend to offset the higher municipal costs associated with household

- Some in-migrating families would send their children to private schools, reducing the potential cost of services to public schools. According to NYSED data, within the regional study area approximately 12 to 15 percent of students attend private schools.

- The Proposed Project's induced growth is expected to include a larger proportion of multi-family resident development relative to existing supply. This would present municipal service efficiencies through co-location. Moreover, denser housing is typically located within town centers, near services, reducing marginal costs associated with provision of services.

- Many municipalities are planning for growth or have plans already in place to manage growth by applying smart growth principles (mixed-use, transit-oriented development, range of housing opportunities walkable neighborhoods, preservation of open space, etc.), and through effective municipal budgeting and capital planning are prepared to adjust for growth.

- Based on New York State enrollment data, school districts in the region have experienced decreasing enrollment over the past 20+ years (see Table 3.15-3), suggesting potential for fewer physical capacity constraints requiring capital improvements and associated bonding. When sufficient school infrastructure exists, the marginal cost of new students is relatively low. Districts already struggling with physical capacity as well as those that have significantly reduced physical capacity or staffing could require new investment in buildings and staff to meet demand. Even in those circumstances, the additional tax revenues generated by induced businesses and households through property taxes would be expected to avoid the potential for significant adverse effects on the tax base.

- If schools are forced to further shutter buildings and/or substantially reduce staff in advance of the projected influx of students, there would be the potential for physical capacity and/or staffing constraints that would require increases in budgets not fully met by incremental property tax revenues. Overall, the influx of students and property tax revenues would largely benefit the fiscal position of school districts, many of which have faced challenges with decreasing enrollment.

Data on the current fiscal and environmental stress of the affected municipalities can also be analyzed to project the potential future effects of the Proposed Project on municipalities and school districts. As detailed in Section 3.15.2, based on the NYSOSC's FSMS assessment, there are currently no municipalities in the local or regional study area identified as having "significant" or "moderate" fiscal stress,[153] and only the Town of Schroeppel in Oswego County was identified as "susceptible to fiscal stress." Districts identified as fiscally stressed or susceptible to fiscal stress could be more vulnerable to adverse effects of the Proposed Project's induced household growth, but additional property tax revenues from induced commercial and residential development would alleviate fiscal stress and avoid the potential for significant adverse fiscal effects.

[153] Existing poor fiscal health can hinder an effective response to growth. Factors such as low amounts of cash on hand, high debt service costs as a percentage of revenues, regular operating deficits in secondary or primary funds, and high short-term liabilities all contribute to an ineffective fiscal environment. In addition, various factors in the economic environment, such as an aging population, low household incomes, a shrinking tax base, and a high reliance on state/federal aid, can hinder effective responses to growth by a municipality.

With respect to municipalities in the local or regional study area identified as having “significant” or “moderate” environmental stress,[154] as of October 2024 (based on 2023 data), only the Town of Albion in Oswego County and the Town of Eaton in Madison County were identified as having “moderate” environmental stressors. The Town of Boylston and the Town of Parish in Oswego County, the Town of Lebanon in Madison County, and the Town of Willet of Cortland were identified as “susceptible to environmental stress” (NYSOSC, 2024b). The economic activity and population introduced to these communities through the Proposed Project’s induced growth could relieve some of these environmental stressors, which is a benefit of the Proposed Project.

For school districts, the NYSOSC’s FSMS environmental stress factors include student/teacher ratios, teacher turnover, students from economically disadvantaged backgrounds, large percentages of English language learners, and budget support, among others. As of January 2025 (based on 2024 data), the NYSOSC determined that two school districts were experiencing “moderate” environmental stress: the Solvay Union Free School District in Onondaga County, and Brookfield CSD in Madison County. Six school districts were identified as “susceptible” to environmental stress: Liverpool CSD, Lyncourt Union Free School District and West Genesee CSD in Onondaga County; the Fulton City School District and Hannibal CSD in Oswego County; and Port Byron CSD in Cayuga County (NYSOSC, 2024b). Within these districts there may be the need for additional staffing and/or capital investments that would present short-term challenges even with an expanding tax base.

In many cases, the Proposed Project’s induced economic growth has the potential to remedy factors contributing to fiscal and environmental stress, as defined by the NYSOSC. For example, increased economic activity due to the presence of the Proposed Project, as well as anticipated investments into educational resources through the Green CHIPS CIF, create the potential for reduced poverty and increased employment opportunities. These changes would likely result in lower rates of environmental stress, particularly for school districts, while creating more educational and future workforce opportunities for students. Thus, the Proposed Project’s induced development, employment, and new populations are not anticipated to have a significant adverse effect on the funding for local governments and taxing districts, including schools.

Section 3.14 (Community Facilities, Open Space, and Recreation) considers growth inducing effects on specific municipal services and identifies the potential for significant adverse effects on Clay Fire and the Town of Clay fire response. With the proposed mitigation, effects are not expected to result in significant adverse changes to property taxes or the overall provision of municipal services within the local study area.

Summary of Effects

The socioeconomic effects of the Preferred Action Alternative would be significant and beneficial. The Proposed Project would generate substantial new economic activity in the local and regional study areas. The REMI Study projected that operations of a 4-fab facility would

[154] The NYSOSC evaluation of environmental stress includes factors that may affect the entities’ ability to sustain operations in the future. These factors include the population growth or loss within each entity as well as the percentage of the population in poverty, the unemployment rate, median household incomes, age of population, reliance on state/federal aid, among others.

generate over $10 billion in real GDP impacts within the regional study area alone.[155] The Proposed Project would generate additional tax revenues for the local and regional study areas and would invest $500 million in local and regional initiatives that advance identified community needs.

The Proposed Project would lead to substantial job generation within the local and regional study areas. The construction of the Proposed Project would generate over 4,000 on-site construction jobs, providing new construction employment opportunities and additional income for unemployed, underemployed, and job-changing residents in the short-term (starting in 2025) and over the approximately 16-year construction period. Longer-term, the job skills and labor income generated from the Proposed Project would continue to have significant benefits to local and regional area construction workers and their families. By 2045 the Proposed Project would generate over 9,000 permanent on-site operational jobs, providing long-term skilled employment opportunities for unemployed, underemployed, and job-changing residents in the local and regional study areas. The Proposed Project also would attract and retain working-age households, including young families that has been a diminishing cohort in many regional communities.

In addition to on-site benefits, the Proposed Project's construction and operational activities would generate off-site economic activity and additional jobs and labor income within industries supporting Micron's construction, and within governments and businesses supporting workers' day-to-day spending. The Proposed Project would generate over $2 billion in induced disposable personal income in the five-county region by 2035 and over $3.3 billion by 2041. By 2045 the Proposed Project would generate demand for nearly 9,500 jobs at regional supply chain businesses and approximately 23,500 jobs at regional governments, institutions, and businesses supporting the growth in regional household spending (approximately 33,000 off-site jobs in total). This would increase jobs in numerous industry sectors and increase income opportunities for the regional workforce, a significant benefit of the Proposed Project.

In some cases, the socioeconomic effects of the Proposed Project are more complex and could have adverse effects for certain populations or businesses, even when there are benefits for others. The Proposed Project's construction could result in the direct displacement of one household located on an OCIDA-owned parcel in the WPCP. This adverse effect is not considered a significant adverse socioeconomic effect because the displacement of one household would not substantively alter the population or demographics of the local or regional study areas.

The Proposed Project's on-site labor demands—combined with off-site labor demand generated by its induced growth—could lead to temporary labor constraints within the local and regional economies, particularly in the construction sector, which could result in short-term increases in construction and other labor costs. Labor shortages would be met through in-migrating workers and job training for existing unemployed and underemployed workers as well as job-changers and, therefore, would not result in significant adverse effects on labor markets in the local or regional study areas.

While some municipalities and school districts would experience increases in costs associated with the Proposed Project's induced growth, new property taxes and other revenues

[155] Comparatively, in 2023, the regional study area had an annual GDP of $57 billion.

generated by induced growth would avoid shortfalls in budgets that require significant increases in tax rates and/or the diminishment of public services. The REMI Study projects that construction and operations of a 4-fab facility would generate nearly $500 million annually in local government revenues for municipalities within the region. Specific to the Clay Fire local study area fire district, as detailed in Section 3.14.4, mitigation measures have been identified to address the potential significant adverse effect on Clay Fire and the Town of Clay fire response. With this mitigation, the Proposed Project would not be expected to result in significant increases in tax rates or the diminishment of fire services.

The Proposed Project's induced growth would also lead to short-term challenges from increased housing demand, costs and rents, and the potential indirect displacement of residents unable to afford their homes. In the long-term, however, induced growth from the construction and operations of the Proposed Project would lead to increased demand for housing, housing repair and development, and increased property values. An increase in demand for housing could spur investment in neighborhoods where deferred maintenance and lack of housing production are present, as well as development of new types of housing.

Finally, given the projected population increases in some communities there is the potential loss of a more rural lifestyle. While this is a potential adverse effect, it would not lead to significant adverse socioeconomic effects because the Proposed Project would facilitate growth, consistent with applicable community plans; it would avoid the potential for stagnating conditions that can lead to neighborhood disinvestment or blight.

3.15.4 Mitigation Measures

The Preferred Action Alternative's induced housing demand may lead to rent increases and the potential to indirectly displace residents who cannot afford rent increases. Within the local study area, this has the potential to result in a short-term significant adverse socioeconomic effect.

Notwithstanding, this short-term potential significant adverse effect will be addressed through the provision of additional affordable housing supply facilitated by investments from the State of New York through Governor Hochul's long-term statewide housing approach and New York Housing Compact initiatives; and local initiatives like the Onondaga County Housing Initiative Program (O-CHIP) and the OCIDA's tax exemption program for housing projects. New housing supply—inclusive of affordable housing—would serve to control rent increases and is a critical component of meeting existing and future community demand for housing at lower income levels. Affordable housing would benefit existing residents, many of whom already struggle with rising housing costs (NYSOSC, 2024c). In addition, within urban cores like Syracuse, the resulting increase in housing demand could help to address longstanding issues related to deferred housing maintenance.

Investments into a variety of housing types would be best supported in municipalities that encourage smart growth strategies and support development at density. Accommodating incoming households through an increase in only single-family development would not contribute to the goals of the NYS Housing Compact or necessarily provide the affordable housing units needed for those working in jobs that support additional population growth. Population growth at scale would create an increased demand for consumer goods and services and the need for additional workers within service/retail, education, administrative, consumer products, and other industries. Due to the variety of incomes generated by induced jobs, there would be additional demand for housing at a range of price points, including workforce and affordable housing.

Further, although Micron does not control the housing market and cannot specifically mitigate such effects, Micron will continue to work with agencies and local stakeholders to identify specific actionable measures to avoid or minimize the potential for this short-term significant adverse effect on the local housing market. As detailed in Chapter 4, there are already a number of planned projects in the study area that would increase housing supply within those communities that are predicted to experience induced growth from the Proposed Project and, therefore, may serve to reduce rent pressures within the local and regional study areas. Over time, the production of additional housing including affordable housing, would avoid the potential for long-term significant adverse effects due to rent increases.

3.16 ENVIRONMENTAL JUSTICE

This section presents an assessment of the Preferred Action and No Action Alternatives' potential to result in effects on disadvantaged communities (DACs) and minority and low-income communities in accordance with New York State laws, regulations, guidance and policies. Environmental justice is "the fair and meaningful treatment of all people, regardless of race, income, national origin or color, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies" (NYSDEC, n.d.-d).

As discussed in more detail in Appendix R-2, planning for the Preferred Action Alternative has included opportunities for public participation. A series of stakeholder focus groups were held to provide community members with information on key topics. The Proposed Project's public outreach process has also included meetings with the Onondaga Nation and other Tribal Nations. In addition, Appendix R-1 includes a detailed summary of race, ethnicity, and poverty characteristics for all census block groups within the environmental justice study area; [156] a detailed table of the study area's DACs and their burdens and vulnerabilities; and a list of references.

3.16.1 Legal and Regulatory Setting

Table 3.16-1 lists the state laws, regulations, orders, and guidance applicable to environmental justice. There are no current federal or local laws related to environmental justice that apply to the Proposed Project.

Table 3.16-1 Regulatory Setting

State Laws, Regulations, and Policies	Relevance
Climate Leadership and Community Protection Act (CLCPA) (ch. 106; L. 2019)	Requires state agencies to consider the effects of their actions on DACs and not disproportionately burden DACs.
NYS Environmental Justice Siting Law (ch. 840; L. 2022 and ch. 49; L. 2023)/ Section 8-0109(2)(k) of the New York State Environmental Conservation Law (ECL)	Requires SEQRA lead agencies to "consider whether an action may cause or increase a disproportionate pollution burden on a disadvantaged community (DAC) as part of the determination of significance for a proposed project and include an evaluation of whether the proposed action causes or increases any disproportionate pollution burden in a DAC where an environmental impact statement is required."
Proposed Amendments to 6 NYCRR Part 617, NYS Reg., Vol. XLVII, Issue 4, I.D. No. ENV-04-25-00005-P (January 29, 2025)[157]	In January 2025, NYSDEC proposed updates to the SEQRA Environmental Assessment Form (EAF) to incorporate requirements of the EJ Siting Law and include an assessment of

[156] The environmental justice study area includes the area within and beyond a 10-mile radius of the Proposed Project, in accordance with the Final SEQRA Scope of Work.

[157] While the proposed regulations have not yet been adopted, they are considered in this analysis (Table 3.16-1).

	potential impacts on DACs. NYSDEC's proposed SEQRA amendments require inclusion of "impacts of any proposed action on a disadvantaged community, including whether the action may cause or increase a disproportionate pollution burden on a disadvantaged community" in an EIS. NYSDEC's proposed updates to the SEQRA EAF to include an assessment of potential effects on DACs has been considered for this analysis.[158]
NYSDEC, Division of Environmental Permits (DEP) 24-1, Permitting and Disadvantaged Communities	Provides guidance for reviewing permit applications associated with sources and activities, in or likely to affect a disadvantaged community, that result in GHG, or co-pollutant emissions regulated. Defines a disproportionate pollution burden is a pollution burden within an affected disadvantaged community that is, or would be, significantly greater than that same burden in comparable non-disadvantaged communities, because of the proposed action.
NYSDEC Commissioner Policy 29 (CP- 29), Environmental Justice and Permitting	Provides guidance on how to address potential adverse impacts on minority and low-income communities through the NYSDEC environmental permit review process. The methodology set forth in CP-29 involves the following steps: (1) identifying potential adverse environmental effects and the area to be affected (i.e., establishing a study area); (2) determining whether potential adverse environmental effects are likely to affect a potential environmental justice area (i.e., whether low-income and/or minority populations are present in the study area); (3) identifying whether potential adverse environmental effects of the proposed action would disproportionately affect low-income and minority populations; (4) identify the potential for cumulative environmental burdens in the study area; and (5) seek public participation from the affected community.

[158] The proposed revised Full EAF identifies potential direct or indirect impacts that may affect a DAC, including: new noise sources or expansions/modifications of existing noise sources (i.e., noise from operational sources or construction activities); emissions of air pollutants including mobile emissions; wastewater discharges; generation of odors; light pollution; new or modified radiation sources; or new or modified sources of solid waste generation, management, or disposal. This list is not considered by NYSDEC to be exhaustive.

3.16.2 Affected Environment

The environmental justice study area is based on (1) the study areas that were identified for the various technical resource areas in Chapter 3, and (2) an expansive traffic study area that was presented in the Final SEQRA Scope of Work. The environmental justice study area, as described in the Final SEQRA Scope of Work, includes all census block groups that are within or intersect the initial traffic study area and the area that could be affected by the Connected Actions (see Figure 3.16-1). The study area was selected as the area with the greatest potential for adverse effects and informed the environmental justice outreach process. Effects from the Preferred Action Alternative's projected induced growth could be experienced beyond the study area and are discussed qualitatively under "Growth Inducing Effects," below.

Figure 3.16-1 Environmental Justice Study Area

Source: World Street Map (Esri, 2025b): Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Within this broad environmental justice study area, DACs were mapped using NYSDEC's Disadvantaged Communities Assessment Tool (DACAT), as shown in Figure 3.16-2. The DACAT is a screening tool developed by NYSDEC to help lead agencies understand existing burdens and vulnerabilities in disadvantaged communities as part of their assessment of disproportionality" (NYSDEC, 2024k). It compares three scores—Combined Score, Burden

Component Score, and Vulnerability Component Score—for each census tract against non-DAC comparison scenarios, which include statewide urban, statewide rural, and urban/rural for each of the ten regions in the state (the environmental justice study area is within the Central NY region).[159] The DACAT identifies census tracts with comparatively higher existing burdens or vulnerabilities, indicating an increased likelihood that a proposed action may have a moderate or large impact on the DAC. Conversely, it identifies census tracts with comparatively lower existing burdens or vulnerabilities, suggesting a decreased likelihood that a proposed action may have a moderate or large impact on the DAC.

This analysis also identifies minority or low-income communities following NYSDEC guidelines (see Figure 3.16-2).[3] Minority and low-income communities were identified using the latest census data (i.e., the 2019–2023 ACS 5-Year Estimates), as well through a review of NYSDEC's ArcGIS Webmap of Potential Environmental Justice Areas (PEJAs) as designated in the 2020 updates. Following NYSDEC's guidance, block groups meeting or exceeding the following thresholds were identified as minority or low-income communities:

1. At least 52.42 percent of the population in an urban area reported themselves to be members of minority groups (NYSDEC's CP-29 defines minority population as a population that is identified or recognized by the U.S. Census Bureau as Hispanic, African-American or Black, Asian and Pacific Islander or American Indian (i.e., Indigenous Nations populations)); or

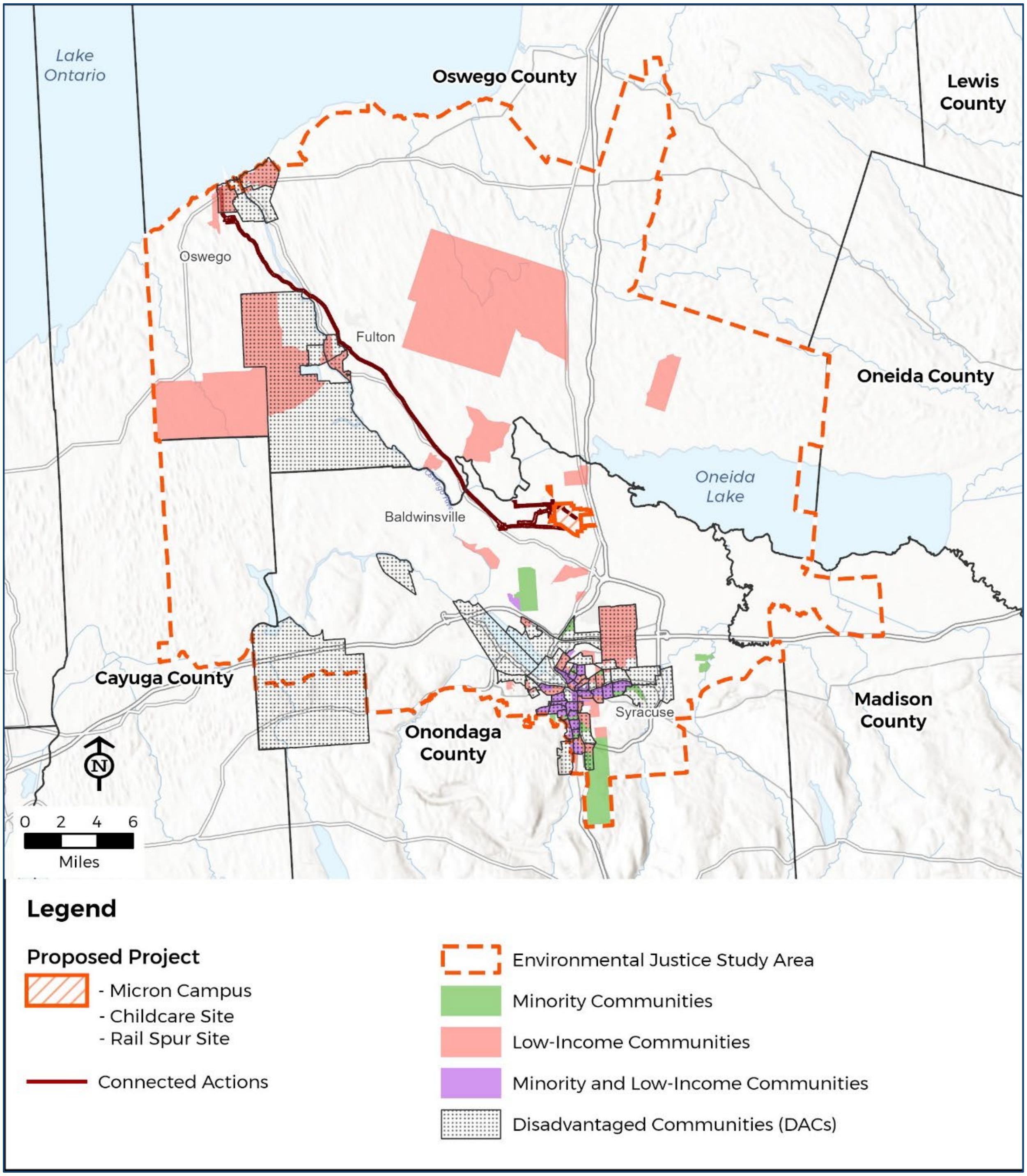
2. At least 26.28 percent of the population in a rural area reported themselves to be members of minority groups; or

3. At least 22.82 percent of the population in an urban or rural area had household incomes below the federal poverty level (NYSDEC, n.d.-f).

Figure 3.16-2 shows the locations of DACs and minority or low-income communities in the study area.

[159] The ten regional designations are based on NYS Regional Economic Development Council regions (NYSDEC, n.d.-e).

Figure 3.16-2 DACs and Minority or Low-Income Communities in Study Area



Sources: World Street Map (Esri, 2025b): Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Appendix R-1 contains the methodology and list of guidance that was utilized to identify DACs and minority or low-income communities and the methodology to evaluate potential impacts. The locations of the DACs and minority or low-income communities in the study area are discussed below.

3.16.2.1 Minority Communities in Study Area

Based on ACS data, the Town of Clay, where the majority of the Proposed Project would be located, is predominantly non-minority. Within the Town of Clay, two block groups were identified as minority communities (Census Tract 111.02 Block Group 1 and Census Tract 111.02 Block Group 3) near Onondaga Lake (see Appendix R-1, Table R-2). No minority communities were identified in the Town of Cicero, where a small portion of the Micron Campus is located.

Within the study area, additional minority communities are located in and around the City of Syracuse in Onondaga County—approximately 10 miles from the Proposed Project (see Figure 3.16-2). In addition, the Onondaga Nation is a minority population with a presence in the environmental justice study area.

3.16.2.2 Low-Income Communities in Study Area

The Towns of Clay and Cicero are identified as predominantly non-low income (approximately 9 percent of the population in each town lives below the federal poverty level). In addition, very few block groups in these towns meet the NYSDEC threshold for identifying low-income communities (see Appendix R-1, Table R-2). The nearest low-income community to the Proposed Project is located approximately one mile to the north in Brewerton in the Town of Cicero. Several additional low-income communities are located in the North Syracuse area of the Town of Clay and near Riverview Mobile Court.

Several low-income communities are located near the Connected Actions including Census Tract (CT) 209.01 Block Group (BG) 2; CT 211.01 BG 2, CT 211.02 BG 1, CT 214.01 BG 3, and CT 216.02 BG 2.

Low-income communities were also identified within the study area north of New York State Route 49 in Central Square and West Monroe, to the west along Oswego River near Phoenix, and along Lake Ontario in Oswego County. In addition, low-income communities were identified in the City of Syracuse, approximately 10 miles from the Proposed Project (see Figure 3.16-2).

3.16.2.3 Disadvantaged Communities

DACs are defined in New York's CLCPA as communities that bear burdens of negative public health effects, environmental pollution, impacts of climate change, and possess certain socioeconomic criteria, or comprise high-concentrations of low- and moderate- income households. The NYS Final DAC Map provides information on the burdens identified for each DAC. DACs may have relatively high burden and/or vulnerability scores. Burden scores are based on land use and historic discrimination (e.g., housing vacancy rate), potential climate change risk (e.g., driving time to urgent care), and potential pollution exposure (e.g., highway truck traffic). The indicators used to determine vulnerability scores include income (e.g., percent of population earning less than 80 percent area median income), race and ethnicity (e.g., percent Latino/a or Hispanic, Black or African American, Asian, or Indigenous), health outcomes and sensitivities (e.g., asthma emergency department visits); and housing mobility and communications (e.g., housing cost burdened).

DACs have been designated within the study area, which largely overlap with the identified minority and low-income communities discussed above (see Figure 3.16-2). Within the study area, DACs were identified primarily in the City of Syracuse, Village of Baldwinsville, City of Fulton, and City of Oswego. See Appendix R-1 for a detailed summary of the burdens and vulnerabilities for each DAC in the study area.

Because the closest DAC to the Proposed Project is five miles south in the North Syracuse area, the Proposed Project is not likely to disproportionately burden or otherwise impact a DAC and is therefore not subject to the requirements of policy DEP 24-1. Documentation of such analysis was submitted to the NYSDEC (see Section 3.7, Greenhouse Gas Emissions, Climate Change, and Climate Resiliency; Appendix J-2). Nonetheless, this Section 3.16 considers potential effects on DACs.

3.16.3 Environmental Consequences

3.16.3.1 No Action Alternative

Under the No Action Alternative, the WPCP would remain in its current condition pending future development proposals. The No Action Alternative would delay OCIDA's long-standing objective to bring high-tech facilities and high paying jobs to Onondaga County at the WPCP until such time as OCIDA identifies another suitable development proposal for the property. The Rail Spur and Childcare Sites would remain vacant properties. The existing utility properties would not undertake utility improvements or need to obtain easements for the Connected Actions.

In contrast, the No Action Alternative would not bring socioeconomic benefits described in Section 3.15 (Socioeconomic Conditions), including but not limited to increased employment opportunities, educational training opportunities and increased tax revenues for local municipalities. The CIF and job training initiatives, for example, would not occur and would not benefit low-income households. This would mean no beneficial effect on the labor force resulting in training the labor force in specialized construction trades that would provide a beneficial effect well beyond the Proposed Project's approximately 16-year construction period.

Therefore, the No Action Alternative would not result in any adverse effects on any DAC or minority or low-income community, but beneficial effects related to economic development policies would not occur.

3.16.3.2 Preferred Action Alternative

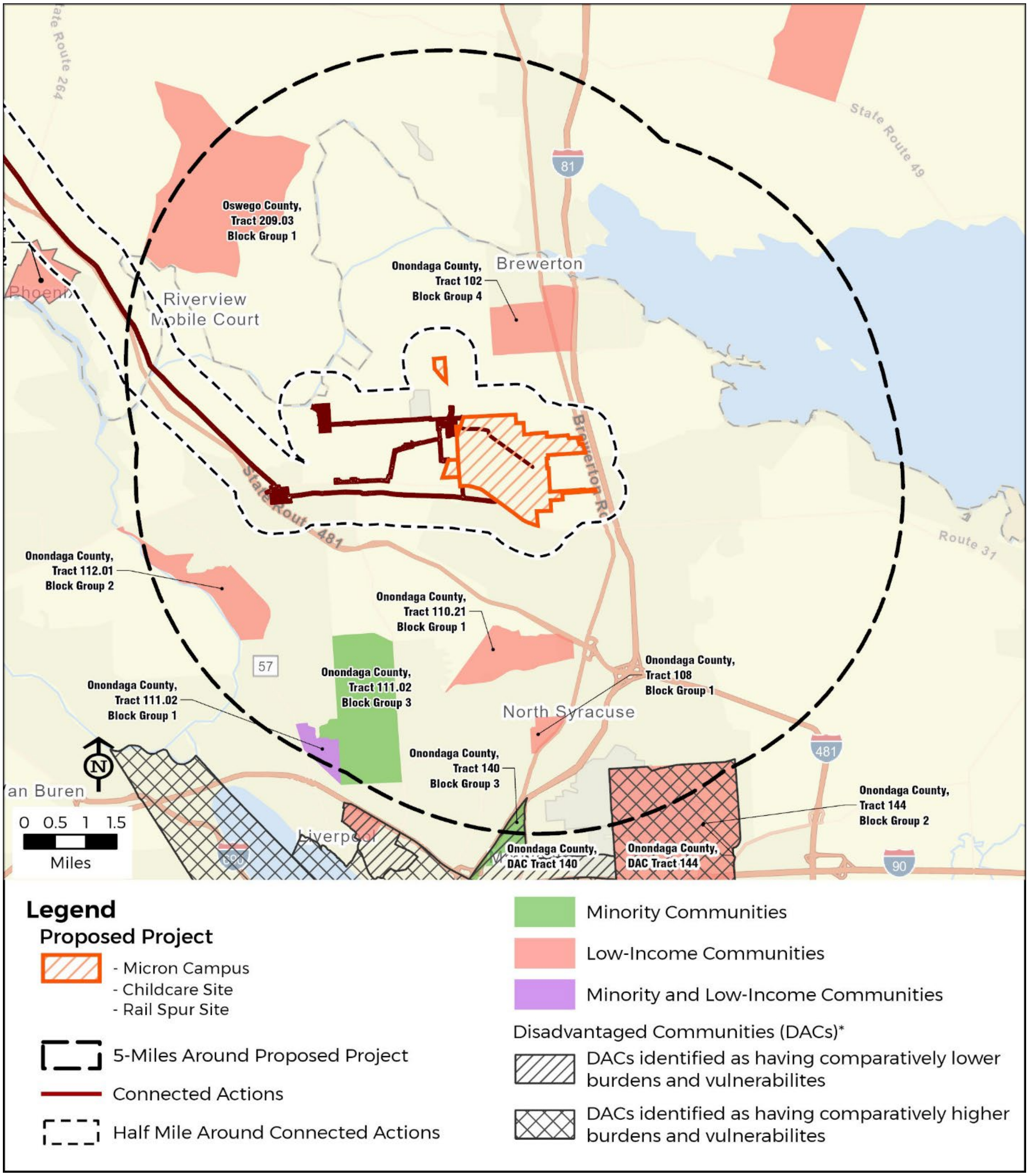
This analysis identifies potential effects on environmental justice communities, which includes DACs and minority or low-income communities, based on a review of the other technical sections in Chapter 3 of this EIS and determines whether the Preferred Action Alternative would disproportionately burden any DAC or minority or low-income community.

Based on a review of the other technical resource analyses included in Chapter 3 of this EIS, it can be reasonably concluded that many of the DACs and minority or low-income communities within the study area would be unaffected by the Preferred Action Alternative (aside from growth inducing effects, which are discussed qualitatively under "Growth Inducing Effects," below). Although an expansive study area was selected to be inclusive and to include study areas from other technical analysis, the potential adverse effects from construction and operation of the Preferred Action Alternative on DACs and minority or low-income communities are expected to be limited to within an approximately 5-mile radius around the Proposed Project sites, and a ½ mile of the Connected Actions. (While some adverse effects would occur beyond 5 miles of the Proposed Project in the Town of Cicero, no DACs or minority or low-income communities were identified in the Town of Cicero beyond 5 miles of the Proposed Project). The DACs and minority or low-income communities within these distances are shown in Figure 3.16-3, Figure 3.16-4, Figure 3.16-5.

Figure 3.16-3 shows the DACs and minority and low-income communities within 5 miles of the Proposed Project Sites, where potential adverse effects could occur. As shown in Figure 3.16-3, the nearest minority or low-income community to the Proposed Project sites is located about one mile to the north of the Micron Campus (Census Tract 102 Block Group 4, a low-income community). Within 5 miles of the Proposed Project are portions of two DACs, located along the southern edge of the affected area in North Syracuse: CT 140 (comparatively lower burdens and vulnerabilities) and CT 144 (comparatively higher burdens and vulnerabilities).

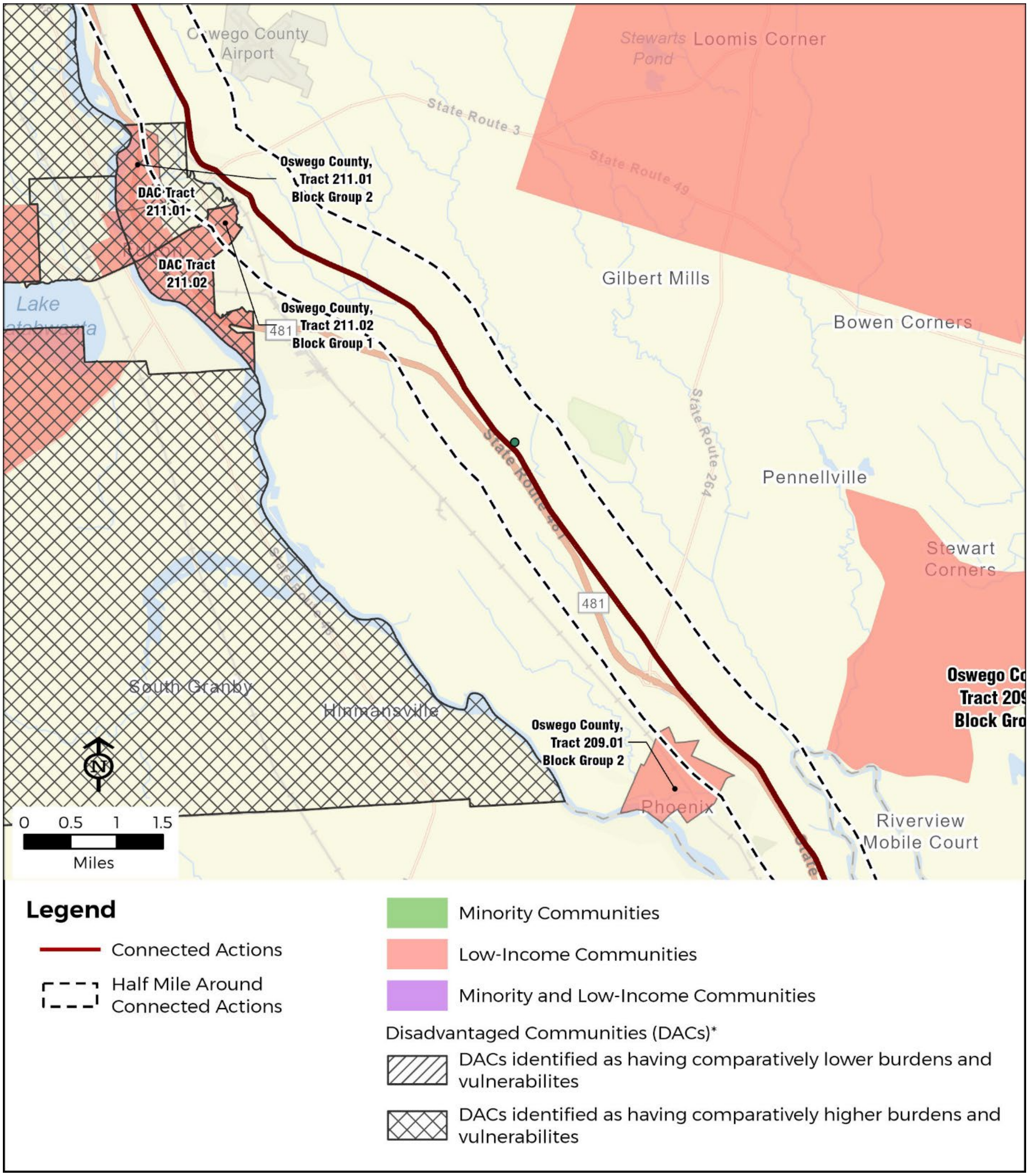
Figure 3.16-4 and Figure 3.16-5 depict DACs and minority or low-income communities within ½-mile of the Connected Actions. As shown, there are five low-income communities, and portions of six DACs within ½-mile of the Connected Actions (and only within a ½-mile of the proposed water supply pipeline and facility upgrades; there are no DACs or minority or low-income communities located within a ½ mile of the other Connected Actions). Three of the low-income communities are also DACs.

Figure 3.16-3 DACs and Minority or Low-Income Communities Near the Proposed Project and Adjacent Connected Actions



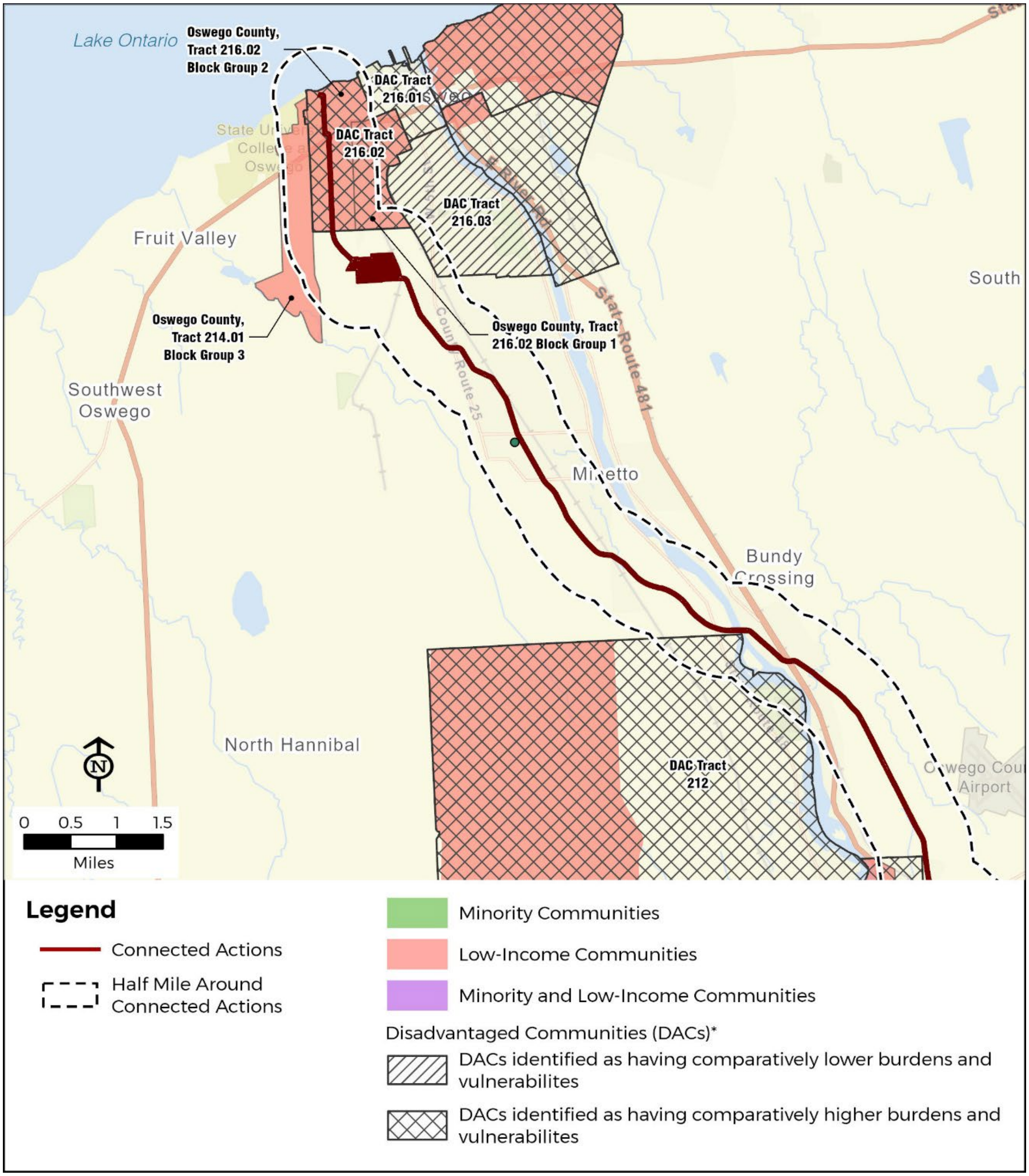
Sources: World Street Map (Esri, 2025b): Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Figure 3.16-4 DACs and Minority or Low-Income Communities Near the Connected Actions (Southern Section)



Sources: World Street Map (Esri, 2025b): Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Figure 3.16-5 DACs and Minority or Low-Income Communities Near the Connected Actions (Northern Section)



Sources: World Street Map (Esri, 2025b): Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Table 3.16-2 summarizes the data provided in Appendix R-1 and provides a list of the DACs within 5 miles of the Proposed Project and a ½ mile of the Connected Actions, along with their burdens and vulnerabilities at or above the 80th percentile compared to the rest of the tracts in the state.

Table 3.16-2 DAC Tracts within 5 Miles of Proposed Project and/or ½ Mile of Connected Actions

DAC Tract	Minority/ Low-Income BG No. in Study Area	DACAT Category[1]	DAC Burdens at or above 80th percentile[2]	DAC Vulnerabilities at or above 80th percentile[3]	Within 5-Miles of Proposed Project	Within ½ Mile of Connected Actions
140	3 (minority)	Lower	Housing vacancy rate; highway truck traffic	Percent w/o Bachelor's degree	X	
144	2 (low-income)	Higher	Housing vacancy rate; Industrial/manufacturing land use; Regulated Management Plan (chemical sites); remediation sites; highway truck traffic	Manufactured (mobile) homes; percent w/o health insurance; unemployment rate	X	
212	None	Higher	Regulated Management Plan (chemical sites); scrap metal processing; agricultural land use; driving time to urgent/critical care	COPD ED visits; heart attack (MI) hospitalization; percent with disabilities; energy poverty/cost burden; housing cost burden (rental costs); manufactured homes; percent below poverty level; percent w/o Bachelor's degree; unemployment		X
216.01	None	Higher	Regulated Management Plan (chemical sites); coastal flooding and storm risk	COPD ED visits; heart attack (MI) hospitalization; energy poverty/cost burden; percent below poverty level; percent less than 80% Area Median Income		X
216.02	1 (low-income)	Higher	Regulated Management Plan (chemical sites)	COPD ED visits; heart attack (MI) hospitalization; energy poverty/cost burden; housing cost burden (rental costs); percent below poverty level; unemployment rate; percent Native American or Indigenous		X
216.03	None	Lower	N/A	COPD ED visits; heart attack (MI) hospitalization		X
211.01	2 (low-income)	Higher	Housing vacancy rate; Regulated Management Plan	COPD ED visits; heart attack (MI) hospitalization; percent with disabilities;		X

DAC Tract	Minority/ Low-Income BG No. in Study Area	DACAT Category[1]	DAC Burdens at or above 80th percentile[2]	DAC Vulnerabilities at or above 80th percentile[3]	Within 5-Miles of Proposed Project	Within ½ Mile of Connected Actions
			(chemical sites); remediation sites	energy poverty/cost burden; percent below poverty level; percent less than 80% Area Median Income; percent single-parent households; percent without Bachelors degree		
211.02	2 (low-income)	Higher	Industrial/manufacturing land use; Regulated Management Plan (chemical sites); remediation sites	COPD ED visits; heart attack (MI) hospitalization; percent with disabilities; energy poverty/cost burden; percent below poverty level; percent less than 80% Area Median Income; percent without Bachelors degree; unemployment rate		X

Sources: New York State Climate Action Council (n.d.); Disadvantaged Community Assessment Tool (DACAT) (NYSDEC (n.d.-g))

Notes:

[1] The DACAT identifies DACs as having either 1) comparatively higher existing burdens or vulnerabilities and therefore an increased likelihood that a proposed action may have a moderate to large impact on the DAC or 2) having comparatively lower existing burdens or vulnerabilities and therefore a decreased likelihood that a proposed action may have a moderate or large impact on the DAC.

[2] The NYS Disadvantaged Communities Criteria Map identifies burdens for each DAC. Environmental burdens at or above the 80th percentile are higher compared with the rest of the CTs in the state. Burdens may include Regulated Management Plans (RMPs) for sites with regulated chemicals under the USEPA Risk Management Program, for example.

[3] The NYS Disadvantaged Communities Criteria Map identifies population vulnerabilities for each DAC, such as Chronic obstructive pulmonary disease (COPD) Emergency Department (ED) visits or heart attack/Myocardial infarction (MI) hospitalization, for example.

The Preferred Action Alternative's potential effects on DACs and minority or low-income communities from construction and operation of the Proposed Project and Connected Actions are discussed below. Potential effects from induced growth as a result of the Proposed Project are discussed under "Growth Inducing Effects."

Proposed Project

Specific Effects on DACs within 5 miles of Proposed Project

Within 5 miles of the Proposed Project, there are portions of two DACs in North Syracuse: CT 140 (comparatively lower burdens and vulnerabilities) and CT 144 (comparatively higher burdens and vulnerabilities). As shown in Table 3.16-2, according to the NYS DACs Criteria Map both of these tracts have the following burdens at or above the 80th percentile compared to the rest of the tracts in the state: housing vacancy rate and highway truck traffic.

While the Proposed Project would increase highway truck traffic in the affected area, CT 140 and CT 144 are approximately 2.5 miles and 1.5 miles, respectively, from the nearest impacted intersection (I-481 and I-81). Further, the Proposed Project's mobile source emissions would not exceed the NAAQS. Therefore, the Proposed Project would not cause or increase a disproportionate pollution burden from highway truck traffic within CT 140 and CT 144.

With respect to housing, the Proposed Project's indirect and induced growth is anticipated to stimulate new housing in the surrounding region in which this DAC is located. Therefore, the Proposed Project is not expected to cause or increase a disproportionate burden on these DACs related to traffic or housing vacancy.

CT 144 is also burdened by industrial/manufacturing land use; RMPs (chemical sites); and remediation sites. RMPs are regulated by USEPA and are required for sites that use hazardous materials to prevent accidental chemical spills. The Proposed Project would not cause or increase these types of burdens in this community, which is approximately 5 miles from the Micron Campus. Overall, Micron would be subject to Federal and State solid and hazardous waste management regulations, and would work with vendors to arrange for transportation, shipment, and disposal of waste at facilities authorized to receive industrial and other waste. Therefore, the Proposed Project is not expected to cause or increase a disproportionate pollution burden on CT 144.

Specific Effects on Minority and Low-income Communities within 5 miles of Proposed Project

Low income community closest to the Micron Campus (CT 102 BG 4)

Potential traffic effects could occur near the low-income community in Brewerton along I-81 (CT 102 BG 4), approximately one mile to the north of the Micron Campus and Sneller Road. This community is not already overburdened by traffic, air emissions, or noise and based on the air quality analysis, the Proposed Project would not result in a violation of the NAAQS. Therefore, there would not be a disproportionate burden on this community associated with traffic.

Potential significant adverse noise impacts would also occur close to the Proposed Project sites but outside this community. Views of the Proposed Project from this community would be negligible, due to the extensive vegetation and distance (a little over a mile) from the Micron Campus. Therefore, any adverse impacts related to traffic, air quality, noise, and visual resources would not result in a disproportionate pollution burden on this community.

The in-migration of workers and families to the Towns of Clay and Cicero and the five-county regional socioeconomic study area would increase the demand for housing, creating an increase in construction housing jobs and affecting property values and housing costs in this low-income community. This induced effect of the Proposed Project is discussed below in the "Growth Inducing Effects" section.

Other Minority and/or Low-Income Communities within 5 miles of Proposed Project

The other minority and/or low-income communities (i.e., block groups) within 5 miles of the Proposed Project sites (see Figure 3.16-3) would experience similar or lesser effects than that described above for the low-income community closest to the Micron Campus, in addition to the effects described above for all DACs and minority or low-income communities within 5 miles of the Proposed Project. For instance, the air emissions would be lesser the farther removed from the Micron Campus.

Onondaga Nation

The Onondaga Nation is identified as a minority population within the environmental justice study area. The Onondaga Nation provided comments related to the Proposed Project as part of the project's public scoping process. In particular, the Onondaga Nation requested protection of subsistence fishing rights within its traditional territory and around the country. The Onondaga Nation expressed concerns related to fish and water quality in Onondaga Lake, Lake Ontario, and the Oneida River in their scoping comment letter dated March 26, 2024. In addition, focus group attendees expressed concern over water quality in the Oneida River and Onondaga Lake (see Appendix R-2). As discussed in Sections 3.3 and 3.4, the Preferred Action Alternative would not result in significant adverse impacts related to water quality or aquatic life. Proposed mitigation measures for wetlands and surface water resources (e.g., Wetland Mitigation Plan, Stream Mitigation Plan, erosion and sediment control measures) and stormwater BMPs would minimize potential impacts related to water resources. Therefore, these concerns would not cause or increase a disproportionate pollution burden to the Onondaga Nation population.

Effects Common to All DACs and Minority or Low-Income Communities within 5 Miles of Proposed Project

This section discusses effects common to all DACs and minority or low-income communities within 5 miles of the Proposed Project, since many of the effects would be the same or similar across this distance. While most technical areas are addressed in this section, some have been addressed earlier in the discussion of effects that would be specific to individual DACs. Other effects (e.g., the Proposed Project's impacts on bats) are not addressed in this section as they are not relevant for the purposes of environmental justice analysis.

Land Use, Zoning, and Public Policy

Effects related to land use and zoning would be limited to the LODs or immediate proximity of the areas where the Proposed Project would be built. As there are no DACs or minority or low-income communities within these areas, there would be no disproportionate effects related to land use and zoning from the Proposed Project. The Proposed Project would be consistent with the Onondaga County Comprehensive Plan, the SMTC 2050 Long Range Transportation Plan 2020 Update, the Town of Clay Northern Land Use Study, the draft Town of Cicero Comprehensive Plan, and the New York Green CHIPS Program, fulfilling several of their goals relating to economic development and industrial use of the WPCP. The Preferred Action Alternative would not result in any significant adverse effects with respect to these policies, nor would it have any environmental justice impacts. It would likely result in beneficial effects by fulfilling economic development policy goals.

Geology

Effects related to geology would be limited to the LODs or immediate proximity of the areas where the Proposed Project would be built. As there are no DACs or minority or low-income communities within these areas, there would be no disproportionate effects related to geology from the Proposed Project.

Biological Resources

Although construction of the Proposed Project would result in impacts related to biological resources, the areas potentially impacts are not located in DACs or minority or low-income communities. Thus, the Proposed Project would not cause or increase a disproportionate pollution burden on DACs or minority or low-income communities related to biological resources.

Cultural Resources

Effects to cultural resources are being evaluated in this EIS in close coordination with the relevant Indigenous Nations in the area. If any identified archaeological sites are determined to be eligible for NRHP listing, and those sites cannot be avoided, a Phase 3 Data Recovery(ies) would be conducted to mitigate adverse impacts on archaeological properties within the archaeological site(s). Therefore, the Proposed Project would not cause or increase a disproportionate burden on DACs or minority or low-income communities with respect to cultural resources.

Solid Waste

While the Proposed Project may utilize existing landfills in and outside of the five-county region, the Proposed Project would follow all applicable regulations and would include waste minimization measures. All trucks loaded on the Micron Campus would exit the vicinity using only approved truck routes. These are the most appropriate routes and take into account: (a) limiting transport through residential areas and past sensitive sites; (b) prohibiting off-site queuing of trucks entering the facility; (c) limiting total distance to major highways; and (d) overall safety in transport. Therefore, the Proposed Project would not cause or increase a disproportionate pollution burden related to solid waste on DACs or minority or low-income communities within the study area.

Hazardous Waste

Potential effects from the Proposed Project related to hazardous waste are not expected to affect DACs or minority or low-income communities as the hazardous waste study area is the

Micron Campus, Childcare Site, and Rail Spur Site, which does not overlap with any DAC or minority or low-income community. Moreover, Micron would be subject to Federal and State solid and hazardous waste management regulations, and would work with vendors to arrange for transportation, shipment, and disposal of waste at facilities authorized to receive industrial and other waste. Therefore, the Proposed Project would not cause or increase a disproportionate pollution burden related to hazardous waste.

Water Resources

While construction of the Proposed Project would result in significant adverse impacts on wetlands and streams in the Youngs Creek and Shaver Creek watersheds as discussed in Section 3.3 (Water Resources) it would not result in significant adverse impacts related to water quality. Moreover, subsistence fishing is not known to occur in these locations. Proposed mitigation measures for wetlands and surface water resources (e.g., Wetland Mitigation Plan, Stream Mitigation Plan, erosion and sediment control measures) and stormwater BMPs would minimize potential impacts related to water resources. Therefore, the Proposed Project would not cause or increase a disproportionate pollution burden on DACs or minority or low-income communities related to water resources.

Community Facilities and Open Space

The majority of the Preferred Action Alternative elements that would affect community facilities, open space, and recreational resources are in the Town of Clay; however, a portion of the Micron Campus is located in the Town of Cicero. Therefore, community facilities, open space, and recreational areas for both the Town of Clay and the Town of Cicero are included in the study area for community facilities. Within the environmental justice study area, the Town of Clay includes 5 minority and/or low-income communities and no DACs; and the Town of Cicero includes 1 low-income community and no DACs.

Construction and operation of the Proposed Project may require occasional calls to local police and fire services and EMS serving the Towns of Clay and Cicero for incidents at the proposed Micron Campus, Rail Spur Site, or Childcare Site. Such calls would be anticipated to be relatively rare such that local police, fire and EMS services would be anticipated to have adequate capacity to address any incidents that arise in connection with Proposed Project construction and operations. See Section 3.14 (Community Facilities, Open Space, and Recreation).

Medical incidents would potentially be relatively more common than police and fire calls, given the nature of occupational hazards associated with large-scale construction project activities. However, Micron's ERT and local EMS would be anticipated to have adequate capacity to address most medical incidents that arise in connection with Proposed Project construction and operations. Accordingly, construction and operation of the Proposed Project would not be anticipated to materially increase the number of visits to hospitals and urgent care centers or other healthcare facilities located throughout Onondaga County. See Section 3.14 (Community Facilities, Open Space, and Recreation).

Overall, significant adverse impacts to police, fire, EMS, and healthcare facilities are not anticipated, and the Proposed Project is not expected to cause or increase a disproportionate pollution burden on DACs or minority or low-income communities related to the availability of police, fire or healthcare facilities services.

The Proposed Project's direct effects on open space would be located outside of any DAC or minority or low-income community. Therefore, the Proposed Project would not cause or increase a disproportionate burden on DACs or minority or low-income communities related to open space.

Greenhouse Gas

While the Proposed Project would result in a significant adverse effect related to GHG emissions, these types of emissions contribute to global climate change, which is a regional issue and not specific to individual communities. Moreover, the nearest DAC is nearly 5 miles away from the Proposed Project sites. Micron has committed to controlling the direct GHG emissions from operation of the four fabs at the Micron Campus to maximum extent practicable. Therefore, the Proposed Project would not cause or increase a disproportionate pollution burden related to GHG.

Air Quality

The primary source of air quality emissions associated with the Proposed Project is the Micron Campus, which represents over 90 percent of the emissions associated with the Preferred Action Alternative. The Micron Campus is not located within a DAC. The nearest DAC is approximately 5 miles away from the Micron Campus. As described in Section 3.6 (Air Quality), at all locations surrounding the Micron Campus, the Preferred Action Alternative would not result in an exceedance of the NAAQS. Furthermore, the dispersion modeling associated with the Preferred Action Alternative affirms that ambient pollutant concentrations are highest immediately adjacent to the Micron Campus and decrease with distance in all directions as one moves aways from the Micron Campus. This confirms that at all DACs in the study area, pollution burdens are not disproportionate.

Connected Actions

This section analyzes the potential to cause or increase a disproportionate pollution burden from the Connected Actions within the identified DACs and minority or low-income communities and is limited to the potential effects within a ½ mile. For DACs, the analysis considers the associated DAC burdens at or above the 80th percentile for that area. In general, the Connected Actions are expected to affect less resource areas compared with the Proposed Project. For example, the Connected Actions are expected to have negligible effects on DACs and minority or low-income communities related to traffic and air quality as the emissions and transportation activity rates associated with the Connected Actions are limited in nature and in most instances are associated with only transient construction activities.

Specific Effects on DACs within ½-mile of Connected Actions

The below will discuss specific effects on identified DACs within ½ mile of the Connected Actions, where potential adverse effects are expected to occur. While not related to the identified burdens, these DACs, all near or adjacent to OCWA's water supply improvements, could also experience other types of effects. Most of the proposed water supply line would require minimal removal of vegetation because it would be constructed within existing easements and rights-of-way that have been previously cleared; however, sporadic removal of vegetation through vegetated, forested lands may be needed, which would create new site lines through trees. This could result in minor changes to rural and residential views. Construction of the transmission facilities would be a short-term transient activity with a moving construction zone and therefore, is not expected to result in permanent or significant noise impact or annoyance to people living nearby. Construction noise and changes from exterior operational equipment associated with proposed interior upgrades to the existing raw water treatment plant would be subject to hours and noise level limits of the City of Oswego's noise ordinance, as described in Section 3.14.2. Upgrades to the LOWTP would occur approximately ½ mile south of the DACs near Lake Ontario and construction and operation activities are not expected to adversely affect these DACs with respect to traffic, air quality, and noise. Therefore, there would not be a disproportionate pollution burden on these nearby communities with respect to any of these technical areas.

Census Tracts 216.01, 216.02, and 216.03

Census Tracts 216.01, 216.02 and 216.03 are located near Lake Ontario in Oswego County where OCWA would be constructing a new raw water transmission main and upgrading its existing RWPS.

According to the NYS Disadvantaged Communities Criteria Map, Census Tracts 216.01 and 216.02 are burdened by the presence of sites with RMPs for the use of chemicals. These plans are regulated by EPA and are required for sites that use hazardous materials to prevent accidental chemical spills. Activities associated with OCWA's water supply upgrades would not cause or increase this type of burden in this community. Generation of solid or hazardous waste or the use of hazardous materials from construction and operation of the Connected Actions would be limited to negligible and would be subject to regulatory requirements (see Section 3.8, Solid Waste, Hazardous Waste, and Hazardous Materials). Estimates of hazardous and universal waste anticipated to be generated during construction of OCWA's improvements would likely be minimal given the scope of the improvements. It is anticipated that each of the utilities would develop and implement their own SMMP, which would include investigation and characterization measures to ascertain environmental conditions in areas where soil disturbance is anticipated, requirements for managing excavated soil, and contingency measures to manage areas of contamination.

CT 216.01 is also burdened with coastal flooding and storm risk. The construction and operations of OCWA's water supply improvements in this area are not expected to cause or increase coastal flooding or storm risk. Moreover, the Connected Actions would be constructed pursuant to applicable New York State and public utility climate policies and would be engineered to withstand effects of the changing climate.

While CT 216.03 has no burdens at or above the 80th percentile compared to the rest of the tracts in the state, the next highest burdens are RMPs and wastewater discharge (each is in the 78th percentile). In terms of effects related to RMPs, the effects would be the same as described above. This tract is located in the vicinity of the Oswego Wastewater Treatment Plant. OCWA's upgrades in this area would not increase wastewater discharge. Therefore, this Connected Action would not cause or increase a disproportionate pollution burden on this DAC.

CT 212

CT 212 is burdened by RMPs (chemical sites); scrap metal processing; agricultural land use; driving time to urgent/critical care. With respect to RMPs, as described above, the Connected Actions, specifically the construction and operation of OCWA's new water transmission line would not cause or increase this type of burden in this community. Generation of solid or hazardous waste or the use of hazardous materials from construction and operation of this Connected Action would be limited or negligible and would be subject to regulatory requirements.

This tract, located in the City of Fulton, New York also experiences significant driving time to urgent/critical care. Construction and operation of the new water transmission line would not affect driving times to urgent/critical care, as construction of the transmission facilities would be a short-term transient activity with a moving construction zone and limited construction-related traffic. See "Growth Inducing Effects" for a discussion of the Preferred Action Alternative's potential effects on healthcare facilities.

Therefore, the Preferred Action Alternative is not expected to cause or increase a disproportionate pollution burden on this DAC.

CT 211.01

CT 211.01 is burdened by housing vacancy rate; Regulated Management Plan (chemical sites); and remediation sites. In terms of effects related to RMPs, the effects would be the same as described above. The Preferred Action Alternative's indirect and induced growth is anticipated to stimulate new housing in the surrounding region in which this DAC is located.

Generation of solid or hazardous waste or the use of hazardous materials from construction and operation of the Connected Actions would be limited to negligible and would be subject to regulatory requirements. OCWA would develop and implement their own SMMPs for construction of the Connected Actions and would ensure management of any hazardous materials in accordance with their respective procedures.

Therefore, the Preferred Action Alternative is not expected to cause or increase a disproportionate pollution burden on this DAC.

CT 211.02

CT 211.02 is burdened by industrial/manufacturing land use; RMPs (chemical sites); and remediation sites. With respect to the industrial/manufacturing land use burden, construction of the proposed Connected Actions would occur primarily at existing utility properties (e.g., OCWA's LOWTP) and in existing easement areas and rights-of-way; as such, there would not be adverse land use effects.

In terms of effects related to RMPs, the effects would be the same as described above. Generation of solid or hazardous waste or the use of hazardous materials from construction and operation of the Connected Actions would be limited to negligible and would be subject to regulatory requirements. OCWA would develop and implement their own SMMPs for construction of the Connected Actions and would ensure management of any hazardous materials in accordance with their respective procedures. Therefore, there would not be a disproportionate pollution burden on this DAC as a result of the Connected Actions.

Effects on Other Minority and Low-Income Communities within ½ mile of Connected Actions

In addition to the DACs, the area within a ½ mile of the Connected Actions includes two low-income block groups that are not DACs. These block groups would experience similar effects as the DACs in the Connected Actions Affected Area—three of which are also low-income—in addition to the effects described above for all DACs and low-income communities in the ½-mile area. Thus, there would not be a disproportionate pollution burden on these low-income communities as a result of the Connected Actions.

Effects Common to All DACs and Minority or Low-Income Communities within ½ mile of Connected Actions

Land Use, Zoning, and Public Policy

Effects related to land use and zoning would be limited to the LODs or immediate proximity of the areas where the Connected Actions would be built. As these effects would be minimal, it is not expected that they would be significantly greater in DACs or minority or low-income communities; therefore, the Connected Actions would not cause or increase a disproportionate burden related to land use and zoning. The Connected Actions would comply with zoning regulations and the terms and conditions of any necessary local approvals, would be consistent with relevant public policies, and would fulfill several public policy goals relating to economic development and industrial use of the WPCP and would likely result in beneficial effects by fulfilling economic development policy goals.

Geology

Effects related to geology would be limited to the LODs or immediate proximity of the areas where the Connected Actions would be built. As these effects would be minimal, it is not expected that they would be significantly greater in DACs or minority or low-income communities; therefore, the Connected Actions would not cause or increase a disproportionate pollution burden related to geology.

Cultural Resources

If any identified archaeological sites are determined to be eligible for NRHP listing, and those sites cannot be avoided, a Phase 3 Data Recovery(ies) would be conducted to mitigate adverse impacts on archaeological properties within the archaeological site(s). If any historic structures are determined to be eligible for listing in the NRHP, then mitigation will be required to resolve adverse impacts. Therefore, the Connected Actions would not cause or increase a disproportionate pollution burden related to cultural resources.

Solid and Hazardous Waste

Generation of solid or hazardous waste or the use of hazardous materials from construction and operation of the Connected Actions would be limited or negligible and would be subject to regulatory requirements. Therefore, the Connected Actions would not cause or increase a disproportionate pollution burden related to solid or hazardous waste.

Water Resources

Construction of the Connected Actions would not result in significant impacts on wetlands and rivers and streams in the Youngs Creek and Shaver Creek watersheds. Subsistence fishing is not known to occur in these locations. Moreover, most of the Connected Actions are located outside of DACs and minority or low-income communities, with the exception of the proposed new OCWA water supply transmission line and facility upgrades. Proposed mitigation measures for wetlands and surface water resources (e.g., Wetland Mitigation Plan, Stream Mitigation Plan, erosion and sediment control measures) and stormwater BMPs would minimize potential impacts related to water resources. Therefore, the Connected Actions would not cause or increase a disproportionate pollution burden related to water resources.

Community Facilities and Open Space

The Connected Actions would not directly displace community facilities (not including open space), would not introduce new uses in the areas where they would be located, would result in an almost nominal increase in employees over the long-term operation, and the improvements would not increase demand on public services. The direct effects on the Snowmobile Trail would not be greater on DACs or minority or low-income communities compared to non-environmental justice communities. While all of the DACs within ½ mile of the Connected Actions experience healthcare-related vulnerabilities (i.e., COPD ED visits and heart attack hospitalization), construction and operation of the new water transmission line would not affect driving times to urgent/critical care, as construction of the transmission facilities would be a short-term transient activity with a moving construction zone and limited construction-related traffic. See "Induced Growth," below for a discussion of the Preferred Action Alternative's potential effects on healthcare facilities. Therefore, the Connected Actions are not expected to cause or increase a disproportionate burden related to community facilities or open space.

Growth Inducing Effects

Minority or low-income communities and DACs in the study area would experience growth inducing effects. Growth inducing effects would affect a five-county region, which encompasses the environmental justice study area.

Low-income households are expected to experience benefits from the Proposed Project and the induced growth associated with the Preferred Action Alternative. The CIF and job training initiatives, for example, will benefit low-income households. The job training initiatives are a significant beneficial impact resulting from the Preferred Action Alternative, training the labor force in specialized construction trades that would provide a beneficial effect on the labor force beyond the Proposed Project's approximately 16-year construction period. These specialized training programs and the presence of these skills in the labor force provide long-term alternative pathways to higher wage employment workers employed in the trades, benefitting future age cohorts through apprenticeship.

With the Preferred Action Alternative, some low-income households in the Towns of Clay and Cicero could face development pressure potentially leading to indirect displacement from increased rents and property values, such as in CT 102 BG 4. The property market should be expected to react to the new demand within approximately four years. In the interim, the impact could be mitigated by the identification of federal, state and local initiatives to support affordable housing within the local and regional study areas. Further, although Micron does not control the housing market and cannot specifically mitigate such effects, Micron will continue to work with agencies and local stakeholders to identify specific actionable measures to avoid or minimize the potential for this short-term significant adverse effect on the local housing market. As detailed in Chapter 4 (Cumulative Effects), there are already a number of planned projects in the study area that would increase housing supply within those communities that are predicted to experience induced growth from the Proposed Project and, therefore, may serve to reduce rent pressures within the local and regional study areas. Over time, the production of additional housing including affordable housing, would avoid the potential for long-term significant adverse effects due to rent increases; see Section 3.15 (Socioeconomic Conditions) for more information. There would also be offsetting benefits to the study area's low-income communities, as discussed above and below under "Summary of Project Benefits." Therefore, the adverse effects related to indirect residential displacement from the Preferred Action Alternative's induced growth are not expected to result in a disproportionate pollution burden on DACs or minority or low-income communities.

Although, some low-income households could face rent pressures attributable to the Proposed Project's induced growth in markets beyond the Towns of Clay and Cicero (see Section 3.15, Socioeconomic Conditions), the projected growth within regional communities is more dispersed, and in larger part attributable to non-Micron induced growth that would not be so immediate, allowing time for regional markets to respond to the increased demand through new housing production. Areas which are highly desirable to the incoming populations may see larger rent and home price increases; different communities may experience these increases at different temporal scales, although the property market should be expected to react to the new demand within approximately four years.

While the introduction of additional households may create short-term challenges in local and regional housing markets, there is the potential for long-term benefits. The increased housing demand would lead to investment in neighborhoods where deferred maintenance and lack of housing production are present, including in the City of Syracuse, where housing conditions have been deteriorating for some time. Additional demand for housing leading to an increase in rent may create a market environment where the existing housing stock can be upgraded and maintained at a higher standard. Higher demand can be expected to spur the development of new housing throughout the region, including housing types that have historically been underdeveloped in the region. For example, new multi-family developments near public transportation could benefit in-migrating families and existing residents seeking to downsize and/or relocate closer to community centers and transit. Therefore, there would not be a disproportionate pollution burden on DACs or minority or low-income communities from these effects.

Induced growth would potentially require some police services in the five-county region to expand their capacity over time and shift services and patrols due to changes in population patterns. In general, because police services are funded by taxes, the increased tax base associated with induced population growth would likely help to fund the needs of police services to expand over time to keep pace with that growth. Induced growth would also likely result in the need for additional fire service capacity over time. In general, most of the fire services in the five-county region are volunteer-based, but a few services, such as the Syracuse Fire Department, are paid services. Because paid fire services are funded by taxes, the increased tax base associated with induced population growth would likely help to fund the needs of those services to expand over time to keep pace with that growth. Some local volunteer fire departments, including Clay Fire and the combined fire services in the Town of Clay, may consider adapting their current all-volunteer models to include paid personnel, whether through fully paid departments, paid fire chiefs, or a mix of volunteer and paid firefighters.

While there are a few DACs and minority or low-income communities in the Town of Clay that would experience these effects, the effects would not be significantly greater in these communities compared with non-environmental justice communities in the town. Moreover, to mitigate these effects, Micron would commit to pay for and support ongoing Micron-related training efforts with Clay Fire and other local fire departments. Similarly, Micron would work with Clay Fire to determine any future need for the development of a full-time professional fire service. The determination of future needs planning could be completed through a feasibility study or similar alternative method.

Induced growth would potentially place added demands on healthcare facilities in the five-county region over time. The proposed Childcare Site healthcare center is intended in part to help reduce potential demands on area healthcare facilities by serving as an initial resource to accommodate the healthcare needs of Micron employees and their families. Induced growth would be expected to put greater demand on the regional healthcare facilities, which include medically underserved areas (MUAs), a shortage of primary care physicians, dentists, and mental health professionals serving low-income and Medicaid-eligible populations, and long wait times and overcrowding at the region's only Level 1 Trauma Center (Upstate University Hospital).

Nevertheless, the induced growth effects would occur gradually over the 16-year construction period, would bring new healthcare workers to the region to support the growing population, and would likely generate additional economic benefits and tax revenue that would support planned expansions of healthcare facilities in Syracuse and other longer-term healthcare planning initiatives in the region. Independent of the Proposed Project, New York State has allocated $450 million in funding for Upstate University Hospital to provide upgrades to the facility's burn unit and operating rooms and expand the hospital's emergency room, by increasing the number of emergency beds from 35 to 120 to better serve the area. With increased economic benefits, tax revenue, the expanded worker pool, and the planned Upstate University Hospital expansion, the Proposed Project would not be anticipated to result in significant adverse growth inducing effects on the regional healthcare facilities, and effects on healthcare facilities from the Preferred Action Alternative's induced growth are not expected to result in a disproportionate pollution burden on DACs or minority or low-income communities.

Induced growth anticipated from the Proposed Project could have potential significant adverse effects on historic and archaeological resources if there are not appropriate measures in place at local, state and federal levels. As the locations of specific induced growth projects within the five-county region are unknown, determinations of whether DACs or minority or low-income communities would be disproportionately affected would be speculative. Most induced growth projects would require local land use approvals or other approvals triggering SEQRA review and, therefore mitigation for any potential significant adverse impacts identified would be considered or required in connection with such future reviews.

There could be potential significant adverse impacts to wetlands as a result of induced growth should it occur in areas with wetlands present. Any loss of jurisdictional wetlands or surface water features would need to be approved by the regulatory agency, after a finding that such loss could not be avoided or further minimized. However, as these impacts are not expected to be greater in DACs or minority or low-income communities compared to non-environmental justice communities there would not be a disproportionate pollution burden.

Future conditions with the Preferred Action Alternative (inclusive of induced growth) could result in significant adverse traffic effects requiring mitigation. Overall, while there would be some significant adverse effects related to induced growth, these would be mitigated with recommended transportation improvements and would therefore not cause or increase a disproportionate pollution burden on DACs or minority or low-income communities.

In sum, the Preferred Action Alternative is not expected to cause or increase a disproportionate pollution burden on any of the DACs or minority or low-income communities and no environmental justice concerns are expected with the construction and operation of the Proposed Project and Connected Actions.

3.16.3.3 Summary

Although the environmental justice study area is expansive, encompassing a greater than 10-miles radius from the Proposed Project and Connected Action in some areas, the potential adverse effects from construction and operation of the Preferred Action Alternative on DACs and minority or low-income communities are expected to be limited to within an approximately 5-mile radius around the Proposed Project sites, and a ½ mile of the Connected Actions. A total of eight (8) DACs are located within these areas. When analyzing the associated DAC burdens at or above the 80th percentile, the Preferred Action Alternative would not cause or increase a disproportionate burden from construction or operation of the Proposed Project or Connected Actions. Similarly, in the low-income and minority communities identified within the study area, the Preferred Action Alternative would not cause or increase a disproportionate burden within those communities, except a potential temporary adverse impact on housing and rent pricing. Instead, the Preferred Action Alternative would produce beneficial effects for the local and regional communities, including identified DACs and minority and low-income communities, by generating thousands of new jobs both on- and off-site through business-to-business supply chain services, stimulating local and regional development through induced residential and worker spending, generating additional tax revenues and, over the 20-year term of the Green CHIPS CIF, by investing $500 million in local and regional initiatives that advance identified community needs.

Accordingly, the construction and operation of the Preferred Action Alternative would not cause or increase a disproportionate burden on DACs or minority or low-income communities located within the study area.

3.16.4 BMPs and Mitigation Measures

The Preferred Action Alterative includes numerous project design elements and BMPs that avoid or minimize potential environmental effects (see, generally, Chapter 3). In addition, for certain resource areas, mitigation measures have been proposed to further reduce potential environmental effects (see, e.g., Section 3.14 (Community Facilities, Open Space, and Recreation), Section 3.3 (Water Resources), Section 3.12 (Noise and Vibration), and Section 3.11 (Transportation and Traffic). With these avoidance, minimization and mitigation measures, the Preferred Action Alternative would not cause or increase a disproportionate pollution burden on DACs or minority or low-income communities. Therefore, no additional mitigation measures are proposed.

3.17 SUMMARY OF EFFECTS

Table 3.17-1 below summarizes the reasonably foreseeable effects of the No Action Alternative and the Preferred Action Alternative on the resource areas analyzed in Chapter 3. A significant effect is not a significant adverse effect unless expressly stated as adverse.

Table 3.17-1 Summary of Effects

Resource Area	No Action Alternative	Preferred Action Alternative	Mitigation
Land Use, Zoning, and Public Policy	No Significant Effect	Significant Effect on Land Use; No Significant Effect on Zoning or Public Policy	None Required
Geology, Soils, and Topography	No Significant Effect	No Significant Effect	None Required
Water Resources	No Significant Effect	Significant Adverse Effect on Wetlands and Surface Water; No Significant Effect on Other Water Resources	Yes (see Section 3.3.5)
Biological Resources	No Significant Effect	Significant Adverse Effect on Ecological Communities and Specified Special Status Species; No Significant Effect on Other Biological Resources	Yes (see Section 3.4.5.2)
Historic and Cultural Resources	No Significant Effect	Pending Completion of Section 106 Process	(See Section 3.5.5)
Air Quality	No Significant Effect	No Significant Effect	None Required
Greenhouse Gas Emissions, Climate Change, and Climate Resiliency	No Significant Effect	Significant Adverse Effect on GHG Emissions and Climate Change; No Significant Effect on Climate Resiliency	Yes (see Section 3.7.6)
Solid Waste, Hazardous Waste, and Hazardous Materials	No Significant Effect	No Significant Effect	None Required
Human Health and Safety	No Significant Effect	No Significant Effect	None Required
Utilities and Supporting Infrastructure	Significant Effect on Electricity Demand; No Significant Effect on Other Utilities	Significant Effect on Electricity Demand; No Significant Effect on Other Utilities	None Required
Transportation and Traffic	Significant Adverse Effect	Significant Adverse Effect	Yes (see Section 3.11.5)
Noise and Vibration	Significant Adverse Noise Effect; No Significant Vibration Effect	Significant Adverse Noise Effect; No Significant Vibration Effect	Yes (see Section 3.12.6)

Resource Area	No Action Alternative	Preferred Action Alternative	Mitigation
Visual Effects and Community Character	No Significant Effect	Significant Visual Effect and Effect on Community Character within Close Distance of Micron Campus; No Significant Aesthetic Impacts on Designated Aesthetic Resources	None Required
Community Facilities, Open Space, and Recreation	No Significant Effect	Significant Adverse Growth Inducing Effect on Volunteer Fire Services; No Significant Effect on Other Community Facilities, Open Space, or Recreation	Yes (see Section 3.14.4)
Socioeconomic Conditions	No Significant Effect	Short-term Potential Significant Adverse Effect on Housing; Significant Beneficial Effects	Yes (see Section 3.15.4)
Environmental Justice	No Significant Effect	No Significant Effect	None Required

4.0 CUMULATIVE EFFECTS

NEPA requires CPO to consider the reasonably foreseeable environmental effects of the alternatives analyzed in this EIS (*see* 42 U.S.C. § 4332(2)(C)). This includes the requirement to analyze the direct and reasonably foreseeable indirect effects of the Proposed Project and Connected Actions. NEPA does not require CPO to analyze cumulative effects, nor does NEPA require CPO to analyze environmental effects from other projects separate in time or place from the Proposed Project or Connected Actions.[160] CPO retains discretion to consider the cumulative effects analysis in Chapter 4 as part of its decision-making process under NEPA.

In contrast, SEQRA requires the consideration of the cumulative effects of an action, to the degree they are determined to be relevant and significant to an action. Cumulative effects must be assessed when actions are proposed, or can be foreseen as likely, to take place simultaneously or sequentially in such a way that the combined impacts may be significant.

4.1 DEFINITION OF CUMULATIVE EFFECTS

Under SEQRA, cumulative effects occur when multiple actions affect the same resource(s) or when the incremental effects of an action add to the effects caused by other past, present, and reasonably foreseeable future actions. Under New York State law, a cumulative effects analysis is required when: (1) the proposed action and another action or actions are clearly related; (2) the proposed action and another action or actions are proposed within a designated protected resource area for which an adopted management plan exists; or (3) it can be demonstrated that the proposed action and one or more other actions are likely to cause specific effects on the same specific resource.

In other words, cumulative effects are the collective result of the incremental effects of a proposed action that, when added to the effects of other present and reasonably foreseeable future actions, would affect the same resources, regardless of what agency or person undertakes those actions. Cumulative effects can result from actions with individually minor but collectively significant effects taking place over a period of time. As with the analysis of direct and indirect effects in Chapter 3, the analysis of cumulative effects is limited to consideration of reasonably foreseeable effects, not speculative ones.

4.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

Under the Preferred Action Alternative, most of the environmental effects of the Proposed Project and Connected Actions would generally occur within the vicinity of the Micron Campus, Rail Spur Site, or Childcare Site, or within or adjacent to the Connected Action LODs. However, cumulative effects may result from the incremental effects of the Proposed Project and Connected Actions when added to the effects of the other present and reasonably foreseeable actions in the

[160] See *Seven County Infrastructure Coalition v. Eagle County*, 605 U. S. ____ 1, 11 (2025).

local or regional area listed in Table 4.2-1.[161,162]

The analysis of the growth inducing effects of the Proposed Project and Connected Actions on the resource areas discussed in Chapter 3 is different from the analysis of cumulative effects, but the two analyses overlap. Growth inducing effects are a type of indirect effects that are caused (induced) by the Proposed Project and Connected Actions (for example, the Proposed Project inducing a semiconductor supply chain company to locate in close proximity to the Micron Campus), whereas cumulative effects result from the collective effects of various actions, even if one action does not cause or induce another (for example, the combined effects on electricity demand in Central New York from the Proposed Project and other development projects that are already planned or that will occur regardless of whether the Proposed Project is built).

The scope of the cumulative effects analysis is both inclusive of and broader than the scope of the growth inducing effects analysis. Some of the growth inducing effects discussed in Chapter 3 are relevant to the consideration of cumulative effects. To avoid repetition, this chapter discusses the previously analyzed growth inducing effects on a resource area where relevant, but focuses primarily on the collective effects of the Proposed Project and Connected Actions when added to the effects of the other actions listed in Table 4.2-1.

Figure 4.2-1 and Figure 4.2-2, and Table 4.2-1, identify all of the other ongoing and reasonably foreseeable future actions within the local and regional areas that were evaluated to determine if they could have a cumulative effect on at least one resource that also would be affected by implementation of the Preferred Action Alternative. Public documents prepared by Federal, State, and local government agencies, and comments received during scoping for the Draft EIS were the primary sources of information used to identify the actions identified in the Table 4.2-1. Additional projects were identified based on proximity to the Proposed Project and Connected Actions as well as the project type and likelihood to affect the same resources as the Proposed Project and Connected Actions.

Table 4.2-1 includes a row for each ongoing and reasonably foreseeable future action identified, a description of the action, its geographic proximity to the Micron Campus and its planned timing vis-à-vis the Proposed Project. Using this information, each project was screened to determine which resource or resources would be mutually affected and identifies the corresponding number for those reasonably foreseeable future actions as they appear in Figure 4.2-1 and Figure 4.2-2. All of the ongoing and reasonably foreseeable future actions proposed for inclusion in the cumulative effects analysis were included in the figures; none were eliminated from consideration.

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[161] The EIS relies on the analysis of current environmental conditions within the affected environment (environmental baseline) sections of the resource areas discussed in Chapter 3 as a proxy for the effects of past actions. Existing conditions reflect the aggregate effects of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

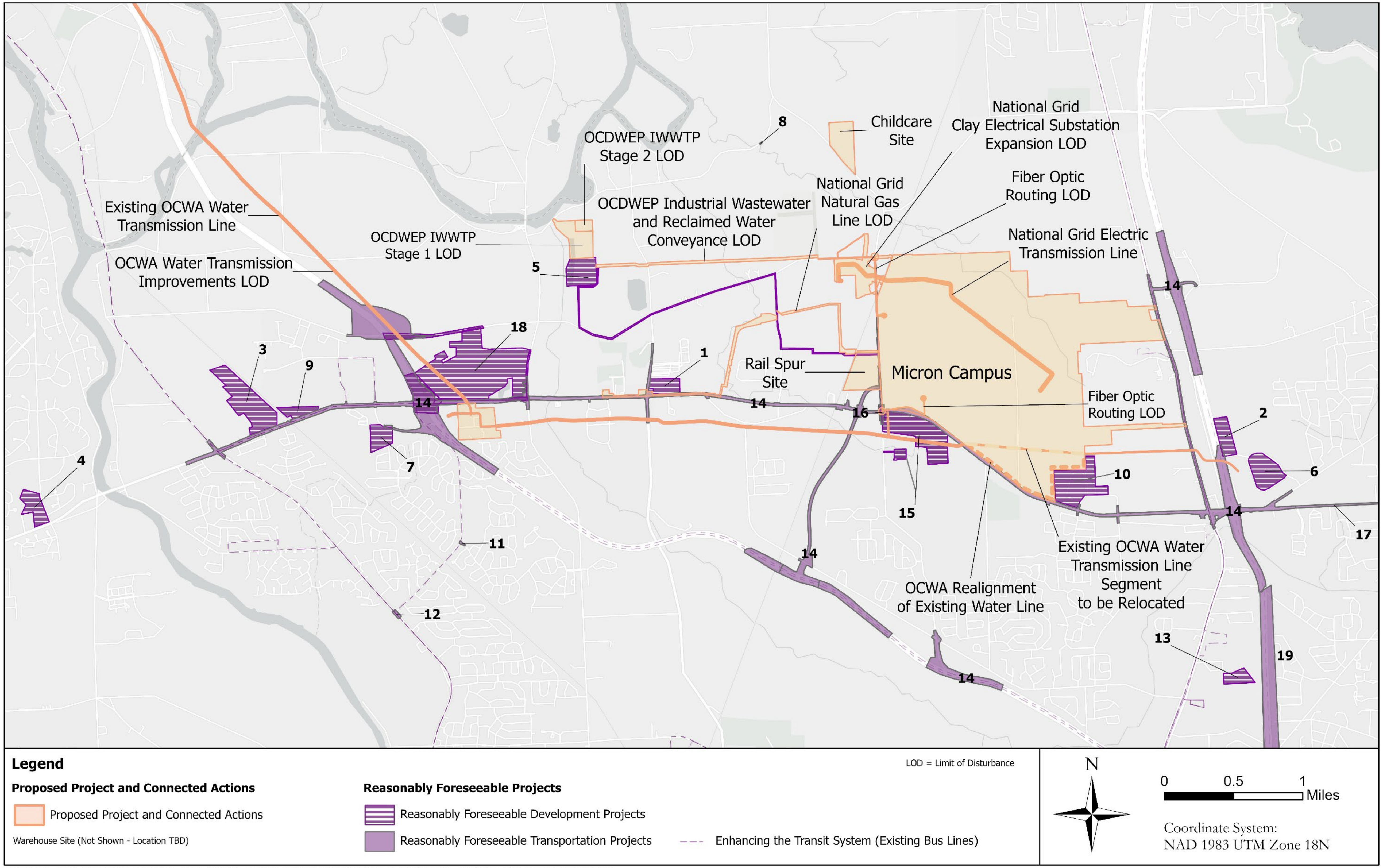
[162] As noted in Section 4.1, SEQRA requires an analysis of the cumulative effects of the proposed action and other actions on the same resource. Because the No Action Alternative is not a proposed action, Chapter 4 does not analyze the cumulative effects of the No Action Alternative. However, as noted in the summary of effects presented in Section 3.17 (Summary of Effects), there would still be significant effects under the No Action Alternative on electricity demand, transportation and traffic, and noise.

Figure 4.2-1 identifies ongoing and reasonably foreseeable actions that potentially have cumulative effects in the immediate vicinity of the Proposed Project, such as local traffic effects, and effects on soils, surface water, species, and local drinking water and wastewater resources. Figure 4.2-2. includes ongoing and reasonably foreseeable future actions throughout the five-county region potentially affected by the Proposed Project's induced growth, that could affect the same resources as the Preferred Action Alternative. These actions are most likely to affect the same or similar land use, socioeconomic, transportation, and regional electric and gas utility resources as the Preferred Action Alternative.

Regardless of the resource impacted, none of the ongoing or future projects with effects that are cumulative with the Preferred Action Alternative would meaningfully alter or amplify the effects of the Preferred Action Alternative, because the Proposed Project and Connected Actions are by far the most significant drivers of the environmental effects identified in this EIS. None of the other ongoing or future projects identified in the figures, either individually or cumulatively, would transform an otherwise insignificant effect of the Preferred Action Alternative into a significant effect. Nor would any of the other projects, individually or cumulatively, meaningfully exacerbate any significant effect of the Preferred Action Alternative.

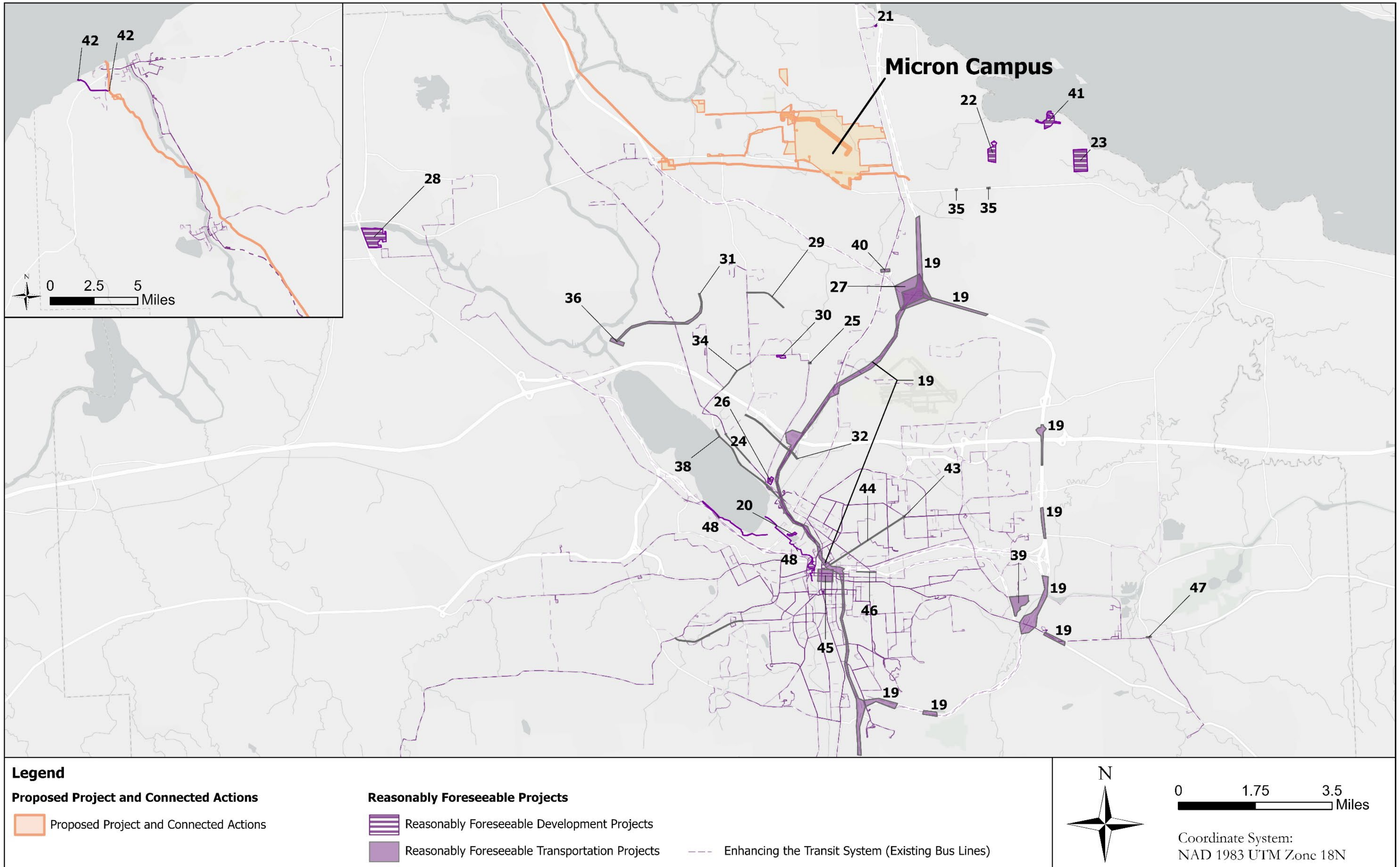
Like the Environmental Effects analysis in Chapter 3, the Cumulative Effects analysis in this chapter is organized according to each resource affected. The geographic scope of effects for each resource is the same as that used for the corresponding resource in Chapter 3. The timeframe for the cumulative effects analysis corresponds to the reasonably foreseeable effects of the Proposed Project over time. As explained in Chapter 2 and throughout this EIS, the Proposed Project would be constructed over a 16-year period, would become operational in stages over the next 20 years, and remain operational thereafter into the foreseeable future.

Figure 4.2-1 Present and Reasonably Foreseeable Actions - Proposed Project Local Area



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

Figure 4.2-2 Present and Reasonably Foreseeable Actions - Regional



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

Table 4.2-1 Present and Reasonably Foreseeable Actions[163]

Cumulative ID	Area	Action	Description	Timing	Distance from Micron Campus (mi)	Resources Identified for Cumulative Effect Assessment
1	Local	Clay Marketplace Planned Development District	This proposed mixed-use “lifestyle center” would feature three-story apartment buildings with supporting commercial units, including 96 apartments, a 14,900 sq. ft. pharmacy with drive-thru, 3,100 sq. ft. general office, 3,100 SF medical office, 3,000 SF fast-casual restaurant, and 6,000 SF general retail unit. The project would be located on the NE corner of Henry Clay and Rte. 31.	Currently under construction, anticipated completion date in 2025.	2.3	Geology, Soils, and Topography Biological Resources Utilities and Infrastructure Community Facilities and Open Space Socioeconomics Transportation Waste
2	Local	Clinton’s Ditch Co-op Co. (Pepsi)	This project is a 193,000 SF expansion of the existing Pepsi warehouse.	2025	1.6	Socioeconomics Transportation
3	Local	Widewaters Route 31	This development would include 59,500 SF of retail space, a 37,500 SF supermarket, and a 7,100 SF restaurant. The developer also has requested a zoning change to facilitate additional construction of 220 apartments at the site.	Estimated 2025 or 2026	5.2	Utilities and Infrastructure Community Facilities and Open Space Socioeconomics Waste
4	Local	Drakes Landing	This project involves construction of 182 apartment units.	Estimated 2025 or 2026	7.0	Utilities and Infrastructure Socioeconomics
5	Local	OCDWEP OOWWTP Expansion	This project is the OOWWTP Major Upgrade and the White Pine/Rt. 31 Municipal Sewer Expansion.	2025-2028	0.9	Air Quality Biological Resources Utilities and Infrastructure Water Resources Waste
6	Local	Carmenica Dr. Housing	This project would construct 730 apartment units.	2026	1.9	Land Use and Zoning Utilities and Infrastructure Socioeconomics Transportation
7	Local	Fairfield Inn & Suites/Residence Inn	This project involves construction of a 162-room dual-branded hotel approximately four miles from the Proposed Project on a vacant lot off Carling Rd. near Rt. 31 and NYS Route 481. The project would share a driveway with TownPlace Suites.	2026	4.4	Land Use and Zoning Utilities and Infrastructure Socioeconomics
8	Local	Oak Orchard Culvert Replacement	This project would replace the Oak Orchard culvert over Young's Creek.	Estimated 2026	2.3	Water Resources
9	Local	Delta Sonic Car Wash	This project involves construction of a car wash and the installation of a new traffic signal and a right-turn lane into the property.	Estimated 2026	4.9	Utilities and Infrastructure Socioeconomics

[163] ID numbers correspond to numbers in Figure 4.2-1 (Local Area) and Figure 4.2-2 (Regional Area). Distance refers to distance from Micron Campus.

						Transportation
10	Local	Tocco Villaggio	This project would consist of two or three retail properties and approximately 260 apartment units on the eastern side of WPCP.	Estimated 2026	0.9	Geology, Soils, and Topography Land Use and Zoning Biological Resources Utilities and Infrastructure Water Resources Community Facilities and Open Space Socioeconomics Transportation Historical and Cultural Waste
11	Local	Teall Ave.	This project would convert four lanes to three lanes from Grant Blvd. to Court St. and add a southbound turn lane from Soule to Fairways east.	Estimated 2026	4.1	Transportation
12	Local	Oswego Rd. (Rt. 57)/Soule Rd.	This project involves installing a new signal at Soule Rd. and Fairways East, and a southbound left turn lane from Soule Rd. to Fairways. The project would include removing some extra pavement on Oswego Rd. south of the intersection to eliminate a merge condition.	Estimated 2026	4.7	Transportation
13	Local	Metro North	This project would involve the construction of 220 market rate apartments and 180 senior apartments.	2027	2.8	Utilities and Infrastructure Socioeconomics
14	Local	Recommended Mitigation Measures - Scenarios A, B, and C	If implemented by the relevant transportation and planning authorities, this project would mitigate the traffic impacts anticipated to result from the development of the Micron Campus, and would include the Proposed Project related roadway modifications Proposed Project related new roads, and other planned roadway improvements in the same areas.	2027-2030	Adjacent to Micron Campus, multiple segments – see Figure 4.2-1	Geology, Soils, and Topography Biological Resources Water Resources Air Quality GHG and Climate Change Transportation Noise (Mobile) Historic and Cultural Waste Environmental Justice
15	Local	White Pine Science and Technology Park	This project would involve the development of an industrial park on a 105-acre site owned OCIDA to accommodate companies involved in innovating the semiconductor production supply chain.	2028	0.65	Geology, Soils, and Topography Land Use and Zoning Biological Resources Air Quality GHG and Climate Change Utilities and Infrastructure Community Facilities and Open Space

						Socioeconomics Noise Historic and Cultural Waste
16	Local	Caughdenoy Rd. and NY 31 Improvements	This project would install left turn lanes all approaches to the intersection of Caughdenoy Rd. and NY 31, and right turn lanes in the north, west, and east portions of the intersection. It will also add a second northbound lane on Caughdenoy road between the intersection with NY 31 and the railroad tracks south of Verplank Rd.	2030	0.9	Geology, Soils, and Topography Biological Resources Transportation Noise (Mobile)
17	Local	Lakeshore Rd. at Rte. 31	Rte. 31 widening between Lakeshore Rd. to Thompson Rd. for roadway capacity enhancements.	2032	2.4	Transportation
18	Local	Great Northern Mall Redevelopment	This project would involve the redevelopment of a 541,651 SF complex of commercial, retail, supermarket, and hotel space, 755,850 SF of medical office space, 1,636 apartment units, and 875 hotel rooms. Roadway improvements include additional access points along Morgan Rd, Rte. 31, Verplank Road, NYS Route 481/31 interchange modifications, and new access from NYS Route 481 at Verplank Road.	Phased project to be completed in 2034	3.4	Geology, Soils, and Topography Biological Resources Utilities and Infrastructure Community Facilities and Open Space Socioeconomics Transportation Waste
-	Local	Enhancing the Transit System (see Figure 4.2-1 Legend)	Centro is working in partnership with local communities to invest in the implementation of a Bus Rapid Transit network in Onondaga County.	Unknown/TBD	Unknown – existing bus lines shown in Figure 4.2-1	Transportation
19	Local and Regional	The I-81 Viaduct Project	NYSDOT is planning a multi-contract redevelopment that replaces the 1.4-mile elevated highway of I-81 through downtown Syracuse, while rerouting through traffic along the existing I-481 corridor to the north and south. The full project spans from the I-481/I-81 interchange in Cicero (north), through downtown Syracuse, to the southern I-481/I-81 interchange in DeWitt, and includes associated street, bridge, and utility work. This project involves updates to the north and south I-81/481 interchange, I-481/5 interchange, and ancillary work to the I-481 mainline to the north and south of the I-481/Kirkville interchange, and to the I-81 mainline and thoroughfare north of the I-481/81 south interchange.	Unknown/TBD	2.5	Transportation
20	Regional	Aquarium at Syracuse Inner Harbor	This project involves the construction of an 80,000 SF Aquarium in Syracuse's Inner Harbor.	2025	8.9	Utilities and Infrastructure Community Facilities and Open Space
21	Regional	Miller Road Apartments	This project consists of 10 residential apartment units on Miller Circle (south of Bartell Rd. and west of I-81 in Brerston).	Anticipated completion date in 2025.	2.9	Utilities and Infrastructure Socioeconomics

22	Regional	Horner Subdivision	This project involves the construction of 45 single-family homes.	Anticipated completion date in 2025.	3.5	Utilities and Infrastructure Socioeconomics
23	Regional	Lyons Runne Subdivision	This project involves the construction of 73 single family homes.	Anticipated completion date in 2025.	5.5	Utilities and Infrastructure Socioeconomics
24	Regional	Old Liverpool Rd. Construction	This project would add a center lane to Old Liverpool Rd. between School Rd. and Electronics Pkwy, and upgrade signals at Enysford Dr., Beechwood Ave., and School Rd.	Anticipated completion date in 2025.	7.0	Transportation
25	Regional	Buckly Rd. from Hopkins Rd. to Taft Rd. Improvements	This project would add turn lanes from Buckley Rd. to Dolshire Dr.	2025 or 2026	5.0	Transportation
26	Regional	Urban Villages	This project involves the construction of 250 apartment units.	2025/2026	7.7	Utilities and Infrastructure Socioeconomics
27	Regional	I-81/I-481 Updates (Northern Interchange)	This northern interchange project is a major component of the I-81 Viaduct Project (#19), allowing traffic to bypass downtown Syracuse via the new I-81 alignment while improving local connectivity, safety, and access for surrounding residential and commercial areas. Given its location in Cicero and substantial work – including a new flyover ramp, updated directional ramps, and replacement of multiple bridges, and its planned beneficial impacts to the surrounding community – it is independently featured in addition to the full I-81 Viaduct Project in the regional figure.	2026	3.5	Transportation Noise (Mobile)
28	Regional	Crego Rd. Housing	This project would construct 216 apartment units and 124 single family homes.	2026	10.4	Utilities and Infrastructure Socioeconomics
29	Regional	Buckley Rd. - Bear Rd. to Henry Clay Blvd.	This project would repave and provide minor signal upgrades from Bear Rd. to Henry Clay Blvd.	Estimated 2026	3.7	Transportation
30	Regional	Inverness Gardens Senior Apartments	This project would involve the construction of 96 residential apartment units.	Estimated 2026	4.9	Utilities and Infrastructure Socioeconomics
31	Regional	John Glenn	This is a paving project with minor signal upgrades from NYS Rte. 370 to Buckley Rd.	Estimated 2027	4.5	Transportation
32	Regional	7th North	This project would reduce the road from four lanes to three lanes from Electronics Parkway to Terminal Rd.	Estimated 2027	6.5	Transportation
33	Regional	Onondaga Blvd.	This project would reduce the number of lanes on Onondaga Blvd. from four to three lanes from Fay Rd. to Velasko Rd.	Estimated 2027	15.1	Transportation
34	Regional	Commerce Blvd. and Vine St. Intersection Improvements and Vine St. Widening	This project would widen Vine St. to accommodate a center turn lane and paint an additional center turn lane on Commerce Blvd. between the Thruway and Henry Clay Blvd.	2028	5.3	Transportation
35	Regional	Improvements to Rte. 31 at Thompson/Torchwood	This project would add a roundabout at the Rte. 31-Thompson Rd./Torchwood Ln. intersection, and add left turn lanes in all directions at the Rte. 31-South Bay Rd. intersection.	2030	3.0	Transportation
36	Regional	Rte. 370 at John Glenn Blvd. Intersection Improvements	This project would install an additional thru lane on Rte. 370 northbound, a right turn lane on Rte. 370 southbound, a right turn lane on John Glenn Blvd. westbound, and a left turn lane on John Glenn Blvd. eastbound.	2030	6.6	Transportation

37	Regional	Reconstruction of Rte. 11 at the intersection of Rte. 49	This project would reconstruct the intersection at Rte. 11 and Rte. 49.	2030	6.6	Transportation
38	Regional	Onondaga Lake Pkwy Safety Improvements	This project would reduce Onondaga Lake Pkwy from four lanes to two lanes from Skanonh Center to I-81 and add left turn lanes on Old Liverpool Rd. at Electronics Pkwy.	2030	7.0	Transportation
39	Regional	District East (Shoppingtown Mall)	This project would involve the construction of 252,894 SF of retail space, 404,433 SF of medical office space, a 46,750 SF supermarket, a 70,525 SF movie theater, 912 apartment units, and 100 hotel rooms.	2030	11.0	Utilities and Infrastructure Communities Facilities and Open Space Socioeconomics
40	Regional	NYS Route . 481 NB Off-Ramp at Circle Dr.	This project would install a designated right turn lane (300 ft.), and longer left turn lane (1000 ft.) for the NYS Route 481 off ramp approach at the intersection of Circle Dr. E. and NYS Route 481. It also would install an additional 400-ft. right turn lane for the westbound Circle Dr. approach at the intersection with Rte. 11.	2032	3.0	Transportation
41	Regional	Lakeshore Villages	This project would involve the construction of 266 apartments, 20,000 SF of office space, 20,000 SF of retail space, 26,000 SF restaurant space, 30 condominiums, a 36,000 SF clubhouse, a 120-room hotel with a 500-person conference center, a 116-Berth marina, and, at the marina, an additional 123 apartments, 163 single family homes, and 20 townhouses.	2034	4.6	Biological Resources Utilities and Infrastructure Community Facilities and Open Space Socioeconomics Water Resources Transportation Waste
42	Regional	Burt Point	This project would include proposed Burt Point OCWA water transmission improvements, including a new pump station, electrical substation, riser well, and raw water tunnel (in bedrock est. 100ft. deep).	2035	25.6	Biological Resources Utilities and Infrastructure Water Resources
43	Regional	Roundabout at James and Shotwell/Grant	This project involves construction of a roundabout.	2040	8.6	Transportation
44	Regional	James Street Three Lane Cross Section from State to Grant and Shotwell	This project involves repainting the road to change from two lanes each direction to one lane each direction, with a center turn lane, which will transition to left-turn only lanes at signalized intersections.	2040	8.6	Transportation
45	Regional	Conversion of Downtown (Syracuse) Streets to Two Way	This project involves converting several one-way streets in downtown Syracuse into two-way streets, including Jefferson St. (Montgomery to State - 1NB 1SB lane), Montgomery St. (Erie to Water - 2NB 1SB lane, Water to Washington - 1NB 1SB lane, Washington to Fayette - 2NB 1SB lane, Fayette to Jefferson - 1NB 1SB lane, Jefferson to Adams - 1NB 1SB lane), Warren St. (Willow to Washington - 1NB 1SB lane), and Clinton St. (Herald to Water - 1NB SB lane, Water to Washington - 1NB 3SB lane, Washington to Fayette - 2NB 1SB lane, Fayette to Dickerson - 1NB 1SB lane, Dickerson to Adams - 1NB 2SB lane).	2040	9.7	Transportation
46	Regional	Water St. closure	This action would close Water St. from S. Crouse Ave. to S. Beech St.	2040	9.7	Transportation

47	Regional	Intersection Improvements at NY 5 and NY 257	Basic intersection improvements.	2040	13.3	Transportation
48	Regional	Expanding the Regional Trail Network (Onondaga Comp Plan)	Onondaga County is considering expanding the Onondaga County Loop, Lake Trail, Creekwalk, and connector trails utilizing local road networks.	Unknown/TBD	8.6	Community Facilities and Open Space
-	Regional	New BRT routes (see Figure 4.2-2 Legend)	Development of new Bus Rapid Transit routes.	2030	Unknown – existing bus lines shown in Figure 4.2-2	Transportation
-	Regional	New express transit route along I-81	Addition of new express transit route along I-81.	2030	Unknown/TBD	Transportation

4.3 CUMULATIVE EFFECTS ANALYSIS

The following subsections discuss the potential for cumulative effects on each resource area based on: (1) the relevant scope of the cumulative effects analysis for each resource area as identified in Table 4.2-1; and (2) the incremental effects of the Proposed Project when added to the effects of the present and reasonably foreseeable actions listed in Table 4.2-1.

4.3.1 Land Use, Zoning, Public Policy

Certain projects identified in Table 4.2-1 have the potential for cumulative land use and zoning effects with the Proposed Project given their proximity to the Proposed Project. The effects on land use are caused by the redevelopment of vacant properties with new uses. The ongoing and reasonably foreseeable future cumulative actions summarized in Table 4.2-1 would construct new commercial and residential uses on vacant parcels. The cumulative effect of these projects would be a reduction of vacant land and an increase in new industrial, commercial, and residential uses. These projects would generally comply with zoning regulations and the terms and conditions of any necessary local approvals, and are consistent with public policies that identify the region as an area of growth and redevelopment. There would be additional effects, due to certain transportation improvements. The anticipated modifications to I-81 and NYS Route 31 interchanges and intersections, and potential widening of US Route 11 and NYS Route 31, could require direct or partial acquisitions of property which could have the potential to displace existing uses. Overall, the effects of these actions would not be considered significant adverse impacts to land use, zoning, and public policy.

The Preferred Action Alternative would contribute to the effects described above. While the Proposed Project would be the largest redevelopment project affecting vacant land in the geographic study area, it would comply with local zoning and would be consistent with public policies, building on the Proposed Project as a major new employment center and economic development effort in the region. The effect from the Proposed Project would be concentrated in the areas near NYS Highway 31 and US Route 11/Interstate 81 that have been identified as areas intended for growth and economic development uses by relevant public policies; in particular, the Comprehensive Plan for Onondaga County (Plan Onondaga, summarized in Appendix D-3) identifies this area as an appropriate center for new development (referred to as an “Emerging Center” under the Comprehensive Plan’s land use plan).

Overall, in consideration of the reasonably foreseeable other projects that may affect land use and zoning, the Preferred Action Alternative would contribute to cumulative effects on land use. This cumulative effect would be noticeable; however, it would not be considered a significant adverse impact.

4.3.2 Geology, Soils, and Topography

A number of the projects identified in Table 4.2-1 would impact geology, soils and topography. These include residential and commercial development as well as transportation improvements, which would likely require rock removal, soil disturbance, or topographic changes.

The Preferred Action Alternative would not result in a meaningful incremental contribution related to geology, topography, and soils because most effects would be limited to the construction footprint, and because other ongoing and reasonably foreseeable projects do not occur in the vicinity. As described in Section 3.2 (Geology, Soils, and Topography), construction activities, such as cut and fill, excavation, grading, would result in permanent modifications to onsite soils, geologic conditions, and topography. However, once the construction period is complete, the site would be stabilized, and long-term impacts avoided through the implementation of erosion and sediment control measures and a SWPPP (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP). Because geology, soils, and topographic resource impacts would be limited to the construction footprint and would not spatially overlap with the ongoing and reasonably foreseeable projects, these impacts would not contribute to a cumulative impact. Therefore, the Preferred Action Alternative would not cause an incremental impact that would be significant when added to the impacts on geology, soils, or topographic resources from other reasonably foreseeable future projects.

The projects identified in Table 4.2-1, as well as any induced development associated with the Preferred Action Alternative would be required to comply with local regulations and construction procedures as mandated at the time of site plan or building permit approval. Compliance with state and local land development regulations, including the preparation of a SWPPP (see Appendix F-8 for Draft Micron Campus Phase 1a SWPPP) and implementation of BMPs for erosion and sediment control, would minimize potential impacts to geology, soils, and topography. Therefore, when considered cumulatively, the effects would not be significant.

4.3.3 Water Resources

Cumulative impacts to water resources could result from activities at the Proposed Project sites (i.e., the Micron Campus, Rail Spur Site, and Childcare Site) in combination with Connected Actions, and other actions identified in Table 4.2-1.

As detailed in Section 3.3 (Water Resources) the Proposed Project and Connected Actions would result in significant adverse effects on wetlands and surface water. Construction of the Proposed Project and Connected Actions, however, would not result in significant adverse effects from stormwater or significant adverse effects on groundwater, floodplains, or coastal resources.

It is not anticipated that any of the proposed projects in Table 4.2-1 would substantially exacerbate the water resource effects of the Proposed Project and Connection Actions. Notwithstanding, cumulative effects on water resources were assessed for wetlands, floodplains, streams and rivers (including water quality), groundwater, and coastal resources. Stormwater is evaluated within the context of effects on these listed water resources. This assessment of cumulative effects evaluates the five-county region that includes Onondaga, Oswego, Madison, Cortland, and Cayuga Counties. This region includes the nine sub-watersheds potentially affected by the Proposed Project and Connected Actions (see Appendix F). To be conservative, all transportation and reasonably foreseeable actions within the nine sub-watersheds were considered for the cumulative effects evaluation of water resources. Actions outside the nine sub-watersheds are not anticipated to result in measurable effects related to the Proposed Project and Connected Action effects on water resources.

USGS National Land Cover Database (NLCD) maps, National Wetlands Inventory (NWI) maps, and New York State Wetland maps were used to identify historic changes in land cover, surface water bodies, and wetlands. Historic changes to floodplains were identified through historic Federal Emergency Management (FEMA) floodplain maps. For groundwater, data from the U.S. Geological Survey (USGS) and the State of New York were used to identify historic changes.

The potential cumulative effects of the Proposed Project and Connected Actions on each water resource are discussed below. Cumulative effects were assessed by combining historic changes with forecasted changes in surface water/water quality, wetlands, groundwater, floodplains, and coastal resources evaluated in the context of any losses or reductions in resource quality.

Wetlands

Some of the projects identified in Table 4.2-1 are anticipated to impact wetlands. Such impacts could be both temporary or permanent. Permanent loss of wetlands would be expected from grading, excavation, and/or adding fill material to wetlands to create the level upland conditions required for construction of building foundations, walkways, driveways, parking lots, roadways, and all other elements associated with cumulative actions. The loss of wetlands includes the loss of their functions (e.g., floodflow alteration, sediment/toxicant retention, groundwater recharge/discharge) and services (e.g., endangered species habitat) as well. Although some wetlands may have limited function or service value and/or may not be regulated by the federal or state government, many of them are likely to be jurisdictional and thus trigger federal and/or state permitting requirements. Thus, any loss of jurisdictional wetlands would be at the discretion of federal and state agencies and any losses of regulated wetlands that were permitted would be subject to mitigation through enhancement, establishment, and/or restoration of wetlands within the watershed to ensure that wetland functions and services are not lost overall within the watershed basin.

Although the exact number of acres of wetlands that may be lost because of these potentially permitted activities cannot be determined at this time, any such losses have the potential to permanently affect the hydrology and habitat in the immediately surrounding area. These effects are primarily induced by the increase of stormwater runoff and decrease of groundwater recharge. Changes in the amount of water entering remaining downgradient wetlands can affect species composition, wetland hydrology, and soil saturation conditions.

Impacts to remaining wetlands are also anticipated from the short-term intrusion of mechanized equipment and personnel and the potential for spills during construction. The majority of these effects would be a result of trampling and machine compression or trenching. Upland changes in topography (e.g., soil stockpiling) through the completion of each construction project and the permanent increase in impervious surfaces for certain projects (e.g., White Pine South industrial park and the widening of Route 31) are also expected to have impacts on remaining wetlands from increased stormwater runoff.

All applicable future actions in which federal or State jurisdictional wetlands would be impacted would be required to comply with any applicable Federal and State wetland laws. Permit applications would require plans for the avoidance of wetlands whenever and wherever possible, as well as the implementation of SMPs, BMPs (e.g., using silt fences, compost filter socks, timber mats), erosion and sediment control, stormwater pollution prevention, and/or spill prevention control, as necessary, to minimize impacts on remaining wetlands. All regulated wetland losses would also be subject to mitigation as required by the CWA. Compliance with these relevant laws and regulations would reduce the potential for cumulative impacts on remaining wetlands within analysis area to the maximum extent practicable.

In summary, transportation upgrades and reasonably foreseeable actions are predicted to result in additional adverse effects on existing wetlands, above and beyond the effects of the Proposed Project and Connected Actions, particularly if the projects are conducted within the same nine sub-watersheds and construction activities occur at the same time as construction of the Proposed Project and Connected Actions. These additional adverse effects are anticipated to result in the decline of wetland coverage. However, based on the avoidance, minimization, and mitigation measures that would be required as part of the permitting process, jurisdictional wetland losses would be compensated through enhancement, establishment, and/or restoration of wetlands elsewhere within the watersheds and the protection of existing wetlands would be maximized.

Floodplains

Many of the projects identified in Table 4.2-1, including transportation upgrades and recommended traffic mitigation, have the potential to alter topography and impervious surface coverage within the analysis area, ultimately impacting stormwater flow and leading to changes in floodplain areas. Cumulative impacts to floodplains due to alterations in stormwater flows from proposed development as well as due to development within floodplain boundaries cannot be reasonably quantified or predicted due to the wide variability and uncertainty of project conditions associated with each action. Cumulative changes in stormwater flows associated with future actions and the Proposed Action have the potential to significantly impact floodplains within the limits of the applicable hydrologic system; however, local, state, and federal, regulations and permits exist to prevent and minimize direct impacts associated with development within floodplain boundaries as well as stormwater impacts downstream of developments. Due to these regulations, cumulative effects to floodplains would not be significant.

Streams

The permanent loss of smaller stream channels and unregulated ditches is expected from grading, excavation, and/or adding fill material to create the level upland conditions required for construction of building foundations, walkways, driveways, parking lots, roadways, and all other elements associated with certain projects identified in Table 4.2-1. All losses are anticipated to occur within streams designated as Class C waters or lower. The permanent loss of smaller headwater streams includes the loss of their primary functions, including their potential to provide wildlife habitat, retention of organic and inorganic particulates, nutrients, contaminants, or other elements and compounds (i.e., increase water quality), and stabilize bed, banks, and floodplains. Secondary functions would also be lost (e.g., ability to transport woody debris and sediment to influence stream bed forms and thermal regulation). Unavoidable losses of surface water channels would be subject to mitigation through enhancement and/or restoration of streams within the watershed to ensure that surface water functions are not lost within the overall watershed basin.

Although the exact amount of stream beds that may be lost because of these anticipated activities cannot be determined at this time, the loss of surface water features has the potential to permanently affect the downgradient local hydrology.

Similar impacts to existing water quality conditions (e.g., increasing turbidity) are also anticipated as a result of runoff of disturbed or un-stabilized soil from short-term construction activities at sites located within adjacent riparian habitat. Impacts to existing water quality conditions are also anticipated as a result of the suspension of sediment into the water column during in-water construction projects (e.g., Oak Orchard culvert replacement and OCWA water intake at Burt Point). Both in-water and adjacent upland construction activities also run the potential risk of releasing hazardous chemicals or other contaminants (e.g., petroleum hydrocarbons) into associated stream systems through stormwater runoff. However, all of these impacts on remaining rivers and streams would be temporary through the construction phase for each associated project.

The permanent increase in impervious surfaces for certain projects (e.g., White Pine South industrial park and the widening of Route 31) would increase stormwater runoff leading to changes in the quantity and quality of the receiving waters. Pollutants are often carried with stormwater runoff over impervious surfaces which can alter surface water chemistry and decrease water quality over time. Depending on the toxicity of the pollutant discharged, these chemicals may result in detrimental effects on aquatic plant and animal species.

All future projects in which rivers and streams would be impacted would require applicable Federal and State permitting (e.g., CWA Section 404, Rivers and Harbors Act Section 10, and state Article 15 permitting) to ensure protection of surface water features. Permit applications would require plans for the avoidance of rivers and streams whenever and wherever possible, as well as the implementation of SMPs, BMPs (e.g., using HDD, silt fences, compost filter socks, timber mats), erosion and sediment control, stormwater pollution prevention, and/or spill prevention control, as necessary, to minimize impacts on remaining surface water features and water quality conditions. All regulated stream channel losses would be subject to mitigation as required by the CWA. Compliance with these relevant laws and regulations would reduce the potential for cumulative impacts on remaining surface water features and water quality conditions within the analysis area to the maximum extent practicable.

In summary, while transportation upgrades and reasonably foreseeable actions are predicted to result in adverse effects on existing rivers and streams, particularly if the projects are conducted within the same nine sub-watersheds and construction activities occur at the same time as construction of the Proposed Project and Connected Actions, they are not anticipated to substantially increase the already significant effect on streams from the Proposed Project and Connected Actions. However, based on the avoidance, minimization, and mitigation measures that would be required, losses would be compensated through enhancement and/or restoration of river or streams elsewhere within the watersheds and the protection of existing surface water features and associated water quality would be maximized.

Groundwater

Certain projects identified in Table 4.2-1, including transportation upgrades, have the potential to impact groundwater quality through contamination associated with urbanization. Over time, increases in industrial discharges and agricultural uses of synthetic organic chemicals have led to groundwater contamination. It can be assumed that planned residential, industrial, and transportation development, along with the implementation of the Proposed Action and Connected Actions could reasonably result in the increased storage, handling, and use of potential groundwater contaminants, ultimately leading to the increased risk of groundwater exposure to pollutants from spills or leaks, or from contaminated stormwater runoff. Based on the characteristics of relevant aquifers, increases in groundwater contamination due to urbanization could lead to local and regional cumulative impacts, as surficial aquifers are highly permeable and could become contaminated from overlying spills, leaks, or infiltration, and carbonate aquifers can transport groundwater long distances through solution openings, potentially transporting contamination on a regional scale. Ultimately, depending on the severity of potential groundwater exposure to contaminants, impacts could be significant and widespread. However, preventative measures taken by those entities storing or handling potential groundwater contaminants would reduce risks of exposure to groundwater. These may include standardized chemical storage and handling practices, the use of spill prevention and countermeasure plans and practices, and the use of BMPs that can trap or prevent the infiltration of contaminated stormwater.

Coastal Resources

Projects that would have the potential to cumulatively affect coastal resources would be those situated within the state Coastal Area (e.g., the OCWA Burt Point project) and those within the City of Oswego and Town of Clay LWRP areas (i.e., transit system enhancements and roadway modifications). Such projects would require at a minimum a federal consistency review and determination through the New York State Coastal Management Program for the protection of Coastal Area features and municipal approvals through the City of Oswego and Town of Clay for any projects located within their respective LWRP boundaries. Permit applications would require plans for the implementation of SMPs, BMPs (e.g., using HDD, silt fences, compost filter socks, timber mats), erosion and sediment control, stormwater pollution prevention, and/or spill prevention control, as necessary, that would serve to protect valuable coastal resources from flooding and erosion. Compliance with these relevant laws and regulations would reduce the potential for cumulative impacts on coastal resources within the analysis area to the maximum extent practicable.

In addition, adverse effects anticipated as a result of transportation upgrades and reasonably foreseeable actions within the coastal resource boundaries would not be expected to cause the loss of living marine resources and wildlife, reduce the amount of open space areas or public access to the waterfront, cause shoreline erosion, impair scenic aesthetics, impact historic resources, cause permanent adverse changes to the ecological systems, or have an impact on their beneficial use. Therefore, cumulative effects on coastal resources would not be significant.

4.3.4 Biological Resources

Table 4.2-1 includes many residential and commercial projects, as well as roadway improvements that could impact biological resources. Certain of the larger projects are proposed in previously disturbed areas (e.g., Great Northern Mall and Shoppingtown), while others would occur on previously undisturbed sites (e.g., White Pine Science and Technology Park).

Construction of the Proposed Project would result in significant adverse effects on biological resources, including significant adverse effects on Federal and State listed threatened and endangered species, or species proposed for listing. Neither the projects identified in Table 4.2-1 nor the induced growth evaluated in Section 3.4 (Biological Resources) are anticipated to meaningfully change this significance finding. Given its proximity to the Micron Campus, the

White Pine Science and Technology Park could have overlapping impacts which would ultimately depend on the timing of the park's development, the nature and extent of development and the park's ultimate design and layout.

Between 2001 and 2021, forest cover (i.e., Deciduous Forest, Woody Wetlands, Mixed Forest, Evergreen Forest) which represents habitat for federally and state listed bats and other wildlife that use forest habitat is expected to increase slightly from 1.212 to 1.217 million acres in the five-county area, due in large part to agricultural abandonment and the subsequent succession of former farmland into forest. Across the entire five-county study area, cumulative growth is predicted to result in a loss of approximately 4,667 acres (0.38 percent) of existing forest by 2041. This may be explained by the abundance of farmland in the region and the ongoing decline of agriculture, with farmland rather than forestland absorbing a large proportion of recent and future development. Under cumulative projections to 2041, forest cover types are expected to occupy 29.7 to 58.0 percent of the total land cover in each of the five counties analyzed.

Between 2001 and 2021, grassland habitat (i.e., Pasture/Hay, Cultivated Crops, and Grassland/Herbaceous) which represents habitat for state listed grassland bird species and other wildlife that use grassland habitat decreased by 12,128 acres (0.46 percent of total land area) in the five-county area, mostly due to development and the succession of abandoned farmland into shrubland or forest. Across the entire five-county study area, cumulative growth is predicted to result in a loss of approximately 5,963 acres (0.78 percent) of existing grassland by 2041 and grassland cover types are expected to occupy 14.9 to 18.4 percent of the total land cover in each of the five counties analyzed.

As described above, the cumulative effects on forested and grassland habitats, and the wildlife that depend on these terrestrial habitats, would not be materially different than the Proposed Project's projected effects.

4.3.5 Historic and Cultural Resources

None of the projects listed in Table 4.2-1 are in the direct APE for the Proposed Project and Connected Actions (see Section 3.5 (Historic and Cultural Resources) and Appendix H). However, certain projects identified in Table 4.2-1 would occur in the indirect APE and would be developed on previously undisturbed sites. Examples include the White Pine Science and Technology Park as well as certain recommended transportation improvements.

4.3.5.1 Historic Architectural Properties

In the reasonably foreseeable future, potential transportation improvements could be implemented including the widening of US Route 11 (Brewerton Road) from two to five lanes in Cicero and the widening of NYS Route 31 in Clay. Should these traffic improvements affect historic architectural resources identified in the APE established for the Proposed Project and Connected Actions, e.g., through any takings of portions of those properties, adverse impacts could result if character defining features of the property(ies) would be removed or altered.

Other projects listed in Table 4.2-1 could potentially result in adverse impacts on historic architectural resources, particularly in cases where the demolition of historic structures is not regulated or where construction of new structures would negatively affect the character and viewshed of historic properties and districts. Conversely, projects and developments could also result in investment in existing housing and building stock. Where investments would be made to repair or rehabilitate existing historic structures and there is a review mechanism in place (e.g., a landmarks ordinance with an acting historic preservation commission), development projects could potentially have a positive effect where locally designated properties are affected. Section 106 of the NHPA and the NYSHPA provide some protection for properties that are listed in or determined eligible for listing in the NRHP and SR through a notice, review, and consultation process for certain actions. In instances where projects could require rezonings and other discretionary land use approvals, e.g. site plan approvals or variances, such developments would be subject to site-specific environmental review subject to SEQRA. Induced growth resulting from the Preferred Action Alternative, which would have the potential to result in changes to land uses throughout the five-county study area due to increased demand for business services and housing, may contribute to the cumulative adverse or beneficial effects described above. Overall, the cumulative effects of the Preferred Action Alternative may have significant adverse impacts on historic architectural resources if there are not appropriate measures in place at local, state, and federal levels as described above. However, as discussed in Section 3.5 (Historic and Cultural Resources), any future development requiring discretionary approvals that would be undertakings under the NHPA or NYSHPA would be required to comply with Section 106 of the NHPA or Section 14.09 of the NYSHPA.

4.3.5.2 Archaeological Resources

The transportation projects identified in Table 4.2-1 may extend into portions of the APE for Direct Effects identified in Section 3.5 (Historic and Cultural Resources) and Appendix H. In any locations where the proposed transportation improvements extend into those portions of the APE for Direct Effects that were identified as archaeologically sensitive, it is presumed that Phase 1B Archaeological Investigations related to the Preferred Action Alternative would have already occurred to confirm the presence or absence of archaeological resources in those areas. If resources were confirmed to be present, it is also presumed that any Phase 2 or Phase 3 investigations would have been completed to evaluate archaeological sites and mitigate potential impacts through data recovery. Since any adverse impacts on archaeological resources within the APE for Direct Effects would be avoided, minimized, or mitigated under the Preferred Action Alternative, the Preferred Action Alternative would not contribute to any cumulative effects to archaeological resources within the APE for Direct Effects. In any locations where the proposed transportation improvements extend into those portions of the APE for Direct Effects that were identified as having no archaeological sensitivity as a result of previous disturbance, there would no potential for cumulative effects to archaeological resources.

4.3.6 Air Quality

4.3.6.1 Cumulative Effects on Air Quality from Stationary Source Emissions

Only two projects identified above in Table 4.2-1 are likely to have cumulative impacts associated with stationary source emissions. This includes the OCDWEP OOWWTP expansion and potential development at the White Pine Science and Technology Park.

The air dispersion modeling completed for the Proposed Project evaluated the cumulative effects of the Proposed Project’s emission sources in combination with the potentially impactful non-Micron emission sources located within Onondaga County and surrounding counties within a

50 km radius of a Cartesian grid overlay. (see Section 3.6 (Air Quality)). This includes the existing OOWWTP which operates under a State air facility registration.[164] The proposed expansion of the OOWWTP is not likely to significantly increase the facility's existing emissions or cause it to exceed any major source thresholds. Regardless, the proposed expansion of the OOWWTP will be subject to a separate environmental review and applicable air permitting.

Potential cumulative air quality effects from the White Pine Science and Technology Park would be dependent on the nature and extent of companies that ultimately elect to site there. Assuming some Micron suppliers elect to site at this location or generally in the region, there could be additional stationary air emissions associated with operations. It is likely that any such emissions would be subject to NYSDEC permitting. Micron will partner with suppliers on emissions-reduction projects such as manufacturing equipment upgrades, efficiency improvements, and renewable energy onsite generation and purchases, especially for suppliers that are expanding to meet Micron demand. Advancement of product technology would continue to help meet downstream use power efficiency needs to help mitigate environmental impacts from increased computational demands.

Given the foregoing, the cumulative effect of the Proposed Project on air quality due to stationary source emissions is not anticipated to be significant.

4.3.6.2 Cumulative Effects on Air Quality from Mobile Source Emissions

There are a number of projects identified in Table 4.2-1 that could have cumulative effects on mobile source air emissions. The majority of these were addressed in the TIS for the Proposed Project which evaluated the contribution from Proposed Project-associated traffic as well as non-Proposed Project future regional growth and projects. As such, the traffic study presents both cumulative traffic and traffic growth effects in the study area. This analysis was then used to evaluate the Proposed Project's effect on mobile source emissions. As such, the analysis presented in Section 3.6 (Air Quality) already captures the cumulative effect of the Preferred Action Alternative on air quality from mobile source emissions. As explained in Section 3.6 (Air Quality), the Preferred Action Alternative is not anticipated to have significant cumulative mobile source related impact to air quality. It may, however, have some localized cumulative air quality impacts associated with high traffic-impacted intersections near the Proposed Project boundary, which may become emissions/air quality "hot spots."

The local scale (hot spot) mobile source intersection analysis includes the Proposed Project-generated traffic and cumulative Proposed Project effects on traffic, which are accounted for in the traffic data. In 2041, with or without implementation of the transportation mitigation measures, the ambient air quality modeling results, when added to baseline conditions, would demonstrate minimal cumulative effects, and continued compliance with the NAAQS. Therefore,

[164] Facilities who operate under state air facility registrations are generally smaller facilities with the following characteristics: (1) their annual emissions are less than half of the level that would make them a major source; (2) they do not require the use of permit conditions to limit their emissions below the thresholds that would otherwise make them subject to state or federal requirements; and (3) their annual emissions of high toxicity air contaminants do not equal or exceed the applicable thresholds.

the cumulative effects of the Preferred Action Alternative on air quality due to mobile source emissions is not anticipated to be significant.

Further, the contribution of mobile source emissions to ambient air quality is decreasing and expected to continue decreasing for the foreseeable future due to continued improvement in, and adoption of, new vehicle technology, including electric vehicles, as well as the numerous transportation improvement projects identified in Table 4.2-1 that are anticipated to reduce congestion and associated mobile source emissions. This decrease in mobile source emissions is anticipated to occur concurrent with increases in vehicle miles travelled and future, reasonably foreseeable growth such as new industrial facilities, housing, and commercial activity.

4.3.7 Greenhouse Gas Emissions, Climate Change and Climate Resiliency

Given that climate change is the result of the increased global accumulation of GHGs, a climate effects analysis is inherently cumulative in nature. Because climate change is a global phenomenon with disparate regional effects across the globe and results from the cumulative global anthropogenic and non-anthropogenic emission of GHGs in the past, present, and future, it is impossible to determine with any accuracy the actual environmental effect that any set of GHG emissions may have on the environment. However, to help inform agency decision making, analysis and disclosure of climate-related effects may be accomplished by quantifying GHG emissions that are associated with a particular action, in this instance, the Proposed Project, and placing it in context with other relevant GHG emitters or emissions targets.

4.3.7.1 Stationary Source GHG Emissions

Stationary source-related GHG emissions associated with the Proposed Project were quantified in Section 3.7 (Greenhouse Gas Emissions, Climate Change, and Climate Resiliency), which also included reasonably foreseeable upstream emissions associated with electrical generation and fossil fuel production and delivery necessary for Project construction and operation. As explained in Section 3.7 (Greenhouse Gas Emissions, Climate Change, and Climate Resiliency), with mitigation measures, the GHG emissions associated with the Proposed Project and Connected Actions would be approximately 1.67 million metric tons per year. While this represents a significant reduction from the non-mitigated GHG emissions amount, the Preferred Action Alternative has already been determined to have a significant adverse impact on climate change. By seeking to construct the Proposed Project in New York State, Micron is subjecting itself to far stricter GHG regulation than in other states.

The projects identified in Table 4.2-1 are not anticipated to be comparatively large GHG emitters. Most would have GHG emissions associated with construction, but such emissions would be temporary. The one exception could be the White Pine Science and Technology Park where GHG emissions would be dependent on the nature and extent of the operations that occur there. Assuming some Micron suppliers elect to site at this location or generally in the region, there could be additional GHG emissions associated with such operations. Any such emissions over specific thresholds would be subject to NYSDEC permitting requirements, including compliance with the CLCPA's requirements and statewide GHG emission limits. Further, Micron encourages its suppliers to focus on reducing GHG emissions and energy use associated with their own operations and already requires key suppliers to report GHG emissions and water footprint to evaluate performance and goals. Micron also will partner with suppliers on emissions-reduction projects such as manufacturing equipment upgrades, efficiency improvements, and renewable energy onsite generation and purchases, especially for suppliers that are expanding to meet Micron demand. Advancement of product technology would continue to help meet downstream use power efficiency needs to help mitigate effects from increased GHGs resulting from increased computational demands.

In sum, none of the ongoing or future projects with effects that are cumulative with the Preferred Action Alternative would meaningfully alter or amplify the climate change effects of the Preferred Action Alternative, because the Proposed Project and Connected Actions are by far the most significant drivers of the climate change effects identified in this EIS.

4.3.7.2 Mobile Source GHG Emissions

Relevant GHG emissions from mobile sources are generally associated with traffic and transportation in the traffic study area. The traffic study includes the contribution from the Preferred Action Alternative, as well as future regional growth and projects. As such, the traffic study presents cumulative traffic and traffic growth in the study area. The regional mobile source GHG emission estimate is based on the traffic study and thus reflects the cumulative effect of traffic on mobile source GHG emissions in the study area.

As explained in the traffic study, mobile source GHG emissions are expected to continue to decrease due to continued improvement in, and adoption of, new vehicle technology. The anticipated decrease in mobile source GHG emissions is anticipated to occur concurrently with increases in vehicle miles travelled and future, reasonably foreseeable growth such as new industrial facilities, housing, and commercial activity.

Mobile source GHG emissions for the Preferred Action Alternative, which includes induced growth, will result in higher mobile source GHG emissions compared to the No Action Alternative by 9 to 12 percent from 2026-2041. Despite this, the trend shows an overall decrease in GHG emissions in the study area on an annual basis through 2041.

While the Preferred Action Alternative and the transportation mitigation actions would have a significant cumulative effect on GHG emissions within the traffic study area compared to the No Action Alternative, under both alternatives, total GHG emission levels are expected to be lower by 2041 than they currently are. Accordingly, cumulative effects of the Preferred Action Alternative's mobile source-related emissions is not anticipated to be significant.

4.3.7.3 Climate Change and Climate Resiliency

Micron chose the Proposed Project Site in Upstate New York in part because the area posed very low climate risk to the Proposed Project, including consideration of SFHAs, base flood elevations, flood insurance risk premium zones, and 500-year floodplains.

Like the Proposed Project, none of the projects identified in Table 4.2-1 are anticipated to significantly affect the climate resiliency of the surrounding area. None would directly contribute to the demand for groundwater (see Section 3.10, Utilities and Supporting Infrastructure), increase the likelihood or severity of local flooding (see Section 3.3 (Water Resources) and Section 3.11 (Transportation and Traffic)), or affect the ability of the surrounding area to respond to future increases in temperate, storm activity, or precipitation.

However, some of the projects identified in Table 4.2-1 have the potential to increase impervious surfaces. Because impervious surfaces such as concrete and pavement can reach temperatures 40˚F or more above grass temperatures under the same conditions (Knox, 2022), there could be increases in surface temperatures in the areas where the Proposed Project and Connected Actions would be located that may further exacerbate already existing adverse effects of extreme heat. Increased pavement temperatures during or immediately after precipitation events can heat stormwater runoff that drains into sewers, further raising water temperatures when released into bodies of water, negatively affecting aquatic ecosystem productivity. Increased surface temperatures are expected to adversely impact the levels and extent of groundwater availability. Higher surface temperatures would lead to increased evaporation and evapotranspiration, leading to a decline in groundwater levels as more water is pulled from the aquifer to compensate for lost water at the surface.

Some of the projects identified in Table 4.2-1 also may impact groundwater by requiring the storage and handling of chemicals of potential groundwater pollutants, dewatering, or other groundwater withdrawals. Groundwater depletion, in turn, will negatively impact water supply, as extreme heat will increase the demand for water used for drinking, recreation, and cooling. However, all future projects will need to comply with relevant Federal, State, and local environmental laws and regulations, including New York State programs that require municipalities to consider climate change and climate change resilience in their planning efforts, construction stormwater permits and, in some cases, operational effluent limitations associated with CWA Section 402 and ECL Article 17 which would minimize direct and/or indirect impacts to groundwater, including contamination. Due to Federal, State, and local regulations that are intended to protect groundwater supplies, any potential cumulative groundwater impacts is not anticipated to be significant.

Notwithstanding, all future projects will need to comply with relevant federal, State, and local environmental laws and regulations, including New York State programs that require municipalities to consider climate change and climate change resilience in their planning efforts, construction stormwater permits and, in some cases, operational effluent limitations associated with CWA Section 402 and ECL Article 17.

Given the foregoing and taking into account the CLCPA requirements governing climate change planning in New York State as well as the CRRA, the cumulative effect of the Preferred Action Alternative on climate change generally and climate resiliency is not anticipated to be significant.

4.3.8 Solid Waste, Hazardous Waste, Hazardous Materials

4.3.8.1 Solid Waste

Many of the projects identified in Table 4.2-1 would generate solid waste either during construction or operations. As a result, the potential exists for the Proposed Project to contribute to cumulative effects on the generation and disposal of solid waste.

Section 3.8 (Solid Waste, Hazardous Waste, Hazardous Materials) estimated the municipal solid waste (MSW) anticipated to be generated by the Proposed Project, and the indirect/induced effects. As part of this cumulative effects analysis, background growth[165] independent from the Proposed Project was also evaluated. The resulting MSW projection for the background growth within Onondaga County was calculated as approximately 14,900 tons per year, which would be a 5.4 percent increase over the Onondaga County baseline MSW collection rate of 276,396 tons in 2023 (OCRRA, 2024). The residential and commercial projects identified in Table 4.2-1 are partially subsumed in these estimates although it is expected that there could be additional MSW generated by projects such as, but not limited to, the Great Northern Mall, Shoppingtown and the White Pine Science and Technology Park.

The Proposed Project's estimated generation of MSW would be gradual and ultimately would exceed 43,500 tons per year in 2041 (see Section 3.8.3.2), Operation of the IWWTP at Oak Orchard would generate an estimated 3.7 tons of MSW per year in 2041.

Construction of the various potential traffic improvements would generate Construction & Demolition debris (CDD) such as excavated material (soil, rock) and asphalt. It is assumed that the excavated material would be recycled to the extent feasible via beneficial reuse in accordance with 6 NYCRR Part 360.13. Asphalt would likely be recycled by asphalt suppliers. Demolition of structures associated with any of the reasonably foreseeable projects would result in the generation of CDD. CDD (exclusive of fill material) would be disposed of at facilities authorized to accept CDD, such as the Onondaga County Waste-to-Energy (WTE) Facility, the Camillus Landfill, and the High Acres Landfill, which are anticipated to collectively have sufficient capacity.

Overall, in consideration of the background growth, the Preferred Action Alternative would contribute to cumulative effects on solid waste generation, which would be gradual but likely noticeable over time. However, it would not be considered a significant adverse impact because adequate capacity would be available within landfills throughout the region to accommodate the additional waste generation.

4.3.8.2 Hazardous Waste and Hazardous Materials

Most of the projects identified in Table 4.2-1 are not anticipated to generate, use or dispose of hazardous waste or hazardous materials. Those that would, including potential development at the White Pine Science and Technology Park should Micron supply chain companies site there, would be required to comply with all applicable federal and state regulations, including the Hazardous Materials Transportation Uniform Safety Act (49 CFR Parts 100-180), the Emergency Planning and Community Right to Know Act (40 CFR Parts 300-399), the CAA Amendments of 1990 (Section 112r Accidental Release Prevention/Risk Management Plan Rule; 40 CFR Part 68), the NYS DOT Transportation of Hazardous Materials (17 NYCRR Part 820.8), the NYSDEC Chemical Bulk Storage Program (6 NYCRR Parts 596-599), and the NYSDEC Petroleum Bulk Storage Program (6 NYCRR Part 613).

With respect to the Proposed Project, Micron has agreed to implement a SMMP and a Hazardous Waste Reduction Plan and will also adhere to requirements associated with NYSDEC's Petroleum Bulk Storage and Chemical Bulk Storage programs. Given the foregoing, the

[165] Background growth independent from the Proposed Project was based on regional projections on induced growth from the 2022 REMI Study and SMTC projections for the Syracuse Metropolitan Planning Area, as discussed above in Section 4.3.15.1.

reasonably foreseeable projects and potential induced growth could result in noticeable cumulative effects on hazardous waste and hazardous materials. However, it would not be considered a significant adverse impact because hazardous waste and materials handling and storage, and hazardous waste disposal would comply with all applicable laws and regulations.

4.3.9 Human Health and Safety

None of the projects identified in Table 4.2-1 have the potential for cumulative effects on human health and safety given their geographic distance from the Proposed Project and type of development. Moreover, to the extent applicable, all of the identified projects would be required to comply with Human Health and Safety regulations independently. Accordingly, the Preferred Action Alternative is not anticipated to have a significant cumulative effect on human health and safety.

4.3.10 Utilities and Supporting Infrastructure

4.3.10.1 Electricity

Like the Proposed Project and Connected Actions, all of the current and reasonably foreseeable actions in Table 4.2-1 that will use electricity, such as the residential, commercial, and mixed use developments, are located in NYISO Load Zone C. Except for the specific transmission upgrades that National Grid would make to provide electrical service to the Proposed Project, these actions in Table 4.2-1 would use the same electric supply and infrastructure as the Proposed Action and Connected Actions.

While Load Zone C currently has sufficient capacity for the initial stages of the Proposed Project, and the other actions in Table 4.2-1 that would be constructed in the short term, demand associated with Fabs 3 and 4 would exceed locally generated Load Zone C electricity supply by 2041. Demand associated with the actions in Table 4.2-1 have comparatively modest electricity requirements relative to the Proposed Project and are not likely to accelerate demand-side exceedance of current, locally generated electricity supply or appreciably exacerbate any potential future supply deficit, which would be driven primarily by the Proposed Project's future electricity needs. As explained in Section 3.10 (Utilities and Supporting Infrastructure), future demand and supply-side electricity challenges are being addressed by the relevant regional electricity planning authorities. Accordingly, additional electricity demand associated with the actions in Table 4.2-1 will not meaningfully alter the magnitude of the Preferred Action Alternative's effect on electricity resources, which would remain significant, but not adverse, due to ongoing regional and statewide electricity planning processes.

4.3.10.2 Natural Gas

Like the Proposed Project and Connected Actions, all of the current and reasonably foreseeable future residential, commercial, and mixed-use projects identified in Table 4.2-1 are in National Grid's Upstate New York Service Area. Except for the specific natural gas supply upgrades that National Grid would implement to provide the Proposed Project with natural gas, at least some of these other projects would use the same gas supply infrastructure and system as the Proposed Project and Connected Actions. As discussed in Section 3.10 (Utilities and Supporting Infrastructure), National Grid and the State of New York are pursuing initiatives focused on transitioning away from use of natural gas such that it is reasonable to assume that at least some of the new commercial, residential, and mixed use developments constructed in National Grid's Upstate New York Service Area would not be connected to natural gas service at all or would transition to electricity at some point in the foreseeable future.

Section 3.10 (Utilities and Supporting Infrastructure) discusses the cumulative effect that the Proposed Action would have on natural gas supply and infrastructure in National Grid's Upstate New York Service Area over time, because National Grid's system maintenance and planning efforts already include projected future growth and demand in the Service Area with and without the Proposed Project and Connected Actions. Because National Grid's planning process takes into account past, present, and reasonably foreseeable future demands for natural gas, the cumulative impact of the Preferred Action Alternative on natural gas supply and infrastructure is not anticipated to be significant.

4.3.10.3 Water

Like the Proposed Project and Connected Actions, all of the residential, commercial, and mixed-use developments identified in Table 4.2-1 are located in the OCWA service area. With the exception of infrastructure that OCWA would construct specifically to provide fresh water to the Proposed Project, the residential, commercial, and mixed-use developments identified in Table 4.2-1 would utilize the same water supply system as the Proposed Action and Connected Actions. As with natural gas, the impact analysis for water in Section 3.10 (Utilities and Supporting Infrastructure) is based on regional planning efforts that already account for past, present, and anticipated future development and growth demand, including the residential, commercial, and mixed use developments identified in Table 4.2-1. Because the analysis of the Preferred Action Alternative's impact on water supply and infrastructure in Section 3.10 (Utilities and Supporting Infrastructure) is already a cumulative effects analysis, and the impact of the Preferred Action Alternative on water supply and infrastructure is not anticipated to be significant, the cumulative effect of the Preferred Action Alternative on water supply and infrastructure also is not anticipated to be significant.

4.3.10.4 Sanitary Wastewater

The Proposed Project and Connected Actions would be located in the OCDWEP Oak Orchard WWTP Service Area. The Proposed Project and Connected Actions would use the same wastewater system as several of the actions in Table 4.2-1 that are located in the same Service Area, including the Clay Marketplace Development District, Widewaters Development, White Pine Science and Technology Park, Great Northern Mall Redevelopment, a car wash, and several other retail, residential, and mixed use developments that together involve the construction of more than 1,500 apartment units. Section 3.10 (Utilities and Supporting Infrastructure) discusses the OCDWEP planning process, which is intended to ensure that adequate wastewater services are provided for all of these anticipated future developments in the Service Area.

OCDWEP intends to construct substantial additional wastewater infrastructure to accommodate the future needs of the Service Area. Accordingly, the incremental impact of the Preferred Action Alternative on wastewater treatment capacity is not anticipated to be significant.

4.3.10.5 Broadband Internet Connectivity Capacity

The Proposed Project and Connected Actions would use the existing fiber infrastructure in the Onondaga County coverage area. Table 4.2-1 includes several residential, commercial, and mixed-use developments that likely also would use the same broadband network as the Proposed Project and Connected Actions.

Fiber infrastructure in Onondaga County supplies broadband service to over 95 percent of the County. This infrastructure is extensive and generally unconstrained. The future residential, commercial, and mixed-use development in the Onondaga County coverage area are anticipated to take place in locations that readily can be connected to broadband services. When added to the current and anticipated future broadband needs of the residential, commercial, and mixed-use developments in Table 4.2-1, the incremental effects of the Preferred Action Alternative are not anticipated to be significant.

4.3.11 Transportation

Section 3.11 (Transportation and Traffic) already evaluates the potential cumulative impact of the Proposed Project and Connected Actions with reasonably foreseeable actions. Specifically, the TIS evaluates the development of all reasonably foreseeable past, present, and future No Action transportation activities and the combined effect of roadway volumes from direct and in-direct (including induced growth effects) of the Preferred Action Alternative. It also evaluates, the cumulative effect of the most expansive proposed mitigation measures.

With the implementation of the recommended transportation mitigation measures, potential significant adverse transportation effects posed by the Preferred Action Alternative and the residential, commercial, and mixed-use developments would be mitigated and/or avoided to the maximum extent feasible. By 2041, all significant impacts along freeway segments would be mitigated by the Preferred Action Alternative with Recommended Mitigations. In addition, all significant impacts at intersections would be mitigated by the Preferred Action Alternative with Recommended Mitigations except at five intersections. These five intersections would be partially unmitigable due to the significant number of improvements already presented by the Preferred Action Alternative with Recommended Mitigations and the significant geometric constraints to implement additional improvements.

4.3.12 Noise and Vibration

There are three sources of noise from the Proposed Project: construction, operation, and traffic generated. Construction could also generate vibration.

Given the geographic location and potential sources of noise associated with the Projects identified in Table 4.2-1, there is only one project that is likely to have cumulative site-based noise effects. This is the White Pine Science and Technology Park. The specific commercial/ industrial uses(s) for this site have not been determined and thus the nature and extent of the operations of specific companies that would ultimately elect to locate there is unknown. Assuming some Micron suppliers elect to locate at this location there could be additional noise emissions associated with those operations. There would also likely be cumulative noise associated with construction of the proposed development(s). However, because the anticipated timing and means of construction for these developments is unclear, the precise levels of cumulative construction noise and vibration they would generate at any given point in time is unknown. Similarly, because the anticipated operational noise profiles of any end uses also is unknown, the precise amount of cumulative operational noise is unknown, except that the operational noise of each use eventually located at that site would proportionally add to operational noise of the other cumulative actions that are operating within the study area. Construction and operation of the Proposed Project and all cumulative actions would be subject to local noise ordinances in Clay and Cicero (see Section 3.12, Noise and Vibration), which would serve to limit the effects of cumulative noise impacts.

As for those projects identified in Table 4.2-1 that could have cumulative effects with the Proposed Project on traffic noise, the TIS already evaluates the cumulative impact of the Proposed Action on traffic noise levels over time considering all past, present, and reasonably foreseeable cumulative actions. In addition, the proposed traffic mitigation ultimately implemented by the relevant State and federal agencies, would increase the Proposed Project's cumulative traffic-related noise impacts over time. Table 4.3-1 illustrates the effects on traffic noise associated with incorporating Traffic Mitigation Scenario C, which incorporates all the measures in Scenarios A and B. In 2031, Traffic Mitigation Scenario C would result in an increase in the number of significantly affected receptors over the unmitigated Preferred Action Alternative of 25 percent during the AM Peak Traffic Period, and 45 percent during the PM Peak Traffic Period. In 2041, Traffic Mitigation Scenario C would result in an increase in the number of significantly affected receptors over the unmitigated Preferred Action Alternative of 13 percent during the AM Peak, and no change during the PM Peak.

Accordingly, the Proposed Project could have a potentially significant cumulative effect on traffic noise.

Table 4.3-1 Summary of Predicted Effect of Cumulative Traffic Mitigation Scenario C on Traffic Noise Impacts[1]

Sensitive Receptor Type	2031 Preferred Action	2031 Traffic Mitigation Scenario C	2041 Preferred Action	2041 Traffic Mitigation Scenario C
AM Peak Traffic Period				
Residences	185 / 104 = 289	210 / 139 = 349	228 / 258 = 486	248 / 296 = 544
Other[2]	21 / 6 = 27	23 / 22 = 45	29 / 23 = 52	33 / 31 = 64
TOTAL	**206 / 110 = 316**	**233 / 161 = 394**	**257 / 281 = 538**	**281 / 327 = 608**
PM Peak Traffic Period				
Residences	206 / 75 = 281	226 / 173 = 399	230 / 342 = 572	251 / 285 = 536
Other[2]	31 / 5 = 36	37 / 24 = 61	31 / 23 = 54	38 / 38 = 76
TOTAL	**237 / 80 = 317**	**263 / 197 = 460**	**261 / 365 = 626**	**289 / 323 = 612**

[1] Reported Data is number of exceedances of 66 dBA / number of 66 dBA or more = Total Impacts
[2] Other includes medical facilities, parks, places of worship, recreation areas, Section 4(f) sites, schools, crossings, offices, restaurants, hotels and motels.

4.3.13 Visual Effects and Community Character

Compared to the projects identified in Table 4.2-1, the Proposed Project is anticipated to be the most significant driver of the visual and community character effects in the study area identified in Section 3.13 (Visual Effects and Community Character). In addition, because the actions would have a cumulative effect, where relevant, the assessment also considers potential effects outside of this study area (e.g., effects of the Connected Actions and effects of induced population growth). Therefore, for purposes of this cumulative analysis, the study area extends roughly to the Village of Central Square, New York and the Three Mile Bay Wildlife Management Area to the north, the Cicero Swamp Wildlife Management Area to the east, Syracuse Hancock International Airport to the south, and the village of Moyers Corners, New York to the west. The visual quality and community character of the study area varies widely from dense, urbanized areas, to suburbs, and rural forested and agricultural lands.

Projects discussed in Table 4.2-1 and located in the study area consist primarily of new commercial and residential development, as well as transportation improvement projects. These projects would not directly impact designated aesthetic resources, as defined in Section 3.13 (Visual Effects and Community Character); however, there is the potential that these projects might be visible from designated aesthetic resources. Given that each of these projects would undergo its own environmental review and permitting, and that the private development projects would be subject to local zoning codes, which regulate developments for consistency with the community, it is not anticipated that these projects would impair the use or enjoyment of designated aesthetic resources. Therefore, there would be no significant aesthetic impact on designated aesthetic resources.

New structures, development, and transportation projects would change the visual character of the study area in different ways and to different degrees. New development could include infill development, rehabilitation of existing structures, and new development on previously undeveloped land. A variety of residential structures and building forms could be utilized to meet future housing needs, including multi-family, townhomes, and single-family. Similarly, non-residential development could be of many forms. Uses and buildings could be new to a particular area and built on previously undeveloped land, could be redevelopment of previously developed sites, or could consist of infill development. Local jurisdictions would be responsible for reviewing and approving future development in a manner consistent with their local land use plans and regulations, which typically govern setbacks and height, as well as landscaping and architectural design. In turn, these reviewing agencies would exert a high degree of control over the potential future visual characteristics of new development.

The transportation improvements identified in Table 4.2-1 include transit system improvements, small intersection and roadway segment improvements, the widening of roadways, construction of new interchanges and signals, and the removal of the elevated I-81 in downtown Syracuse. As such, these improvements would range from barely noticeable to those that represent a profound visual change, such as the I-81 project.

Because the Preferred Action Alternative would not result in any significant adverse aesthetic impacts, the incremental cumulative effect is also not anticipated to be significant.

Certain cumulative actions, including the White Pine Science and Technology Park, which is directly south of the Project Site, would be visible from some of the same viewpoints studied for the Preferred Action Alternative. The cumulative visual effects to public viewpoints where both projects would be visible would be like those described in Section 3.13 (Visual Effects and Community Character) and would continue to be most prominent from viewpoints closest to the sites, with visual effects becoming less apparent with greater distance.

The cumulative effect of the Preferred Action Alternative would result in cumulative changes to community character based on the combination of visual effects with other effects described in the EIS, such as increased traffic and noise, and effects of induced growth. However, these changes would be consistent with community character as expressed in local land use regulations, policies and plans, including the Onondaga County Comprehensive Plan, the Town of Clay's Northern Land Use Study, and the Town of Cicero's Comprehensive Plan goal of supporting economic growth.

4.3.14 Community Facilities, Open Space, and Recreation

This assessment provides a qualitative review of the potential effect of the cumulative demand on the operation of police, fire, EMS, and healthcare facilities, as well as schools, in terms of staffing and facility capacity, and/or equipment.

4.3.14.1 Community Facilities

The ongoing and reasonably foreseeable future actions presented in Table 4.2-1 include a mix of residential and commercial projects which can be expected to place some additional demand on community facilities, including police, fire, EMS, health care facilities, and schools; however, none of these effects are expected to meaningfully alter or amplify the effects of the Preferred Action Alternative because the Proposed Project and Connected Actions are by far the most significant drivers of the potential effects on community facilities.

As detailed in Section 3.14 (Community Facilities, Open Space, and Recreation), the Preferred Action Alternative, particularly its induced growth, would generate additional demand for police, EMS, health care facilities, and schools, but these effects are not expected to result in significant adverse impacts. None of the projects identified in Table 4.2-1 are anticipated to significantly increase this demand and, in some cases, are already accounted for in the analysis of induced growth.

Most fire services throughout the five-county region are volunteer-based and therefore, as discussed in Section 3.14 (Community Facilities, Open Space, and Recreation), demand for fire services due to the Preferred Action Alternative could have a significant effect on local volunteer fire departments. None of the projects identified in Table 4.2-1 are anticipated to significantly increase this demand and, in some cases, are already accounted for in the analysis of induced growth. Therefore, the cumulative impact of the Preferred Action Alternative on the provision of fire services would be the same as identified in Section 3.14 (Community Facilities, Open Space, and Recreation) and would be mitigated through the increase in the tax base for paid departments and for local volunteer fire departments depending on the particular local service provider and the amount of cumulative growth realized in the local areas. Without knowing exactly where population increases would happen, it is impossible to pinpoint the exact locations of the cumulative effects or increases in tax base.

4.3.14.2 Open Space and Recreational Resources

Some of the proposed projects identified in Table 4.2-1 could gradually increase the number of people seeking to attend and benefit from open space and recreational resources in Onondaga County over time. However, the Town of Clay alone is home to approximately 28 neighborhood parks and, as shown in Figure 3.14-5, Onondaga County is home to numerous other open spaces, including various nature preserves, parks, and recreation areas. Induced residential growth also would be anticipated to contribute to property taxes and other fees that would support the maintenance of parks and recreational resources within the County, should any become close to capacity. Therefore, none of the projects identified in Table 4.2-1, when cumulatively evaluated with the Preferred Action Alternative, are anticipated to result in significant adverse effects on open space and recreational resources.

Some traffic improvements projects listed in Table 4.2-1 (specifically those affecting U.S. Route 11 and I-81 north of NYS Route 31 would temporarily affect the Snow Owls Snowmobile Trail). It is expected that the trail would be reestablished along the new rights-of-way following the close of the construction period, and further impacts to the trail from any of the projects identified in Table 4.2-1 are not anticipated. Cumulatively, the Preferred Action Alternative would contribute to the effects on the trail. As discussed in Section 3.14 (Community Facilities, Open Space, and Recreation), a section of the Snow Owls snowmobile trail will be permanently closed as a result of construction and operation of the Preferred Action Alternative, and temporarily closed as a result of certain OCWA work.

The potential also exists for certain traffic improvements identified in Table 4.2-1 to encroach slightly onto recreational resource property such as Santaro Park and the Hamlin Marsh; however, these encroachments would be negligible and would not affect the use of the land.

Given the foregoing, the cumulative impacts of the Preferred Action Alternative is anticipated to be substantially similar as those described in Chapter 3 and would not be significant.

4.3.15 Socioeconomic Conditions

This section considers potential cumulative effects on population demographics, housing, displacement and relocation, jobs and economic activity, and the fiscal health of communities. It uses the same geographic area as presented in Section 3.15 (Socioeconomic Conditions), which includes the Towns of Clay and Cicero (see Figure 3.15-1) and the five-county region (see Figure 3.15-2). The cumulative effects assessment utilizes planned project information detailed in Table 4.2-1 as well as growth projections from the SMTC.

4.3.15.1 Population and demographics

To assess the potential magnitude of cumulative population effects at a community level, this assessment utilizes ranged estimates of cumulative household growth at the town and county levels based on SMTC growth projections for the Syracuse Metropolitan Planning Area (MPA), which is inclusive of known planned projects such as those in Table 4.2-1, as well as residential growth projections for the regional study area from the 2022 REMI Study. As shown in Table

4.3-2, several towns within Onondaga County could experience household growth exceeding 10 percent of Census ACS 2019-2023 household estimates. The Towns of Clay, Cicero, Dewitt, and Lysander could see an increase of over 20 percent compared to current household estimates.

Table 4.3-2 Cumulative Household Growth Projections by County and Select Municipalities Exceeding 10 percent of 2023 Household Estimates

Geographic Area	Background Household Growth by 2041	Preferred Action Alternative Induced Household Growth by 2041 (High-End Estimate)	Cumulative Household Growth by 2041 (High-End Estimate)	Cumulative Household Growth as a Percent of 2023 Household Estimates
Onondaga County	9,907	23,518	33,425	17.1%
Town of Camillus	419	996	1,415	13.1%
Town of Clay	1,629	3,866	5,495	21.8%
Town of Cicero	989	2,348	3,337	26.4%
City of Syracuse	3,189	7,570	10,759	18.1%
Town of Dewitt	619	1,471	2,090	20.2%
Town of Elbridge	79	186	265	11.3%
Town of Lysander	587	1,394	1,981	22.0%
Town of Manlius	614	1,459	2,073	14.9%
Town of Marcellus	101	238	339	12.8%
Town of Onondaga	475	1,126	1,601	18.5%
Town of Tully	32	76	108	10.6%
Town of Van Buren	337	800	1,137	17.6%
Cayuga County	319	2,562	2,881	9.2%
Cortland County	182	1,473	1,655	8.8%
Madison County	375	2,382	2,757	10.8%
Oswego County	987	4,561	5,548	11.8%

Communities within the region have not experienced population growth of this magnitude since the 1950s and 1960s; the region's overall population has grown by only 3 percent since 1970. The economic activities generated by planned and foreseeable future projects would generate new employment opportunities that would attract and retain working-age households, including young families, which has been a diminishing cohort in many regional communities. With greater employment opportunity there is also greater opportunity to achieve a higher income. The Preferred Action Alternative would be a major contributor to this beneficial cumulative effect on population and demographics.

4.3.15.2 Real Property and Housing

Residential and Business Displacement

The projects identified in Table 4.2-1 would result in some residential and business displacement, including those resulting from transportation improvements in the study area—but it would not be of an amount that would substantively alter the demographics of a community, and residents and businesses would have greater access to goods and services from growth in commercial businesses. Similarly, the Proposed Project's induced growth could result in some residential and business displacement. While specific locations and types of displacement are not yet known, the displacement is expected to be similar in nature to that of past, present, and reasonably foreseeable future projects and consistent with development patterns experienced within growing communities. Therefore, the Preferred Action Alternative is not anticipated to result in a significant adverse cumulative effect on residential and business displacement.

Housing

Planned projects such as the Great Northern Mall Redevelopment and District East (Shoppingtown Mall) are early evidence of a market reacting to anticipated future housing demand. These planned projects would increase housing supply within communities that are predicted to experience induced growth from the Proposed Project and therefore may serve to reduce rent pressures within the local and regional study areas. As detailed in Section 3.15 (Socioeconomic Conditions), the Proposed Project's induced population alone would be large enough to alter local and regional housing markets. Prior to the introduction of additional new housing supply, increased housing demand could lead to temporary increases in housing costs for renters and buyers, and potential short-term significant adverse impacts within the local study area due to rent increases and the potential displacement of populations who would not be able to afford rent increases. Even with the provision of additional housing from projects identified in Table 4.2-1, in the short-term, there still could be a significant adverse cumulative effect on housing costs and potential residential displacement within the local study area. However, over time, the production of additional housing associated with the planned projects in Table 4.2-1, including affordable housing, would avoid the potential for long-term significant adverse effects due to rent increases.

4.3.15.3 Economic Development, Labor, and Employment

Economic Development

The projects identified in Table 4.2-1 will generate new economic activity in the five-county region, facilitating the growth of industries and related commercial and residential development. The developments shown in Table 4.2-1 introduce uses that would reinforce and capitalize upon economic growth induced by the Proposed Project. Therefore, the Preferred Action Alternative in the context of reasonably foreseeable future actions would contribute to a cumulative beneficial effect on economic development.

Labor and Employment

The projects identified in Table 4.2-1 would generate labor demand and employment opportunities throughout the region in a variety of industry sectors. These projects' construction and operational activities would support regional supply chain businesses, and the growth in economic activity would increase housing production and household spending, leading to additional labor demand in a variety of sectors that serve workers' and residents' day-to-day needs. SMTC projects that economic activity associated with reasonably foreseeable future projects, in combination with the Proposed Project and its induced growth, would result in approximately 328,500 jobs in Onondaga County by 2040, nearly a 59,000-job increase over 2020 employment (including a nearly 22,000-job increase within the Towns of Clay and Cicero). The Preferred Action Alternative would be a major contributor to this beneficial cumulative effect on labor and employment.

4.3.15.4 Local Governments and Taxing Districts

The projects identified in Table 4.2-1 would generate new revenues for local governments and schools that will offset incremental costs associated with serving new residents, workers, and businesses associated with the Proposed Project. These other projects include not only residential development, but commercial development that tends to offset higher municipal costs associated with household growth. In addition, planned residential development includes a large amount of multifamily housing, presenting municipal service efficiencies through co-location and reducing the marginal cost associated with the provision of services. The induced growth resulting from the Preferred Action Alternative would also include growth in businesses and households, generating revenues that would offset incremental municipal costs. Therefore, the Preferred Action Alternative's contribution to cumulative effects on local governments and taxing districts would not result in a significant adverse impact.

4.3.16 Environmental Justice

While none of the projects identified in Table 4.2-1 would be located in a low-income or minority community or DAC, certain reasonably foreseeable housing, retail commercial, industrial, roadway improvement, transit improvement, regional trail network improvement, and infrastructure improvement projects may be located near a low income community or minority or DAC and therefore have the potential to adversely affect it. For example, development of the White Pine Science and Technology Park could impact one of the low-income or minority communities within the Section 3.16 (Environmental Justice) study area. However, any cumulative impact would be dependent on the nature and extent of ultimate development at the White Pine Science and Technology Park.[166] Moreover, given that the Proposed Project itself is not anticipated to have a significant adverse effect on any of these communities given its geographic distance as well as avoidance, minimization and mitigation efforts across resource areas, the Proposed Projects' potential for cumulative impacts with the White Pine Science and Technology Park on low-income and minority communities is not expected to be significant.

Notably, however, many of these projects identified in Table 4.2-1 would have anticipated benefits for environmental justice communities, including the provision of affordable housing, investment in low-income or minority communities and DACs, and improved transportation and infrastructure.

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[166] As detailed in Section 3.16 (Environmental Justice), the closest DACs to the Proposed Project is five miles south in the North Syracuse area.

As discussed in Section 3.16 (Environmental Justice), none of the Preferred Action Alternative's significant adverse impacts would result in disproportionate impacts on low-income or minority communities or DACs. Therefore, the Preferred Action Alternative would not cumulatively contribute to any disproportionate effects on low-income or minority communities or DACs that may occur from the other present and reasonably foreseeable projects.

5.0 OTHER CONSIDERATIONS REQUIRED BY SEQRA

This section addresses other SEQRA requirements by evaluating whether the Preferred Action Alternative would result in any unavoidable significant adverse environmental effects or irreversible and irretrievable commitments of environmental resources.

5.1 UNAVOIDABLE SIGNIFICANT ADVERSE EFFECTS

SEQRA requires agencies to identify any "adverse environmental impacts that cannot be avoided or adequately mitigated if the proposed action is implemented" (6 NYCRR § 617.9 (b)(5)(iii)(b)). A significant adverse impact is considered "unavoidable" if there are no reasonably practicable mitigation measures to eliminate the impact, or if there are no reasonable alternatives to the proposed project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

As summarized in Section 3.17 (Summary of Effects), the Preferred Action Alternative would have several significant environmental effects, and several of these effects could reasonably be reduced below the level of significance through implementation of identified mitigation measures. However, implementation of the Preferred Action Alternative would result in some unavoidable significant effects that cannot reasonably be avoided or mitigated below the level of significance.

Water Resources

As explained in Section 3.3 (Water Resources), the Preferred Action Alternative would have significant adverse effects on wetland resources. Despite that the Proposed Project has been designed to avoid wetland impacts and loss to the maximum degree practicable, implementing the Proposed Project will nevertheless necessitate the permanent loss of approximately 193.38 acres of Federal jurisdictional wetlands (approximately 174.77 acres of which are State jurisdictional wetlands), and approximately 10.5 acres of non-jurisdictional wetlands at the Micron Campus, Rail Spur Site, and Childcare Site, along with the ecosystem services those wetlands currently provide. Micron, the USACE and NYSDEC are currently developing a mitigation plan as a part of the CWA Sec. 404 permitting process, which will include compensatory mitigation requirements to offset the loss of wetlands from implementation of the Proposed Project by creating and preserving wetlands (at a ratio of two acres or greater of created wetlands to each acre that is lost) within the watershed of the Proposed Project. Despite these significant mitigation measures, the loss of wetlands at the Micron Campus and Rail Spur Site is considered to be an unavoidable significant adverse impact.

The Preferred Action Alternative also would have significant effects on localized surface water and stream resources despite the implementation of mitigation measures. See Section 3.3 (Water Resources). As a result of the construction of the Proposed Project, most of the existing stream channels currently located in what would become the Micron Campus Site and Rail Spur Site would be lost. Loss of these surface water and stream resources is considered an unavoidable significant impact of the Preferred Action Alternative.

Biological Resources

Construction of the Proposed Project and Connected Actions would result in significant adverse effects on biological resources. This would include significant adverse effects on Federal and State listed threatened and endangered species, or species proposed for listing, including the Indiana bat, northern long-eared bat, tricolored bat, northern harrier, and short-eared owl. While mitigation has been proposed to address the effects of the Proposed Project through the preservation of critical habitat located off of the Micron Campus, the loss of ecological communities, in particular, and the habitat they provide to these species of special concern, is considered to be an unavoidable significant impact of the Preferred Action Alternative.

Climate Change

The GHG emissions that would result from construction and operation of the Proposed Project are expected to be unavoidably significant. Even with significant avoidance and minimization efforts as well as mitigation, GHG emissions associated with operation of the Micron fabs and related facilities will represent an increase in overall GHG emissions in the Five County Area and New York State (see Section 3.7 (Greenhouse Gas Emissions, Climate Change, and Climate Resiliency)). Most of these emissions would be the result of natural gas combustion, energy consumption and process emissions needed for the DRAM manufacturing process. Natural gas combustion, and the resulting GHG emissions, are considered an unavoidable necessity for implementation of the Preferred Action Alternative.

Transportation

As explained in Section 3.11 (Transportation and Traffic), the traffic impacts of the Preferred Action Alternative are anticipated to be significant during construction of the Proposed Project, which is anticipated to be complete and operational in the 2041-2042 time period. See Chapter 2 (Proposed Project and Alternatives). NYSDOT anticipates having all necessary roadway improvements in place by 2031 to mitigate traffic impacts in the County and region. See Section 3.11 (Transportation and Traffic).

The transportation impacts of the Proposed Project would be substantially mitigated if the relevant traffic authorities implemented proposed Traffic Mitigation Scenario C, which would implement a broad array of traffic improvements specifically designed to reduce the severity of the Proposed Project's traffic impacts, including interchanges, ramps, roadways, and operational equipment upgrades. Implementation of these mitigation measures likely would reduce the traffic impacts of the Proposed Project below the level of significance in most affected roadways and intersections. However, implementation of the Preferred Action Alternative would significantly affect traffic at the following five intersections by 2041 regardless of whether proposed Traffic Mitigation Scenario C is implemented: (1) NYS Route 31 and I-81 SB Ramp; (2) NYS Route 31 and NYS Route 481 SB; (3) US Route 11 and NYS Route 31; (4) NYS Route 31 and Lakeshore Spur; (5) South Bay Road and NYS Route 31. These significant traffic impacts are considered unavoidable because mitigation below the level of significance would require impracticable roadway reconfiguration. See Section 3.11 (Transportation and Traffic).

Because it is uncertain whether, or under what circumstances, the proposed Traffic Mitigation Scenario C would be implemented (these measures or similar measures can only be implemented by relevant transportation agencies through separate legal, regulatory, and public processes that are independent from the Lead Agencies and actions considered in this EIS), the Preferred Action Alternative's transportation effects are presented here as potentially unavoidably significant.

Noise

Although noise from construction and operations of the Preferred Action Alternative would be mitigated below significance thresholds primarily through installation of ground-level noise barriers and rooftop enclosures around equipment, the noise effects due to traffic increases associated with the Proposed Project are anticipated to be significant and adverse. See Section 3.12 (Noise and Vibration). Although mitigation will be implemented to the maximum extent practicable, noise associated with traffic cannot be fully mitigated. These unmitigated significant noise impacts are expected to further increase if the recommended traffic measures are implemented. See Chapter 4 (Cumulative Effects).

5.2 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF ENVIRONMENTAL RESOURCES

SEQRA requires an EIS to include evaluation and disclosure of "irreversible and irretrievable commitments of environmental resources" associated with the proposed action should it be implemented (6 NYCRR 617.9 (b)(5)(iii)(c)). "Resources" includes natural and man-made resources that would be consumed, converted, or made unavailable for further uses due to construction and operation of the Proposed Project, whether those losses would occur in the immediate future or over the long term. An "irreversible or irretrievable commitment of environmental resources" refers to impacts or losses that cannot be recovered or reversed. Examples include filling of wetlands, removal of vegetation without replacement, paving over or construction on valuable agricultural soils, use of non-renewable, or non-recyclable materials for construction, and use of fossil fuels in construction or operation of a project.

The irreversible and irretrievable commitment of environmental resources to the Preferred Action Alternative consists primarily of resources committed to the physical construction of Proposed Project facilities (i.e., Micron Campus, Childcare Site, and Rail Spur Site), related utility facilities (e.g., IWWTP, and National Grid electricity substation expansion) and nonrenewable natural gas resources and other resources consumed by project operations.

As explained in Chapter 2 (Proposed Project and Alternatives), the Micron Campus would irretrievably devote approximately 1,000 acres of the 1,377 WPCP and related parcels into approximately five million SF of factory space, associated indoor facilities, and otherwise generally impermeable surface uses. These developable lands would no longer be available for other developments. Wetlands, stream systems, and vegetated areas within the construction area would be irretrievably lost or subsumed in this developed space. In addition, the removal of wetlands on the site would necessitate establishment of mitigation sites through the USACE Section 404 permitting process. These mitigation sites would be dedicated to the purpose of establishing additional wetlands. As described in the EIS, mitigation sites were selected due to existing characteristics and the ability to meet the needs of the identified mitigation such as current or former agricultural fields, forested parcels, and adjacent to existing streams, wetlands or forests. See Appendix F and G. Overall, restoration, re-establishment, or rehabilitation activities targeting stream, wetland, and grassland habitats are expected to enhance the biological and ecological diversity of the mitigation sites.

Construction would involve the permanent removal of soil and replacement with approximately nine million CY of fill. Millions of tons of steel and other construction materials would be irreversibly committed to construction of the Proposed Project in these areas and unavailable for other uses.

Operations would necessitate the use of billions of standard cubic feet of natural gas per year, and, depending on the energy mix used to supply the NYISO grid over the life of the Proposed Project, any portion of electric supply derived from nonrenewable sources would also represent an irretrievable commitment of nonrenewable energy resources to the Preferred Action Alternative. See Section 3.10 (Utilities and Supporting Infrastructure); Section 3.6 (Air Quality); Section 3.7 (Greenhouse Gas Emissions, Climate Change and Climate Resiliency). Though the Proposed Project would utilize and return water to Lake Ontario, which is one of the largest renewable freshwater sources in North America, municipal water supply and wastewater resources would be irretrievably committed to supplying the Proposed Project with fresh water and wastewater delivery, treatment, and disposal. However, a substantial portion of the water supply, and wastewater infrastructure needed by the Proposed Project will be constructed specifically to meet the demands of the Proposed Project. See Chapter 2 (Proposed Action and Alternatives); Section 3.10 (Utilities and Supporting Infrastructure). The resources required to construct these water and wastewater facilities would represent an irretrievable commitment of environmental resources to the Preferred Action Alternative, as would construction of any utility facilities intended for exclusive use by the Proposed Project. These include construction materials associated with OCDWEP's construction of a new IWWTP for the Proposed Project at the OCDWEP's Oak Orchard site, expansion of the National Grid Clay Substation and related power line installation to supply the Proposed Project, and gas line and water line infrastructure needed to supply the Proposed Project.

Raw material inputs needed to manufacture the finished DRAM chips also would represent an irretrievable commitment of resources to the Preferred Action Alternative, as would the resources, facilities, and landfill space required to treat and dispose of the solid waste streams associated with the Proposed Project.

Construction of the Rail Spur Site and Childcare Site similarly would necessitate the irretrievable loss of vegetation, soils, and jurisdictional/non-jurisdictional wetlands, and would occupy developable land that would no longer be available for alternative development. Construction would require the irretrievable commitment of building resources to facilities, roads, loading areas, and impermeable or semi-permeable surfaces that will be unavailable for alternative uses. See Chapter 2 (Proposed Project and Alternatives).

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This section lists the individuals involved in the development of this EIS for the Proposed Project.

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Leon Kolankiewicz	SOLV Technical Support: Wildlife Biology/NEPA
Rupal Patel	SOLV Project Manager/Engineer

7.2 SEQRA LEAD AGENCY – ONONDAGA COUNTY INDUSTRIAL DEVELOPMENT AGENCY

Name	Title
Robert Petrovich	Executive Director

Jeffrey Davis	Barclay Damon, LLP – Outside Counsel
Yvonne Hennessey	Barclay Damon, LLP – Outside Counsel
Robert LaFleur, PG	JMT of New York, Inc. – Project Manager
Christina Minkler, PE	JMT of New York, Inc. – Project Manager
Edward Davidson, PG	JMT of New York, Inc. – Geology, Noise, Air Quality, and Greenhouse Gas Lead
Angie Hernandez, AICP	JMT of New York, Inc. – Land Use, Socioeconomics, and Environmental Justice Lead
Yaicha Winters, PhD, REP	JMT of New York, Inc. – Solid Waste and Human Health and Safety Lead
Nicholas Arnhold, RPA	JMT of New York, Inc. – Historic and Cultural Resources Lead
Andrew Donaldson	JMT of New York, Inc. – Water Resources Lead
Alexandra Carroll, GISP	JMT of New York, Inc. – Biological Resources Lead
Tobi Kester, PLA, AICP, CA, ISA CA – TRAQ	JMT of New York, Inc. – Community Facilities and Visual Resources Lead
Nathan Rahaim, PE, PTOE, RSP1	JMT of New York, Inc. – Transportation Lead
Scott Quinlan, PE	JMT of New York, Inc. – Utilities Lead

7.3 THIRD-PARTY NEPA CONTRACTORS

Name	Company	Title	Degree and Experience	Resource Section
David E.B. Strohm II	Trinity Consultants	National Director, NEPA and Federal Permitting Services	B.S. Meteorology 21 years of experience	EIS Project Manager
Karen Hanley	Trinity Consultants	Managing Consultant	M.S. Biological Sciences; B.S. Biology & Marine Science (Chemistry Minor) 18 years of experience	Overall Document, Human Health & Safety, GIS Analysis, Figure Development
John Cossa	Trinity Consultants	Managing Consultant	Juris Doctor 20 years NEPA, Project Permitting, Natural Resource Development Experience	Overall Document, Introduction, Preferred Action and Alternatives, Utilities and Supporting Infrastructure, Summary of Potential Impacts to Resources, Cumulative Effects, Other Considerations Required by SEQRA

Name	Company	Title	Degree and Experience	Resource Section
Stephen Kang	Trinity Consultants	Senior Consultant	B.S. Chemical and Biomolecular Engineering 6 years of experience	Air Quality; Greenhouse Gas Emissions, Climate Change, and Climate Resiliency
Tama Bucher	Trinity Consultants	Senior Consultant	MBA; B.A. Environmental Studies 10 years of experience	Overall Document, Utilities and Supporting Infrastructure
Jenna Kube	Trinity Consultants	Senior Consultant	M.S. in Environmental Engineering; B.S. in Civil Engineering 5 years of experience	Human Health & Safety
Srusti Maddala	Trinity Consultants	Consultant	M.S. in Cell and Molecular Biology; B.S. in Environmental, Soil, and Water Science; B.S. in Biochemistry 2 years of experience	Document Support
Nina Famichova	Trinity Consultants	Administrative Assistant	PhD Linguistics	Document Support
Shabana Tajwar	AKRF, Inc.	Senior Technical Director	BASc in Chemical Engineering, with Environmental Option 29 years of experience	AKRF Project Management
John Neill	AKRF, Inc.	Senior Vice President	MBA; M.S. in Environmental Studies; B.A. in Economics and Public Policy Studies 28 years of experience	Socioeconomic Conditions; Growth Inducing Effects
Ashley Ley	AKRF, Inc.	Senior Vice President	MUP; B.A. in History 20 years of experience	Geology, Soils, and Topography
Alex Lieber	AKRF, Inc.	Senior Technical Director	MUP; B.A. in History 13 years of experience	Land Use, Zoning, and Public Policy; Community Facilities, Open Space, and Recreation
Corey Block	AKRF, Inc.	Senior Planner	MUP; B.S. in Sustainable Urban Environments 10 years of experience	Community Facilities, Open Space, and Recreation; Visual Effects and Community Character

Name	Company	Title	Degree and Experience	Resource Section
Peter Feroe	AKRF, Inc.	Vice President	MUP; B.A., Public Policy 18 years of experience	Visual Effects and Community Character
Claudia Cooney	AKRF, Inc.	Senior Vice President	M.S. Historic Preservation; B.A. in Modern European Studies 27 years of experience	Historic and Cultural Resources—Section 106 Studies (Architectural Resources)
Elizabeth D. Meade, RPA	AKRF, Inc.	Senior Technical Director	PhD, MPhil, MA, and BA in Anthropology 21 years of experience	Historic and Cultural Resources—Section 106 Studies (Archaeological Resources)
Gwen Sivirichi	AKRF, Inc.	Senior Technical Director	M.S. Marine & Estuarine Environmental Science; B.S. Biology (Geography and Environmental Systems Minor) 16 years of experience	Solid Waste, Hazardous Waste, and Hazardous Materials
Marc Godick	AKRF, Inc.	Senior Vice President	M. E. in Environmental Engineering; B.S. in Chemical Engineering 35+ years of experience	Solid Waste, Hazardous Waste, and Hazardous Materials
Lorianne DeFalco, AICP, LEED Green Associate	AKRF, Inc.	Senior Technical Director	M.S. in Environmental Technology; B.S. in Environmental Design 20+ years of experience	Environmental Justice
Aubrey McMahon	AKRF, Inc.	Senior Technical Director	M.S. in Environmental Policy; B.A. in Environmental Studies 20+ years of experience	Biological Resources
Sandy Collins	AKRF, Inc.	Senior Vice President	M.S. in Biology; B.S. in Environmental Science and Resource Management 40 years of experience	Biological Resources
Jordan Schuler	AKRF, Inc.	Technical Director	MUP; B.S. in Computer Science; B.A. in Urban Design and Architecture Studies 20 years of experience	Environmental Justice, GIS Analysis, Figure Development

Name	Company	Title	Degree and Experience	Resource Section
Shankar Natarajan	Jacobs	Traffic and Transportation - Overall Lead	M.S. Transportation; B.S. Civil Engineering; PE; PTOE; 20 years of experience	Transportation and Traffic Section of EIS; Traffic Impact Analysis (TIS) Report
Dana Crisino	Jacobs	Transportation & Safety Lead	MBA; B.A. in Urban and Regional Studies; B.A. in Geography AICP; 21+ years of experience	Transportation and Traffic Section of EIS; Overall TIS Report document
Zelan Jia	Jacobs	Senior Traffic Engineer	M.S. in Transportation; B.S. in Civil Engineering; PE; PTOE.	Traffic Analysis (VISSIM Task Lead)
Suresh Chenna	Jacobs	Senior Transportation Planner	Masters in Transportation Planning 16 years of experience	Travel Demand Modelling Task Lead
Neetu Choubey	Jacobs	Traffic Engineer	M.S. in Transportation Engineering (Big Data Analytics); M.S. in Urban Transportation Planning; B.S. in Civil Engineering; PE 7 years of experience	Traffic Analysis (Synchro Task Lead)
Suhasini Kilim	Jacobs	Senior Transportation Engineer	Masters in Civil Engineering; PE, PTOE, RSP1 18+ years of experience	TIS overall document
Ken Lynch	Ramboll	Managing Consultant	Juris Doctor 30 years of experience with Environmental regulations including SEQR, NEPA and natural resource permitting	Water Resources
Ron Chiarello	Ramboll	Senior Project Scientist	B.A. Environmental Science 35 years of experience with Environmental regulations including SEQR, NEPA and natural resource permitting	Water Resources
Kyle Buelow	Ramboll	Senior Project Scientist	M.P.S. in Environmental Resources Engineering; B.S. Natural Resources; CERP, CPESC, CPSWQ	Water Resources

Name	Company	Title	Degree and Experience	Resource Section
			33 years of experience with Environmental regulations including SEQR, NEPA and natural resource permitting	
Steve Blazek	WSP	Senior Vice President	M.S. in Environmental Policy and Management; B.S. in Natural Resources Management 32 years of experience	Overall Document
Paul Stanton	WSP	Senior Vice President	M.S. in Environmental Science; B.S. in Biology 35 years of experience as NEPA Practitioner	Preferred Action and Alternatives, Water Resources
Zahra Sadegh	WSP	Lead Consultant	M.S. Environmental Science; M.S. Agroecology; B.S. Environmental Engineering 9 years of experience	Overall Document, Noise and Vibration
Marla Engel, AICP	WSP	Senior Vice President/Director of Environmental Planning	Master of Regional Planning; B.A. Political Science	Noise and Vibration
Arthur Morrone	WSP	Vice President	M.S. in Atmospheric Physics; B.S. Meteorology 42 years of experience.	Noise and Vibration
Byron Pirkle	WSP	Assistant Vice President	B.S. Marketing 36 years of experience.	Noise and Vibration
Declan Carroll	WSP	Senior Consultant	B.S. Environmental Science 14 years of experience.	Noise and Vibration
Emily Robinson	WSP	Lead Consultant	B.S. in Biological Engineering 10 years of experience.	Noise and Vibration
Yin Myat	WSP	Associate Consultant	B.E. in Earth and Environmental Engineering 3 years of experience.	Noise and Vibration
Alice Lovegrove, ENV SP	WSP	SVP, National Director, Sustainable Infrastructure	M.S. Environmental & Waste Management; B.E. Engineering Science	Air Quality & Greenhouse Gases

Name	Company	Title	Degree and Experience	Resource Section
Edward Tadross, PMP	WSP	Vice President	B.A. Environmental Studies; B.A. Earth Sciences	Air Quality & Greenhouse Gases
Bruce Wattle	WSP	Vice President	B.S. Atmospheric Science	Air Quality & Greenhouse Gases
Elizabeth Schwing	WSP	Lead Consultant	B.S. Chemical Engineering	Air Quality & Greenhouse Gases
Megan Moreen	WSP	Consultant	B.S. Chemical Engineering	Air Quality & Greenhouse Gases
Christy L. Benes	WSP	Senior Consultant - Biologist	B.S. in Zoology 24 years of experience	Water Resources
Charles Harman	WSP	Vice-President	M.A. in Biology; BS in Wildlife Ecology 40 years of experience	Water Resources
Bailey Hickey	WSP	Consultant	B.S. in Environmental Engineering 7 years of experience	Water Resources
Ethan Smolinsky, PE, ENV SP	WSP	Lead Consultant	M.Eng in Transportation Systems; B.S. in Civil Engineering 9 years of experience	Traffic
Adrian Jarrett, ENV SP	WSP	Assistant Vice-President	M.S. Transportation Planning and Engineering; B.S., Business Technology Management 13 years of experience	Traffic
Madison Burdick, PE	WSP	Lead Consultant	B.S. in Civil Engineering 9 years of experience	Traffic
Namratha Murthy, IE	WSP	Consultant	M.S. in Civil Engineering; B.S. in Civil Engineering 5 years of experience	Traffic
Edward Cheng, IE	WSP	Associate Consultant	B.S. in Civil Engineering, Minor in Traffic Engineering 4 years of experience	Traffic
Aryeh Lemberger, AICP	WSP	Senior Vice President	M.S. in Transportation Planning and Traffic Engineering; B.A. in Urban Planning and Geography	Traffic

Name	Company	Title	Degree and Experience	Resource Section
			23 years of experience	
Whitney Fiore	WSP	Technical Director Environmental Science	M.S. Natural Resource Management	Water Resources

7.4 PROJECT PROPONENT – MICRON TECHNOLOGY, INC.

Name	Company	Title	Degree and Experience	Resource Section
Ashley Kunz	Micron Technology	Sr Director, US Expansion Environmental Health and Safety; Project Lead	B.S. Biology; M.S. Industrial Hygiene; MBA Business Administration 21 years of experience	Micron EIS Project Manager, EHS Lead, Overall Document
Carson Henry	Micron Technology	Sr Director U.S. Expansion Strategic Planning	B.S. Chemical Engineering; MBA Business Administration 21 years of experience	Micron New York Project Lead, Operations Lead, Overall Document
Peter Pianoto	Micron Technology	Director, Strategic Program Management	B.S. Chemical Engineering; M.S. Engineering 27 years of experience	Traffic, Chapter 2
Lazaro Gonzalez	Micron Technology	Director, Environmental Health and Safety New York	B.S. Emergency Services; Certificate Project Management 25 years of experience	Utilities, Site Master Plan
Brittany Sanders	Micron Technology	Sr Manager, Environmental Compliance	B.S. Environmental Resource Management; M.S. Environmental Management 29 years of experience	Air Quality, Solid Waste and Hazardous Waste, GHG Emissions, Climate Change and Resiliency, Water Resources, Biological Resources
Jesse McMahon	Micron Technology	Manager, Environmental Compliance	B.S. Geology and Environmental Science; M.S. Environmental Law and Policy 15 years of experience	Air Quality, Water Resources, Geology and Land Use, Biological Resources, Chapter 2
Kailin Schwan	Micron Technology	Sr Environmental Engineer	B.S. Environmental Engineering 12 years of experience	Air Quality
Derek Henderson	Micron Technology	Sr Environmental Engineer	B.S. Chemical Engineering; M.S. Chemistry 30 years of experience	Waste, Wastewater, Chemical and Petroleum Bulk Storage
Hannah Myers	Micron Technology	Environmental Engineer	B.S. Fisheries and Wildlife Management	Natural Resources, Stormwater

Name	Company	Title	Degree and Experience	Resource Section
			12 years of experience	
Katie Birchenough	Micron Technology	Sr Assistant General Counsel Global Operations	B.A.; Juris Doctor 17 years of experience	Counsel, Overall Document
Holli Feichko	Micron Technology	Director, Environmental, Health and Safety Legal	B.S. Environmental Studies and Political Science; Juris Doctor 22 years of experience	Counsel, Overall Document
Steven C Russo	Co-Chair, Global Environmental Practice	Greenberg Traurig, LLP	B.A.; Juris Doctor 35 years of experience	Counsel, Overall Document
James Auslander	Principal	Beveridge & Diamond, PC	B.A. Public Policy; Juris Doctor; Health Policy Certificate 18 years of experience	Counsel, Overall Document

8.0 DISTRIBUTION LIST

This section lists the distribution list of this EIS.

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Tuscarora Nation
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8.3 SEQRA INVOLVED AGENCIES

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New York State Department of State
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New York State Office of Parks, Recreation & Historic Preservation
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Albany, NY 12207

New York State Department of Environmental Conservation
Division of Environmental Permits
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Albany, NY 12233

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Syracuse, New York 13204

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Clay, New York 13041

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Zoning Board of Appeals
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Clay, New York 13041

Mark Marzullo, Chairman
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Cicero, New York 13039

8.4 SEQRA INTERESTED AGENCIES

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City of Syracuse
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NIST hereby certifies that this FEIS represents NIST's good-faith effort to fulfill NEPA's requirements within the Congressional timeline; that such effort is substantially complete; and that, in NIST's expert opinion, it has thoroughly considered the factors mandated by NEPA; and that, in NIST's judgment, the analysis contained herein is adequate to inform and reasonably explain NIST's final decision regarding the proposed federal action.