Draft Generic Environmental Impact Statement
for the
Western New York Science & Technology Advanced Manufacturing Park (STAMP)

Town of Alabama
County of Genesee, New York

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This Draft Generic Environmental Impact Statement (DGEIS) was accepted as complete by the Lead Agency on April 14, 2011. Comments on this DGEIS must be submitted by May 20, 2011 to the contact person listed for the Lead Agency.

DGEIS available at:
www.gcedc.com

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County of Genesee, New York

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ACRONYMS AND ABBREVIATIONS

AED	Automated External Defibrillator
AGC	Annual Guideline Concentrations
ALS	Advanced Life Support
AMD	Advanced Micro Devices
a-Si	Amorphous Silicon
ATR	Automatic Traffic Recorder
BBS	Batavia Bus Service
BMPs	Best Management Practices
BNE	Buffalo Niagara Enterprise
BOD	Basis of Design
BTU	British Thermal Unit
c-Si	Crystalline Silicon
CdTe	Cadmium Telluride
CIGS	Copper-Indium-Gallium-Selenium
CO	Carbon Monoxide
COCS	Cost of Community Services
CPR	Cardiopulmonary Resuscitation
dB	Decibels (Acoustic)
dBA	A-weighted Sound Pressure Level
DGEIS	Draft Generic Environmental Impact Statement
ECL	Environmental Conservation Law
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
ENB	Environmental Notice Bulletin
EPCRTKA	Emergency Planning and Community Right-to-Know Act
EPM	Environmental Procedures Manual
ESDC	Empire State Development Corporation
FAB	Computer Chip Fabrication Facility
FEAF	Full Environmental Assessment Form
FGEIS	Final Generic Environmental Impact Statement
FPD	Flat Panel Display
FPSR	Farmland Protection Strategies Report
FTE	Full Time Equivalent
GCC	Genesee Community College
GCEDC	Genesee County Economic Development Center
GLOW	Genesee, Livingston, Orleans & Wyoming (counties)
GPD	Gallons per Day
GRE	Greater Rochester Enterprise
HAP	Hazardous Air Pollutants
HAZCOM	Hazard Communication
HCM	Highway Capacity Manual
HEPA	High-efficiency Particulate Air

HMIS	Hazardous Materials Inventory Statement
HOV	High Occupancy Vehicle
IDA	Industrial Development Agency
JPA	Joint Permit Application
kW	Kilowatt
L_{dn}	Day-Night Noise Level
L_{eq}	Equivalent Sound Level
LFTC	Luther Forest Technology Campus
LOS	Level of Service
MACT	Maximum Achievable Control Technology
MID	Medical Imaging Display
MSD	Musculoskeletal Disorders
MSDS	Material Safety Data Sheets
MVA	Motor Vehicle Accident
MW	Megawatt
MWp	Megawatt Peak
NAAQS	National Ambient Air Quality Standards
NIOSH	National Institute for Occupational Safety and Health
NO_x	Nitrogen Oxides
NRCS	Natural Resources Conservation Service
NSPS	New Source Performance Standards
NWI	National Wetland Inventory
NY	New York
NYPA	New York Power Authority
NYS	New York State
NYSDAM	New York State Department of Agriculture & Markets
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
NYSECC	New York State Energy Conservation Construction Code
NYSOPRHP	New York State Office of Parks, Recreation & Historic Preservation
NYSTA	New York State Thruway Authority
OSHA	Occupational Safety and Health Act
PDR	Purchase Development Rights
PEM	Palustrine Emergent
PFO	Palustrine Forester
PM	Particulate Matter
POTW	Publicly Owned Treatment Works
POU	Point-of-Use
PSIG	Pounds per Square Inch Gauge
PSNS	Pretreatment Standards for New Sources
PSS	Palustrine Scrub-Shrub
PV	Photovoltaic
PVC	Polyvinyl Chloride
R&D	Research and Development

RACT	Reasonably Available Control Technology
RCG	Reed Canary Grass
RG&E	Rochester Gas & Electric
RGRTA	Rochester Genesee Regional Transit Authority
RIT	Rochester Institute of Technology
ROW	Right(s)-of-way
SEQRA	State Environmental Quality Review Act
SF	Square Feet
SGC	Short-term Guideline Concentrations
SO2	Sulfur Dioxide
SPCC	Spill Prevention Control & Countermeasures
SPDES	State Pollutant Discharge Elimination System
STAMP	Science & Technology Advanced Manufacturing Park
TCSA	Toxic Chemical Substances Act
TIO	Tonawanda, Iroquois, Oak Orchard Complex
TIS	Traffic Impact Study
TPY	Tons per Year
UL	Underwriters Laboratory
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WMA	Wildlife Management Area
WWTF	Wastewater Treatment Facility/ies

1. EXECUTIVE SUMMARY

Overview of the Proposed Action

The proposed action is the construction and operation of the Western New York Science & Technology Advanced Manufacturing Park ("STAMP" or the "Project") on 1,337.20 acres of land in the Town of Alabama, County of Genesee, State of New York (the "Project Site"). The Project Site is located along New York State Highway 77/63, approximately five (5) miles north of the I-90/New York State Thruway in the Town of Alabama (Figure 1-1).

The Genesee County Economic Development Center ("GCEDC" or the "Project Sponsor") is proposing to apply to the Town of Alabama Town Board for a re-zoning of the Project Site to a newly-developed Technology Zoning District. The new re-zoning designation will be established to permit the Project uses, and any necessary off-site road mitigation measures and utility improvements including water, sewer, electrical power, telecommunications, and natural gas.

Pursuant to the New York State Environmental Quality Review Act, Article 8 of the Environmental Conservation Law and 6 N.Y.C.R.R. Part 617 (collectively referred to as "SEQRA"), this Draft Generic Environmental Impact Statement ("DGEIS") has been prepared for STAMP. Provided in this Executive Summary is a brief description of the Project; the Project's purpose, need, and benefit; a summary of the applicable regulatory process; the potential significant adverse environmental impacts associated with the Project; and the proposed measures designed to mitigate such impacts to the maximum extent practicable. In addition, alternatives to the Project, as well as an analysis of the potential positive impacts of the Project, are reviewed as part of this Executive Summary.

Purpose, Need and Benefit of the Proposed Action

The Project's central purpose is to play a significant role in reversing a trend of economic stagnation that has affected the Western New York region in recent years. The need for reversing this trend may be seen locally in 2010 US Census figures indicating declines in population for both the Town of Alabama and Genesee County over the last ten years. The Proposed Action will result in a number of benefits that have the potential to mitigate this trend in a substantial way. Specific anticipated benefits are:

- Create good-paying, 21st century jobs in the local community.
- Reduce the "brain-drain" of young people leaving the community.
- Provide increased revenues to support local community services.
- Provide enhanced utility infrastructure, such as water, sewer, natural gas and broadband.
- Reduce local property taxes.

- Demonstrate sustainable development.
- Create a "place" of pride in the community.

At full build-out, the Proposed Action anticipates the creation of over 9,000 direct full time equivalent (FTE) jobs at the STAMP site and over 7,000 indirect FTE jobs in offsite locations.

In addition, the Proposed Action anticipates a significant reduction in property taxes as follows:

- The Town of Alabama could realize a decrease in the tax rate per $1,000 in value from $1.11 to $0.11.
- Genesee County could realize a decrease in the tax rate per $1,000 in value from $9.82 to $7.97.
- Oakfield-Alabama School District could realize a decrease in the tax rate per $1,000 in value from $23.73 to $16.94.

The Long-Term Land Management Plan described in this DGEIS aims to protect, restore, enhance, and maintain wildlife habitat, headwater wetland and stream habitat, and provide an aesthetically-pleasing environment including outdoor recreation opportunities.

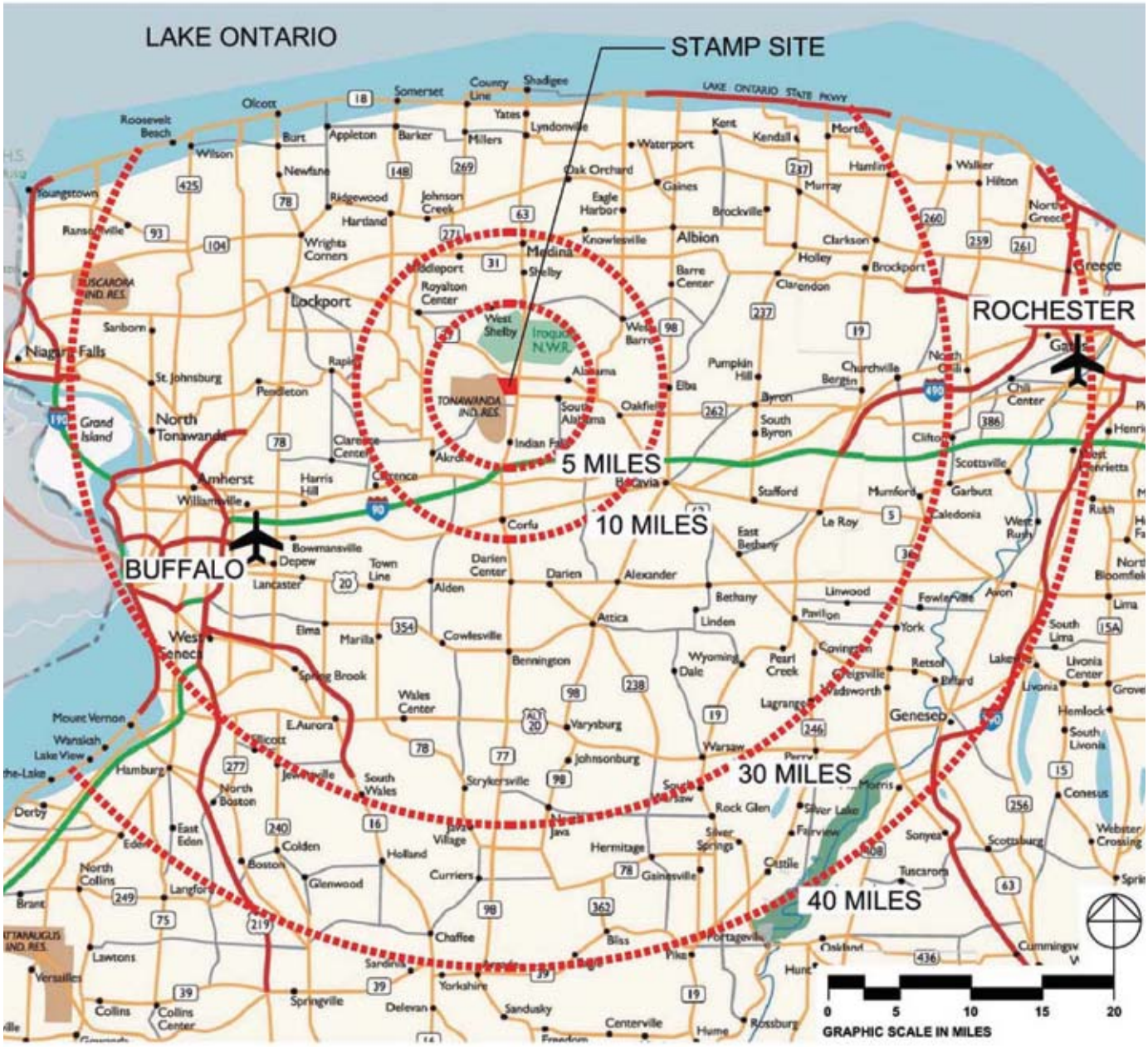
Coupled with the master plan developed to support the Preferred Alternative, the Proposed Action will enable the realization of substantial economic benefits to the community that are centered on an environmentally sound "place" of pride in the community.

SEQRA Process

This DGEIS is intended to facilitate the SEQRA process by providing an initial impact assessment review of the Project for informed public comment and decision-making. GCEDC is acting as Lead Agency and conducting a coordinated review of the Project in compliance with the applicable SEQRA requirements.

Numerous analyses, plans, and support studies have been prepared examining the potential significant adverse environmental impacts of the Project, which are referenced in the text of this DGEIS and attached hereto as appendices. This information provides the basis for informed public input and decision making on discrete topical areas.

Pursuant to SEQRA, the purpose of this DGEIS is to relate the environmental considerations at the inception of the planning process; to inform the public and all involved and interested agencies as early as possible about the Project and its potential significant adverse impacts on the quality of the environment; and to solicit comments which will assist GCEDC, as Lead Agency, in both determining the potential significant adverse environmental impacts associated with the Project and formulating mitigation measures which will minimize and/or avoid such impacts to the maximum extent practicable.



STAMP
Draft Generic Environmental Impact Statement

Figure 1-1
Project Vicinity Map

Town of Alabama, New York

This DGEIS will also set forth conditions under which future actions may be undertaken or approved, including general requirements for any subsequent SEQRA compliance (if required). For example, should a subsequent action be carried out in conformance with the criteria established in this DGEIS, no further SEQRA compliance would be required. Conversely, if the elements of a subsequently proposed action differ from what was reviewed in this DGEIS, or present the potential for its components to exceed the criteria set forth in this DGEIS, then the appropriate environmental review documentation would be required to comply with SEQRA.

It is anticipated that agency and public comment, among other things, may result in adjustments to the parameters of the Project. Affording the agencies and the public such an opportunity accords with SEQRA's mandate that other agencies and the public be included in the environmental review process as early as possible, and will allow for the efficient preparation of such final studies and reports specifically tailored to address adjustments to the Project layout or other substantive issues raised during the comment period.

Project Site

The Project is proposed to be located on 1,337.20 acres of land in the Town of Alabama, County of Genesee, State of New York. The Project Site is located along New York State Highway 77-63, approximately five miles north of the I-90/New York State Thruway in the Town of Alabama, and is bounded by Judge Road on the south, Lewiston Road on the north, NYS Highway 77-63 on the east, and the Seneca Nation of Indians Reservation on the west (Figure 1-2).

The Project Site vicinity is characterized by rural, agricultural land uses, predominant in the Town of Alabama. The Project Site borders the hamlet of Alabama at its northeast corner. It is visually flat to gently rolling and contains a variety of uplands and wetlands; the highest elevation is at its southeast corner and gently slopes to its northeast corner. A subtle ridgeline runs diagonally across the Project Site adjacent to the hamlet of Alabama. The site is characterized by a combination of forest and field vegetation.

The Project Site is currently zoned Agricultural-Residential (A-R) and Land Conservation (L-C) according to the Town of Alabama Zoning Ordinance (1987, amended November 2006). Adjacent properties are largely agricultural in nature, both active and fallow. A small number of rural homesteads are located within and directly adjacent to the Project Site, including certain homes and businesses located within the hamlet of Alabama. A few commercial uses are located within the hamlet, and the Project Site connects to this center. In addition, the westernmost portion of the John White Wildlife Management Area ("John White WMA") is located within the southeast corner of the Project Site. The Project Site is currently accessed by Crosby Road between Judge Road and Lewiston Road.

Technology Zoning District

In order to construct and implement the Project, the Town will have to consider creating a special Technology Zoning District for the Project Site which will govern all future development. The purpose of the newly-created Technology Zoning

District is to accommodate development of the kind of advanced technology manufacturing land uses to be located at the Project Site. The Technology Zoning District will be divided into three (3) sub-districts:

- Technology District 1 – TD1 will allow all uses permitted within TD2 and TD3, plus large-scale advanced technology use, research, development, demonstration, and manufacturing uses.
- Technology District 2 – TD2 will allow all uses permitted within TD3 plus light industrial uses, warehousing and distribution, community and cultural facilities, and technology demonstration facilities.
- Technology District 3 – TD3 will include the northeast corner of the Project Site, which is in close proximity to the hamlet of Alabama's commercial/residential corridor, and shall be limited to smaller buildings which would accommodate retail and professional office-related uses.

The proposed Technology District maximizes the benefits of the Project Site layout, and incorporates smart design techniques to minimize the potential adverse visual impacts of the Project. The proposed Technology Zoning District shall also include a 100-foot wide buffer around the entire perimeter of the Project Site. The 100-foot wide buffer zone, while part of the Project Site, will remain under its current zoning designation to serve as a buffer to all surrounding uses that abut the Project Site. The Project will also provide an additional 300-foot open space buffer along any Residential and/or Agricultural-Residential Districts that abut the Project Site to further insulate these properties. The overall layout and design of the proposed Technology District with its built-in buffering techniques minimizes the potential impacts of the proposed re-zoning.

Summary of Impact Assessment

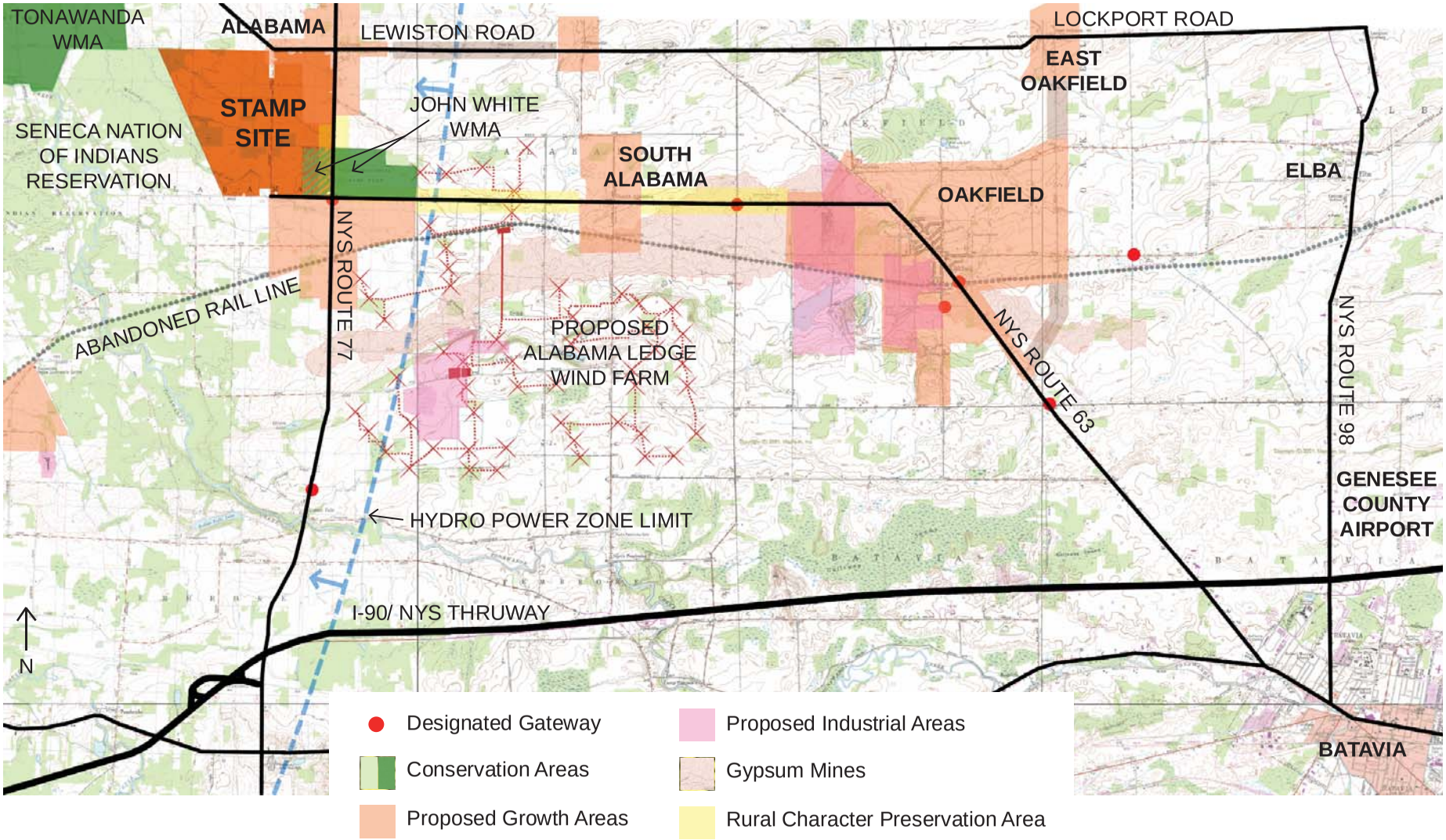
The Project may present potential environmental impacts that are planned to be avoided, minimized, or mitigated to the maximum extent practicable, such that they do not constitute significant adverse impacts to the environment. The following is a summary of the impact assessment provided in this DGEIS.

Geology and Topography

The regional setting of the Project will be unchanged and topography will not be significantly altered by taking a balanced cut-fill approach during construction development. No adverse impact to either bedrock or surficial geologic materials is anticipated, since there will not be any significant removal of these earth materials. Soils will not be adversely impacted during construction or operation, provided that the Best Management Practices (BMPs) described in this DGEIS are implemented and erosion and sedimentation controls regularly maintained.

Water Resources

Implementation of the Project will not have an adverse impact on groundwater. No groundwater will be withdrawn, excavations for buildings will not extend into the groundwater table, and no groundwater discharge is associated with the Project. Stormwater management measures will be employed to detain surface water flow



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Figure 1-2
Project Location Map

(Key Source: Oakfield Alabama Comprehensive Plan)

and allow groundwater infiltration; storage of chemicals and petroleum will be done in strict accordance with all applicable local, State and federal requirements. Best Management Practices (BMPs) will also be employed that minimize impacts to streams and other waters within and without the Project Site during construction, utility installation, and transportation improvement activities.

Surface water resources potentially impacted at the Project Site have been avoided and minimized to the maximum extent practicable. Aquatic resources on the Project Site were identified, evaluated, and considered throughout the design process. The first consideration was to determine if wetland and stream impacts could be avoided entirely. The second consideration was to minimize potential impacts in terms of both quantity and quality to the maximum extent possible. The third consideration was to describe a mitigation strategy that would compensate for all unavoidable impacts.

Design iterations reduced potential wetland impacts from approximately 69 acres to 9.54 acres. In addition to reducing total acreage of impacts, wetland location and quality were taken into consideration. The wetlands potentially impacted are low-to-medium quality wetlands, many of which are isolated and therefore likely not currently regulated. Approximately 112 acres of wetlands, including all high-quality wetlands identified on the Project Site, will be protected as a result of the Project. Wetlands potentially impacted by the Preferred Alternative (Figure 1-3) total 9.54 acres. With the exception of potential temporary impacts to adjacent areas due to development of a recreation trail, no wetlands or adjacent areas likely to be regulated by New York Department of Environmental Conservation ("NYSDEC") under Article 24 of the Freshwater Wetland Act will be impacted.

To compensate for potential impacts to wetlands, ditches, and drainage ways located on the Project Site, more than 112 acres of wetlands, 24,304 linear feet of stream and upland buffer surrounding wetlands and streams will be enhanced, restored, and protected in perpetuity on the Project Site. An additional appropriate amount of wetland, stream, and buffer habitat will be mitigated off-site in the southeastern portion of the Whitney Creek watershed. Mitigation actions will include restoration of wetlands that have been drained; enhancement of existing wetlands through invasive species eradication and control, including planting of native vegetation; establishment of forested stream buffers; and a legal mechanism for permanent protection of all mitigation areas.

Air Resources

The Project is not expected to produce any measurable changes in local or regional climate, nor is a significant adverse air impact anticipated by the proposed construction, operation, or related transportation. Air emissions from the advanced technology manufacturing industry are highly regulated at the State level by NYSDEC and the federal level by USEPA. Facilities locating within the Project Site will be constructed with state-of-the-art emission control equipment which will be subject to applicable permitting requirements and likely go beyond those standards required by the State and federal regulatory agencies.

Terrestrial and Aquatic Ecology

Based on investigations conducted at the Project Site, the Project, with implementation of a Long-Term Land Management Plan, does not pose a potential significant adverse impact to existing terrestrial and aquatic ecologies. The twelve ecological community types present at the Project Site are common and well-established throughout their range, as are the majority of plant and wildlife species identified at the Project Site. Two species observed at the Project Site that are currently listed as threatened in New York State (heartleaf plantain and least bittern) are located in areas that will be protected from impacts associated with site development (Appendix G).

A Long-Term Land Management Plan will be implemented at the Project Site throughout construction and following Project Site development. In addition to the implementation of Best Management Practices (BMPs) and on-site mitigation actions for stormwater and aquatic resources, this long-term management strategy will mitigate for lost wildlife habitat by maximizing ecological functions and services provided on-site, to the watershed, and to the surrounding landscape. The Long-Term Land Management Plan described in this DGEIS aims to protect, restore, enhance, and maintain wildlife habitat, headwater wetland, and stream habitat, as well as provide an aesthetically-pleasing environment including outdoor recreation opportunities.

Technology Industry Health and Safety

The various advanced technology industries include a broad spectrum of manufacturing and assembly activities, each with its own unique requirements for process chemistry, and subsequently, each using a variety of chemicals. The leaders of these industries are pioneering new process chemistries and technologies in efforts to reduce the quantity of chemicals used per unit of production, as well as the toxicity of the chemicals utilized. Such innovation reduces cost, decreases potential impacts associated with chemical use, and allows facilities to more easily comply with State and federal health, safety, and environmental requirements.

With the implementation of the industry health and safety requirements set forth in Section 6.5 of this DGEIS, as well as compliance with all applicable local, federal and State regulatory requirements, future uses at the Project Site will not present an adverse impact to the public and/or workers' health and safety.

Traffic and Transportation

Various improvements are identified in this DGEIS to mitigate to the maximum extent practicable the Project's potential impacts to existing traffic levels and patterns. Although the traffic improvements proposed by the Project typically include traffic signals and turn lanes at intersections, based on preliminary conversations with the New York State Department of Transportation ("NYSDOT"), alternative traffic control such as roundabouts will be considered, and the intersections will be monitored to determine when the improvements should be installed.

Access to the Project Site will be provided by Crosby Road during Phase 1 of the Project's development. It is recommended that the NY Route 77/NY Route 63/Judge Road intersection and the NY Route 77/Ledge Road intersection be



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Figure 1-3
Preferred Alternative

Town of Alabama, New York

monitored for the potential installation of traffic signals during this phase of the Project's development. Before 70% of the Project build-out is achieved, it is recommended that a bypass road be constructed through the Project Site from NY Route 77/63 Overlap just north of Ham Road to NY Route 77 at the existing location of the intersection of Crosby Road. This connector road will provide access to the Project Site, and will allow through traffic on NY Route 77 to bypass the hamlet of Alabama, reducing potential traffic impacts in the hamlet. Designating the bypass road as Route 77 and de-designating existing NY Route 77 though the hamlet of Alabama will be considered. In addition to the connector road, several new site driveways will be constructed as needed and in correlation to the phased development of the Project Site. These site access improvements include two driveways on NY Route 77; two driveways on Judge Road; and two driveways on NY Route 77/63 Overlap (in addition to the bypass road curb cut).

Capacity improvements may be needed at several off-site intersections including:

- NY Route 77/NY Route 63/Judge Road
- NY Route 77/Bloomingdale Road
- NY Route 77/Ledge Road
- NY Route 77/Akron Road
- NY Route 77/I-90 Exit 48A

The timing and necessity of these improvements will be confirmed based on monitoring of the specific traffic needs for future phases of Project development. The full build-out analysis of the Project indicates that a majority of the study area intersections will continue to operate adequately. Since additional mitigation above and beyond the improvements identified for the 70% threshold may be necessary to provide adequate operations at a few locations, it is recommended that a supplemental traffic analysis be conducted once the 70% threshold is reached or when the Project Site generates 1,925 trips during the PM peak hour.

There are a number of potential level-of-service (LOS) degradations (increases in delay at area intersections) that may result from the full build-out of the Project and, in order to view those potential impacts in a conservative manner, are being considered potential unavoidable impacts associated with the Project Site's traffic generation. Nevertheless, with implementation of the proposed traffic improvements set forth in the *Traffic Impact Study* (Appendix I), these potential impacts do not constitute potential significant adverse impacts to the existing traffic levels and/or patterns.

Land Use and Zoning

Implementation of the Project will alter the pattern of existing land uses, transforming vacant, agricultural lands into a modern, advanced technology manufacturing campus. In return for a relatively minimal loss of cropland, the Project will create over 9,000 high-paying technology-related direct jobs at the Project Site and will become a significant net contributor to the local economy. In addition, the Preferred

Alternative master plan has been developed at a low density and physical layout to be in visual harmony with the existing agricultural lands that surround the Project Site.

The existing zoning ordinances do not accommodate the development of the Project. The majority of the Project Site is zoned A-R (Agricultural-Residential), with the southeast corner of the Project Site being part of the John White WMA and zoned as L-C (Land Conservation).

In order to accommodate the Project, the Town of Alabama is considering implementing the following three (3) land use measures to avoid and minimize the potential significant adverse impacts the Project may have on existing land uses and zoning/planning goals:

- Negotiation of an Incentive Zoning Agreement pursuant to which the Project Sponsor, in exchange for providing certain public amenities to the Town (which will inure to the benefit of the community as a whole), will receive a re-zoning of the Project Site into a newly-created Technology District in order to address the Project's unique needs.
- Amendment of the Comprehensive Plan to provide for the development of the Project consistent with the other planning goals of the Town, but accepting the vision of the Project's goal of developing a world-class high technology manufacturing center with a focus on renewable energy.
- Consideration to adopt one or more strategies found in the *Farmland Protection Strategies Report for the Town of Alabama, New York* (Appendix K), which was prepared with the goal of describing and consolidating the potential strategies for the Town of Alabama to evaluate and consider in preserving farm land. The *Farmland Protection Strategies Report* (Appendix K) is provided as a mitigation measure for the loss of farmland associated with the development of the Project Site.

Implementation of these land use mechanisms by the Town will not only mitigate the potential significant adverse impacts the Project may pose to existing land use and zoning, but support the planning goals outlined in the Oakfield-Alabama Comprehensive Plan of providing economic development, preserving agriculture, and providing potable water to appropriate areas of the Town.

Utilities

Water for the Project will likely be supplied from sources located in the Town of Pembroke and Village of Oakfield. A phased approach will be taken in providing water supply to the Project Site. During the first phase of construction, a Route 77 water main connection from Pembroke would be required. At full build-out of the Project, additional improvements will be required in the form of a Maple Street and Galloway Road Water Main, as well as upgrades to the Genesee County, Monroe County Water Authority, and Erie County water systems. With respect to potential wastewater treatment, the Project proposes to construct an on-site wastewater treatment facility with a NYSDEC and New York Department of Health ("NYSDOH")

permitted discharge to Whitney Creek. The projected wastewater flow for the initial phase of the Project is 1,000,000 GPD; for full build-out of the Project, it is 3,000,000 GPD. Based on preliminary discussions with NYSDEC, a discharge to Whitney Creek has been determined feasible based on the projected volume and constituent concentration levels. Thus, the proposed wastewater treatment for the Project would not present a potential significant adverse environmental impact.

National Grid has further determined that adequate electrical power resources exist to supply the projected 185 megawatts (MW) required for the Project at full build-out. Moreover, Verizon has indicated an interest in providing telecommunications to the Project Site. Lastly, the Project will not present a potential significant impact to the renewable energy source of the Niagara Hydro Zone, but users at the Project will nevertheless be required to implement energy-saving building designs and operational features.

Community Facilities

The Project is not expected to result in a significant impact to existing Town of Alabama and Genesee County emergency response services. Additional resources required to provide police and court services for the Project are expected to be insignificant. There are also minimal anticipated adverse impacts to fire and ambulance services. Construction and operational internal fire response capabilities at the Project Site will be coordinated with the local fire and EMS service providers. However, in order to insure proper mitigation for potential impacts to emergency services, an Emergency Services Impact Study will be performed for each technology manufacturing company locating at the Project.

The Project will operate within the guidelines of the GLOW Region Solid Waste Management Committee and will not have any adverse impact on either existing waste management plans or existing facilities.

There will likely be impacts to highway maintenance requirements due to Project-generated traffic. Highways will be monitored to determine actual maintenance requirements over time.ith respect to the Project area's educational institutions, there is expected to be a financial benefit resulting from the Project in the form of increased tax revenues. Such increased tax revenues will offset any potential impacts to community facilities located in the Project area.

Lastly, with respect to existing open space and recreational facilities, a 93.8-acre portion of the John White WMA is proposed to be transferred from NYSDEC to GCEDC in support of the Project. A gateway community center and/or new Town of Alabama Town Hall complex is proposed for a portion of this property. The remaining portion of the John White WMA on the east side of NYS Route 77-63 would not be impacted by the Project. Any loss of wildlife habitat value and incompatible public use opportunities as an indirect result of adjacent developments, as well as the loss of public acreage, would be mitigated by an exchange of lands whereby the NYSDEC would be compensated with lands of equal or greater value and benefit elsewhere.

There are no significant adverse impacts from the Project expected to existing public recreational or open space assets. The abundant natural resources provide ecological resilience to the watershed and the landscape that buffers potential impacts from development of the Project Site. As described in the Long-Term Land Management Plan set forth in Section 6.4.2, public use opportunities will be provided in designated portions of the Project Site and any change in the compatibility of some public use, such as hunting, is buffered by the availability of over 19,000 acres of unaffected public lands nearby. In addition, as described above, an exchange of lands required to transfer the 93.8-acre portion of John White WMA will compensate for potential impacts and changes to public use opportunities. Future use of public recreational areas may increase over current levels with full build-out of the Project Site. Based on the abundant opportunity and the current level of public use, such an increase is not considered a potentially significant adverse impact, and may even result in increased community support and awareness of the public resource.

Community Character

The Project will not result in a potential significant adverse impact to the Town of Alabama's community character. The Project is designed in a campus setting, meaning that development is respectful of and compliments its natural landscape. The Project will also be developed at a low density. In response to community comments, landscape buffers will surround the Project along property lines shared with existing houses, roads, and the hamlet of Alabama in order to maintain existing viewsheds, as well as the rural character of the area surrounding the Project. In addition, a ridgeline that runs southwest of the existing hamlet of Alabama will remain undeveloped to provide visual separation between the hamlet and the Project.

The Project is planned visually to integrate into the existing rural setting in a comfortable, compatible manner. The larger technology manufacturing structures are located on the lower western portion of the Project Site, while the smaller-scale supporting structures are located on the eastern portion of the Project Site to provide a scale transition to off-site farmland. Building materials will be high-quality and will be chosen to reflect the rural agricultural vernacular of the area.

Moreover, implementation of the Project will not result in a significant adverse impact to existing baseline noise levels and will provide a potential significant economic boost to the local and regional economies, while being respectful of the Town of Alabama's existing community character.

Demography

Implementation of the Project has the potential to improve the local and regional demography. By creating quality jobs focused on high technology advanced manufacturing and ancillary development, the exodus of young college graduates in the 20-34 age range from the Genesee County community and Western New York region can be reduced or reversed, serving to stabilize the demographic distribution and retain the intellectual capital produced locally, while maintaining the rural-agricultural aesthetic of the Town of Alabama.

The Project will likely result in some level of increased population in the Village of Oakfield, Town of Batavia, and other communities surrounding the Town of Alabama. It is expected that this increase in population will be in harmony with local land use and comprehensive master plans, and will not constitute a potential adverse impact.

Historic and Archaeological Resources

A *Phase IA Cultural Resource Assessment* for the Project Site was completed (Appendix T). Because construction of the Project would occur in several development phases, a *Phase IA Cultural Resource Assessment* was deemed appropriate for the entire Project Site. The purpose of the Phase IA investigation was to gather information pertaining to the environmental and cultural setting of the Project Site in an effort to determine if any prehistoric or historic cultural resources would be potentially and significantly impacted. This was accomplished through Phase IA literature research, sensitivity assessment, and field reconnaissance. A Phase IB field investigation is currently in-process and will be completed to better assess potential impacts, if any, to existing historic and archaeological resources. Proposed measures to mitigate any potential significant impacts to historic and/or archeological resources found on-site to the maximum extent practicable will be established once the Phase IB field investigation is completed. Mitigation measures, if any, shall comply with the applicable criteria set forth by the New York State Office of Parks, Recreation & Historic Preservation ("NYSOPRHP"), and may include re-alignment of structures, impervious surfaces, and other development features to avoid or minimize potential significant adverse impacts to any on-site historic and archeological resources.

Agricultural Resources

The Project Site has 970.86 acres of cropland, representing approximately 0.65% of the total cropland acreage in Genesee County and approximately 1.7% of the total farmland acres located in Genesee County's Agricultural District No. 2 ("Ag. District No. 2"). Based on available information, approximately 950 acres of the Project Site are currently being used for farming. The total Prime Farmland acres located within the Project Site is approximately 275 acres, representing 0.23% of the total Prime Farmland located in Genesee County and 0.49% of the total Prime Farmland acreage located in Ag. District No. 2.

In order for the remaining portions of the Project Site's cropland acreage to be considered unencumbered Prime Farmland, comprehensive drainage actions either have been completed or may need to be completed subject to NYSDEC and USACE review and approval in light of the presence of wetlands on the Project Site. Some portions of the Project Site may be considered "Prior Converted" (farmed prior to 1985) and therefore exempt from federal and state permitting requirements. Current conversations with the USDA Natural Resources Conservation Service and other regulatory agencies, however, indicate the regulations governing definition/enforcement of "Prior Converted" status are not clearly defined and may be subject to varying interpretation.

Implementation of the Project will result in a potential loss of agriculture use at the Project Site. However, the potential loss of future agricultural use at the Project Site represents less than 1% of the total cropland acres located in Genesee County, and approximately 1.7% of total cropland acres located in Ag District No. 2. In return for this minimal loss of cropland, the Project will create over 9,000 high-paying technology-related direct jobs at the Project Site and will become a significant net contributor to the local economy. In addition, the Preferred Alternative master plan has been developed at a low density and physical layout to be in visual harmony with the existing agricultural lands that surround the Project Site.

A number of factors will further mitigate the loss of agricultural use at the Project Site. Development of the Project will not result in an immediate total loss of agricultural use at the Project Site. The phased development of the Project, coupled with implementation of the Long-Term Land Management Plan described above in Section 6.4.2, will ensure that future development areas will be maintained in their current land use until construction is commenced. As a result, that acreage which is currently being farmed on development areas proposed for the Project Site will continue to be farmed until such time that construction for each respective area is commenced.

In addition, an important tool in mitigating the loss of agricultural use in the vicinity of the Project Site will be the Town of Alabama's implementation of a proactive farmland protection strategy. The *Farmland Protection Strategies Report* ("FPSR") (Appendix K) prepared for this DGEIS sets forth several options for developing an effective farmland protection strategy. The FPSR describes and consolidates potential strategies for the Town of Alabama to evaluate and consider as methodologies to protect farmland located in other areas of the Town.

Unavoidable Impacts

The Project may present certain unavoidable impacts to materials, energy, and agricultural resources, altered habitats for non-endangered plants, animal species, and aquatic resources. However, these impacts are either considered not to constitute potential significant adverse environmental impacts, or will be minimized and/or avoided to the maximum extent practicable as a result of the implementation of the mitigation measures identified in this DGEIS. Furthermore, the substantial financial and community benefits that will result from the Project will greatly offset the incurrence of such impacts.

The Project will represent a permanent impact on approximately 46% of the 1,337.20 acres of land comprising the Project Site. However, over half (54%) of the total acreage will be set aside for the protection of the wetlands, surface waters, ecologically sensitive areas, and recreation and open space areas that exist on the Project Site. Implementation of the master plan illustrated in the Proposed Action set forth in this DGEIS will mitigate the unavoidable loss of 46% of the Project Site's acreage to the maximum extent practicable.

As the Project is developed, the opportunities for future active farming on the Project Site will be lost on an incremental basis. A number of factors will mitigate, however, the loss of agricultural use at the Project Site. For example, development of the

Project will not result in an immediate total loss of agricultural use at the Project Site. The phased development of the Project, coupled with implementation of the Long-Term Land Management Plan, will ensure that future development areas will be maintained in their current land use until construction is commenced. As a result, acreage which is currently being farmed on development areas proposed for the Project Site will continue to be farmed until such time that construction for each respective area is commenced.

In addition, an important tool in mitigating the loss of agricultural use at the Project Site will be the Town of Alabama implementing an appropriate farmland protection strategy from the options described in the *Farmland Protection Strategies Report* ("FPSR"). The FPSR (Appendix K) describes and consolidates potential strategies for the Town of Alabama to evaluate and consider as methodologies for preserving farmland elsewhere in the Town. Although the Project will ultimately result in an unavoidable loss of agricultural use at the Project Site, that loss does not constitute a potential significant adverse impact to the existing agricultural resources located in the Town of Alabama and Genesee County.

The full build-out of the Project may result in an unavoidable alteration of habitats for some non-endangered plant and animal species, as well as an unavoidable loss of wetlands and associated headwater stream habitat. Habitat alteration resulting from the Project, however, will be offset by protection and restoration of key natural area corridors on the Project Site, and abundant habitat for these species immediately adjacent to the Project Site and in the immediate vicinity of the Project Site, including over 19,000 acres of protected conservation lands. Compensation for wetland impacts will be provided by implementation of a mitigation strategy that will enhance, restore, and protect wetlands and streams of equal or greater value on and off the Project Site. Any temporal loss of aquatic resource functions and services will be further offset by the ecological resilience of the surrounding watershed.

There are a number of potential level-of-service (LOS) traffic degradations that may result from the full build-out of the Project. The *Traffic Impact Study* (Appendix I) indicates, however, that improvements proposed by the Project will provide adequate operations at the Project's study area intersections and on the existing road network for the levels of traffic anticipated. With implementation of the proposed traffic improvements set forth in the *Traffic Impact Study* (Appendix I), these potential impacts do not constitute potential significant adverse impacts to existing traffic patterns.

Cumulative Impacts and Induced Growth

The Project is not expected to have any potential significant adverse cumulative impact to the environment, nor provide a potential for a significant adverse inducement of growth to the Town of Alabama. The Project is not interdependent upon or undertaken as a result of (or otherwise dependent upon) any other proposed actions in the area. Moreover, there are no existing, pending, or approved projects in the Town of Alabama or surrounding area that could provide potential significant adverse environmental impacts if considered in conjunction with the Project.

The Project has the potential to induce growth, however, in the Town of Alabama and the surrounding communities in a number of beneficial ways, including employment, housing, and ancillary business opportunities. The development of the Project will result in a significant number of construction workers with seasonal employment being located at the Project Site. The construction trades workers will likely patronize local restaurants, hotels/motels, entertainment facilities and other service providers resulting in a substantial boost in the local and regional economies. The Project is further anticipated at full build-out to provide over 9,000 new, quality jobs. The new jobs created by the Project will help spur an increased demand for existing and new housing.

Throughout the community input process conducted for the Project over the past several years, Town of Alabama elected officials and citizens have voiced considerable opposition to additional residential growth in the Town of Alabama proper. However, neighboring communities, such as the Village of Oakfield and the Town of Batavia, welcome the potential for future residential development.

The Project will likely induce some level of complimentary secondary growth, especially in the area of supply and support enterprises and other high-technology entities. The planned development of the Project Site anticipates the need for these secondary businesses. Specific development areas are provided for such ancillary development within the Project Site with the objective of minimizing traffic and visual impacts outside of the Project Site, consistent with smart growth objectives, especially those outlined in the Genesee County Smart Growth Plan. Additional potential locations for such secondary ancillary development include the Town of Batavia, and Erie, Niagara, and Monroe Counties. Existing urban areas throughout Genesee, Erie, Niagara, and Monroe Counties could significantly benefit from the secondary growth resulting from the Project. Existing buildings with available infrastructure in urban areas could be re-used for industrial development, or retrofit for office space or R&D, all within the constraints of existing allowable land uses.

All All potential induced growth related to the Project shall be consistent with applicable local zoning and community comprehensive master planning requirements. Localities that do not desire such growth related to the Project will have the ability to limit future growth consistent with their comprehensive master planning and zoning efforts, whereas those localities that desire such growth can take appropriate steps to authorize site plan applications allowing construction to proceed. Independent environmental review for off-site projects shall be completed in accordance with SEQRA and will be done for each individual project outside the purview of STAMP.

Alternatives Analysis

Alternatives examined in this DGEIS represent three separate levels of consideration: 1) Regional site selection analysis across Western New York; 2) Site alternatives analysis within Genesee County; and 3) Alternatives for use and layout of the preferred site location.

Conclusions of levels 1 and 2, the regional site selection analysis and the site alternatives analysis within Genesee County are summarized in the Evolution of Alternatives section below.

Following the Evolution of Alternatives section, conclusions of the level 3 site-specific analysis that considered use and layout of the preferred site location are summarized in four separate sections: No-Build Alternative; Existing Zoning Alternative; Cluster Residential Alternative; and Preferred Alternative (also referred to as the "Preferred Master Plan"). These alternatives evaluate the potential scope and range of development of the Project Site for comparative analysis and consideration. Other alternatives were evaluated but discarded as either infeasible or less desirable than the recommended planned development strategy.

Evolution of Alternatives

The basic and overall purpose of the Project is to develop a second shovel-ready site in New York State, located in Western New York, for effective geographic dispersion in conjunction with the Luther Forest Technology Campus (LFTC) located in the eastern part of the state (Saratoga County). The Project will enable New York to better compete for global high technology, advanced manufacturing, and nanotechnology-enabled manufacturing and research and development (R&D) projects. This, in turn, will provide great benefits across Western New York (from Buffalo to Rochester) in terms of long-term economic revitalization and high technology job creation.

The global marketplace requires shovel-ready site development in a campus style setting, where the site under development exceeds 1,000 acres of "greenfield" acreage, to qualify for site location consideration by many large-scale high technology, clean technology, and advanced manufacturing-type facilities. Site Selection magazine recently indicated that there are nearly 150 such sites listed across the United States, many of which are actively under development. Many industry experts have confirmed that New York State must do more to invest in and develop additional site locations to continue progress made in high technology-oriented sectors, as well as maintain the State's global competitiveness.

With this market driven input and the opportunity to build on the success being experienced in nano-sciences, R&D, and nano-oriented manufacturing in the Capital District of New York State, an active strategic initiative was launched, sanctioned, and validated by regional economic development enterprises across Western New York, including the Buffalo Niagara Enterprise (BNE) and Greater Rochester Enterprise (GRE), to actively develop New York's second site in the Western New York region.

A regional site selection analysis was conducted across Western New York relative to a set of design parameters outlined in Section 5.2. It was concluded that no alternative sites exist relative to the macro design parameters noted in Section 5.2, particularly in relation to location of workforce and size requirements. The analysis further concluded that the development of a potential 1,000-acre or greater "greenfield" site in Genesee County best met the Project's basic and overall purpose and established macro design parameters.

Several potential sites were then evaluated within Genesee County in collaboration with engineering, environmental, real estate and advanced technology industry experts. As described in Section 5.2, an enhanced list of design parameters necessary to achieve the purpose of the Project was established to better assess the site viability against local conditions and requirements. Five individual sites including the site illustrated in the Preferred Alternative were evaluated in Genesee County over a period of 15 to 18 months in 2006 and 2007. All sites were able to meet, or come close to the 1,000+ acre "greenfield" size requirement macro design parameter. These sites were located in several towns across Genesee County, including one (1) in the Town of Batavia; three (3) in the Town of Alabama (including the Preferred Alternative); and one (1) in the Town of Elba. The analysis concluded that the Project Site of this GEIS, formerly known as Alabama Site A-3, best met the parameters of the macro and enhanced criteria.

The Project Site offers the optimal combination of factors in terms of low potential impacts to environmental, agricultural, and farmland resources, as well as a strong likelihood for land assembly success. Coupled with the likelihood for the lowest cost of development, given proximity to industrial class utility infrastructure, the Project Site represents a "best fit" to achieve the basic and overall purposes of the Project while developing the Project Site in an environmentally sustainable way.

The following four sections summarize findings of use and layout alternatives explored for the Project Site.

No-Build Alternative

The No-Build alternative considers the future condition and use of the property without construction of the Project. The No-Build Alternative would not remove the Project Site from agricultural use, nor result in an impact to traffic, visual aesthetics, or wetlands. However, the No-Build Alternative will not provide the potential significant financial and public utility benefits to the Town of Alabama as associated with the Preferred Alternative. The Project Site would remain undeveloped and consequently would provide only a minimal contribution to the community tax base.

Existing Zoning Alternative

The majority of the Project Site is zoned Agricultural-Residential (A-R), with a parcel of approximately 93.8 acres currently zoned Land Conservation (L-C, westernmost portion of the John White WMA, west of NYS Route 77). Pursuant to the Existing Zoning Alternative, the Project Site would be subdivided into residential lots under the current Town of Alabama Zoning Law.

Throughout the community input process that has been conducted for the Project over the past several years, Town of Alabama elected officials and citizens have voiced considerable opposition to additional residential development in the Town. Development of significant residential subdivisions and structures would eliminate the natural, open vistas characteristic of agriculturally-based communities. New houses would be easily viewed from existing public roads, and would line streets within the Project Site. The widespread installation of impervious surfaces and lawns would also create inordinate amounts of stormwater loading which would adversely impact local water resources.

Residential development consistent with the existing Town of Alabama zoning requirements could also result in a significant burden being placed on Town of Alabama community services such as fire, police, and ambulance services. According to an August 2010 fact sheet published by the American Farmland Trust summarizing over 20 years of "Cost of Community Services (COCS)" studies, the median cost per dollar of revenue to provide public services to residential land use is $1.16. While this imbalance might be partially offset by incremental residential development, this demonstrates that residential development is typically a net cost to public resources. This net cost is not sustainable without some offsetting form of land use that can serve as a net income to public resources.

Cluster Residential Alternative

The Cluster Residential Alternative would entail development of the Project Site consistent with the master planning requirements of the cluster zoning provisions set forth in the Town of Alabama Zoning Law. Natural areas and open space are the focus of cluster development, and residential lots are requisitely down-sized due to the amount of open space surrounding them (minimum 25% of Project Site).

Development of the Project Site as a cluster scenario would likely require the introduction of Town-scale water and sewer systems to accommodate the closely-spaced residences. A large number of public roads would have to be constructed as well, since an interconnected network of streets would be required to develop the Project Site in a dense manner as allowed under cluster zoning.

Again, throughout the community input process conducted for the Project over the past several years, Town of Alabama elected officials and citizens have voiced significant opposition to additional residential development in the Town. Development of significant residential structures would also eliminate the natural, open vistas characteristic of agriculturally-based communities. New houses would be easily viewed from existing public roads, and would line streets within the cluster residential neighborhood. Furthermore, the cluster residential alternative would not ensure the preservation of open spaces, wetlands, and water resources, as well as potential archeological resources.

As with the Existing Zoning Alternative above, residential development could also result in a significant burden being placed on Town of Alabama community services such as fire, police, and ambulance services. According to an August 2010 fact sheet published by the American Farmland Trust summarizing over 20 years of "Cost of Community Services (COCS)" studies, the median cost per dollar of revenue to provide public services to residential land use is $1.16. While this imbalance might be partially offset by incremental residential development, this demonstrates that residential development is typically a net cost to public resources. This net cost is not sustainable without some offsetting form of land use that can serve as a net income to public resources.

Preferred Alternative

The Preferred Alternative is the establishment of a high technology campus at the Project Site planned to accommodate approximately 6.1 million square feet of advanced technology manufacturing uses at full build-out, providing direct

employment for over 9,000 people. Phase 1 is planned to attract an anchor technology manufacturing facility of up to 1 million square feet. Once secured, the anchor facility will attract a variety of technology manufacturing support uses and supporting commercial enterprises.

In alignment with the Town of Alabama's wishes to create employment opportunities to retain local residents, the Preferred Alternative provides a number of new jobs during both the construction and operational phases of the Project. No private residences will be developed at the Project Site. The Project will require additional water and sewer infrastructure to support the advanced manufacturing uses being developed. Extensions to the water system will augment those lines being contemplated by the Town of Alabama's on-going water supply study (*Preliminary Engineering Report for the Town of Alabama Water District #2* (Appendix M). The Project will provide an additional opportunity to expand the reach of broadband to be shared between the Project and residential service. Roads needed to access and connect development parcels will be built over time as needed by Project development.

In terms of maintaining the visual character of the community, the Project is planned to visually integrate itself into the existing rural, agrarian setting in a comfortable and compatible manner. Larger technology manufacturing structures are located on the lower, western portion of the Project Site, while smaller-scale supporting structures are located on the eastern portion of the Project Site to provide a scale transition to neighboring farmland. In addition, significant undeveloped buffer zones are to be located around the Project Site's perimeter, and the campus-like setting of the Preferred Alternative will ensure that open spaces and environmentally sensitive locations are maintained. This type of setting is not only required to preserve the aesthetic of the surrounding community, but to attract and retain the "creative class" workforce necessary for advanced technology manufacturing. Building materials will be high-quality, and will be chosen to reflect the rural agricultural vernacular of the area.

The Preferred Alternative represents an evolution of conceptual planning that has resulted in a significant minimization and/or avoidance of impacts to existing surface water, wetlands, stormwater, and historical/archeological resources. This is clearly demonstrated when a review of the original master plan set forth in the initial Feasibility Study Master Plan (2008) is compared with the Preferred Alternative of this DGEIS. For example, the Preferred Alternative has resulted in a reduction of potential wetland impacts from +/- 69 acres to below 10 acres.

In terms of economics, the Project represents an opportunity to bring New York State's significant investment in high technology research, development, and manufacturing to the western region of the State. To date, the Lead Agency has already received inquiries from high technology companies that could be appropriately accommodated at the Project Site. Therefore, there is considerable market demand for such a high technology campus in this area.

With the influx of new, high paying advanced manufacturing jobs, STAMP will be a major catalyst in helping to stem the tide of years of decline in Western NY's

manufacturing base and help foster economic stability. Economic stability will in turn lead to enhanced social viability and the ability of communities to plan and protect the sustainability of their economies and natural resources.

Economic benefits associated with the Project will be substantial and are summarized as follows:

- At full build-out, STAMP will comprise approximately 6.1 million square feet of employment-supporting building space with a total estimated assessable value of $760.5 million.
- STAMP will support over 9,000 full-time-equivalent (FTE) jobs at full build-out and occupancy.
- STAMP employment is projected to generate direct annual wages of $531.9 million at full build-out and occupancy (2011 dollars).
- Total economic output is projected to equal approximately $4.6 billion at full build-out and occupancy, including secondary economic impacts.
- Indirect wages (wages not directly attributed to STAMP employers) are projected to equal $761.3 million at build-out and occupancy, reflecting indirect employment of over 7,000 FTE jobs.
- Construction phases are projected to support 1,400 to 2,900 direct and indirect FTE jobs during the duration of development, with total earnings ranging from $40.8 million to $83.8 million.
- Property tax rates are projected to decrease due to significant increases in the tax base from STAMP:
    - The Town of Alabama could realize a decrease in the tax rate per $1,000 in value from $1.11 to $0.11.
    - Genesee County could realize a decrease in the tax rate per $1,000 in value from $9.82 to $7.97.
    - The Oakfield-Alabama School District could realize a decrease in the tax rate per $1,000 in value from $23.73 to $16.94.
- Total recurring annual state income taxes are projected to equal approximately $33.6 million at full build-out and occupancy.
- Retail operations are projected to generate annual sales taxes of $2.3 million each to the County and State.

2. INTRODUCTION

This DGEIS assesses the potential significant adverse environmental impacts of the proposed action, known as the Western New York Science & Technology Advanced Manufacturing Park ("STAMP" or the "Project"), as well as potential measures to mitigate such impacts to the maximum extent practicable. Pursuant to the applicable requirements of SEQRA, this DGEIS is prepared to facilitate the environmental review process; seek public comment and constructive input; and provide a basis for informed decision-making.

The Project is first described below in terms of its location; proposed construction; proposed zoning; and land assembly requirements. Also described below are an overview of the Project alternatives analyzed; the Project's purpose, need, and benefits; the required regulatory and local permits and approvals; and the opportunities for public review and comment, including a description of the review process required under SEQRA and opportunities for public and agency participation in that process.

Subsequent to the successful completion of the SEQRA review process, GCEDC also intends to apply for a new zoning designation for the Project Site in order to effectuate the purposes of the Project.

On January 26, 2010, GCEDC accepted Lead Agency status for the coordinated SEQRA review of the Project. Based on the information contained in the Full Environmental Assessment Form ("FEAF"), and in accordance with 6 N.Y.C.R.R. § 617.12, GCEDC issued a positive declaration having determined that the Project may have a potential significant adverse impact on the environment requiring the preparation of a DGEIS.

The following is a list of the Involved and Interested Agencies that have been identified by the Lead Agency and are participating in the coordinated SEQRA review of the Project:

Involved Agencies

- The Town of Alabama Town Board
- The Town of Alabama Planning Board
- The Genesee County Industrial Development Agency ("IDA")
- The Genesee County Health Department
- The U.S. Army Corp. of Engineers ("USACE")
- The New York State Department of Transportation ("NYSDOT")
- The New York State Department of Environmental Conservation ("NYSDEC")

- The New York State Department of Health ("NYSDOH")
- The New York State Office of Parks, Recreation & Historic Preservation ("NYSOPRHP")
- The New York State Department of Agriculture and Markets ("NYSDAM")
- The New York Empire State Development Corporation ("ESDC")

Interested Agencies

- The Town of Alabama Fire Department
- The Genesee County Department of Planning
- The Seneca Nation of Indians
- The New York State Thruway Authority ("NYSTA")
- The U.S. Fish & Wildlife Services
- National Grid
- Buffalo Niagara Enterprise ("BNE")
- Greater Rochester Enterprise ("GRE")

On January 26, 2010, GCEDC further directed, as Lead Agency, that a Draft Scoping Document be prepared and distributed for public review pursuant to 6 N.Y.C.R.R. § 617.8 of the SEQRA regulations. On February 3, 2010, GCEDC forwarded a copy of the Draft Scoping Document to all Involved and Interested Agencies. Copies of the Draft Scoping Document were also maintained at the Town of Alabama Town Hall and on GCEDC's website at www.gcedc.com. A written comment period for the Draft Scoping Document was provided from February 4 through March 5, 2010. GCEDC also conducted one (1) public scoping meeting on February 11, 2010 at 7:00 p.m. at the Town of Alabama Fire Hall for the purposes of receiving verbal comments from members of the public.

On April 1, 2010, GCEDC accepted a Final Scoping Document after receiving public comment to the Draft Scoping Document. The Final Scoping Document provided a responsiveness summary of the written comments received during the comment period, as well as the verbal comments provided during the public meetings. The Final Scoping Document further outlined those revisions made to the Draft Scoping Document (as necessary in response to specific comments).

In accordance with the applicable SEQRA regulations, after acceptance of the DGEIS by the GCEDC, and the filing of the requisite Notice of Completion, a minimum 30-day public review and comment period shall commence. One public hearing on the DGEIS will also be conducted during this time period. After completion of the public review and comment period, a final GEIS ("FGEIS") will then be developed which will include any comments received on the DGEIS, as well as changes being made to the DGEIS as a result of such comments. Finally, a SEQRA Findings Statement will be prepared. The DGEIS and Findings Statement will set

forth, among other things, “specific conditions of criteria under which future actions will be undertaken or approved, including requirements for any subsequent SEQRA compliance.” The issuance of the Findings Statement will conclude the SEQRA review process for the Project.

3. PROJECT BACKGROUND

3.1 Historical and Current Site Use

The Project Site is 1,337.20 acres in size, and is located along New York State Highway 77/63, approximately 5 miles north of the I-90/New York State Thruway (Figure 3-1). The Project Site vicinity is characterized by rural and agricultural land uses. A majority of the Project Site is currently zoned A-R (Agricultural-Residential).

The southeast corner of the Project Site is part of the John White WMA and is currently zoned Land Conservation, or L-C (Figure 3-2). A STAMP Farmland Classification Map (Figure 3-3) and STAMP Soil Capability Map (Figure 3-4), from the United States Department of Agriculture ("USDA") Natural Resources Conservation Service illustrate the classification of farmland and the nonirrigated soil capability of soils on the Project Site. The Project Site is visually flat to gently rolling with a high point elevation at its southeast corner. The Project Site generally slopes to the northwest corner with the exception of a gentle ridgeline that runs diagonally across the Project Site adjacent to the hamlet of the Town of Alabama.

The Project Site also lies within the Niagara Hydro Power Zone (Figure 3-1). Significant electrical power facilities currently run across or directly abutting the Project Site, while gas, water, sewer and telecommunication services will need to be developed for the Project.

The Project Site is currently comprised of twenty-three (23) separate parcels, the majority of which are located in the Genesee County Agricultural District No. 2 (Figure 3-5). The Seneca Nation of Indians Reservation also abuts the western edge of the Project Site.

3.2 STAMP Impetus & Vision

New York State has made significant investments in high tech sectors in recent years with excellent returns on those investments. The State of New York has invested approximately $500 billion, and private companies have invested more than $3.5 billion, into the Albany Nanotech Campus and Luther Forest Project located in Saratoga County. The Albany Nanotech Campus and the Luther Forest Project are visible, tangible examples of New York State's investment in high technology manufacturing. The SEMICO study was an independent third party analysis done by an expert on economics. The output of the study concluded that New York State's investments in high tech would be fully returned within about 2.5 years of direct tax refunds.

The impetus for STAMP was based on the requirement to have additional shovel-ready, "Greenfield" sites larger than 1,000 acres built in campus-like settings to attract the most sophisticated and technically-advanced manufacturing workforce. This approach would combine the synergy of the State's investment with the

industrial cluster's technical talent and the region's assets and attributes to provide the next global competitive site. Western New York has an opportunity to leverage the New York State high tech investment with STAMP, which is well-situated within an area of technical universities and population centers, namely the Buffalo and Rochester metropolitan regions (Figure 3-1).

3.3 STAMP Advisory Committee

An Advisory Committee comprised of local and regional officials was formed to provide feedback and guidance to the Project Sponsor on the planning stages for the Project. The Advisory Committee members informally met on a regular basis to provide guidance on regional and local issues that could be pertinent to the Project, as well as assist in developing a comprehensive public involvement and outreach program.

3.4 STAMP Feasibility Study

In November 2008, the Project Sponsor's consultants, IDC Architects/CH2M HILL, completed a Feasibility Study for the Project. The study concluded that the Project Site would be attractive to technology manufacturing companies due to a range of factors, including its location within the Niagara Hydro Power Zone (a source of low cost energy); a superb higher education system located proximate to the Project Site; a large, flexible site location; and the potential availability of State incentives. The Master Plan developed for the Feasibility Study indicated that over 6 million square feet of technology manufacturing and support uses, along with office, retail and a possible renewable energy demonstration center, could be accommodated within the Project Site at full build-out. This program would be developed in an ultra-low density configuration resulting in a floor area ratio to total site area ratio of 0.16. The Feasibility Study Master Plan further suggested the potential for a renewable energy theme for the Project (Figure 3-6).

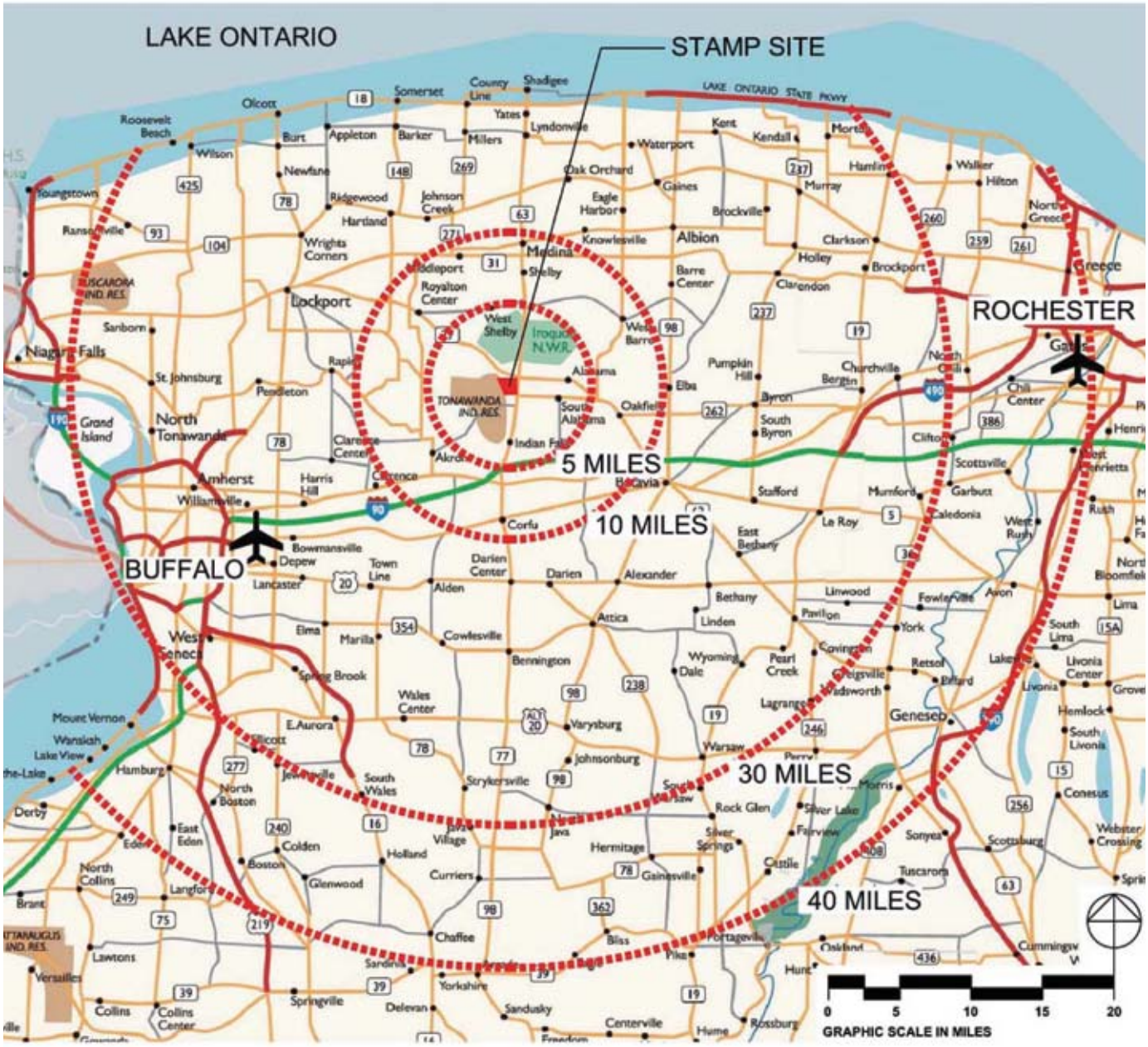
3.5 Public Involvement & Outreach

3.5.1 Town Hall Meetings

In May and November of 2007, GCEDC conducted four (4) "Town Hall Meetings" at the Town of Alabama Fire Hall in order to discuss the idea of the Project being located in the Town of Alabama. The format of the Town Hall Meetings included PowerPoint presentations describing the typical character makeup of technology manufacturing sites and facilities in other locations, followed by question and answer periods meant for public participation. In all of the meetings, the discussion regarding the Project was interesting and informative, and provided an open and appropriate forum for the public and the Project Sponsor to discuss the specifics of STAMP.

3.5.2 Project Website

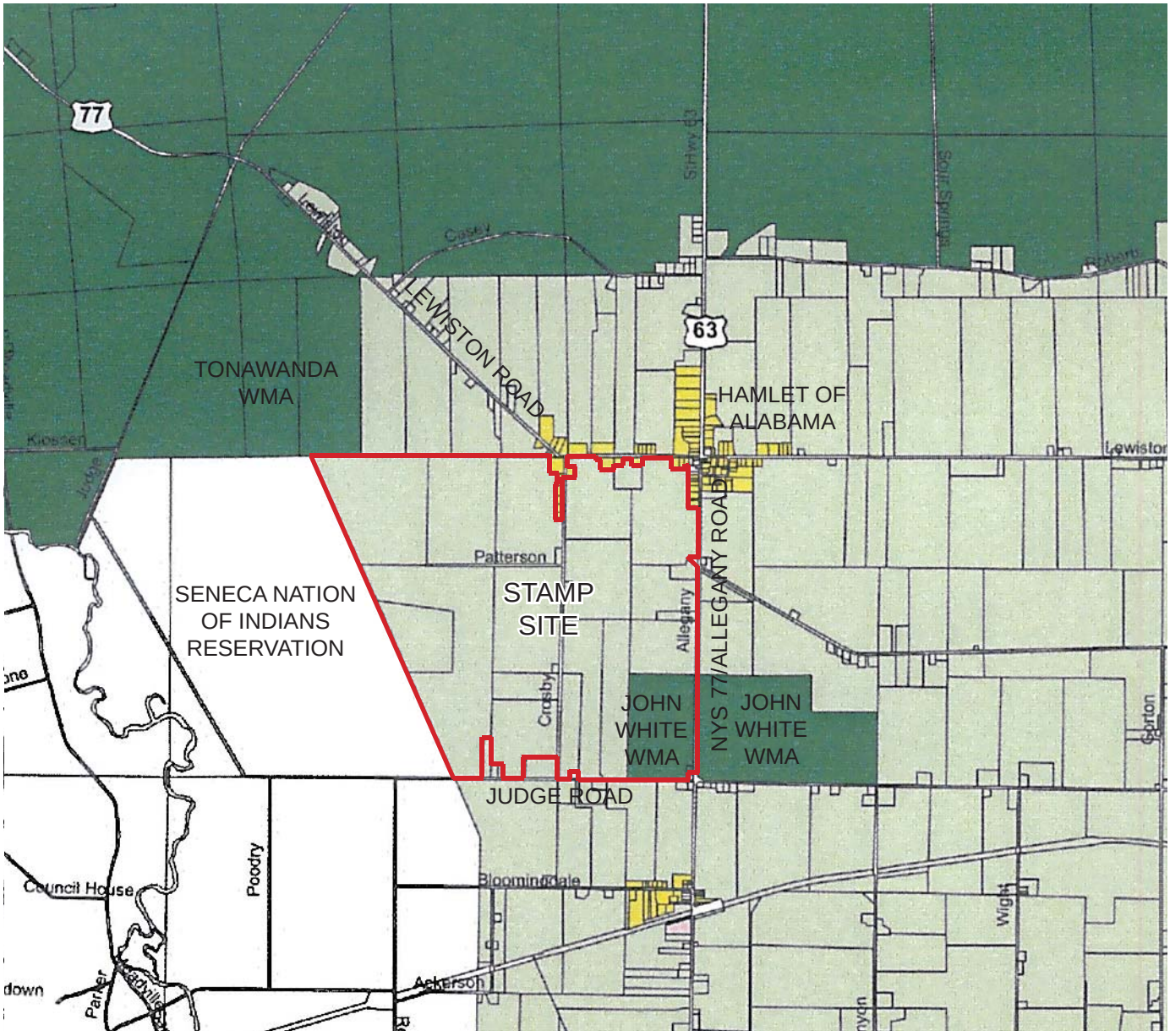
The Lead Agency has also maintained a website at *www.gcedc.com* for the Project wherein all of the applicable SEQRA documents and notices have been digitally



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Figure 3-1
Project Vicinity Map

Town of Alabama, New York

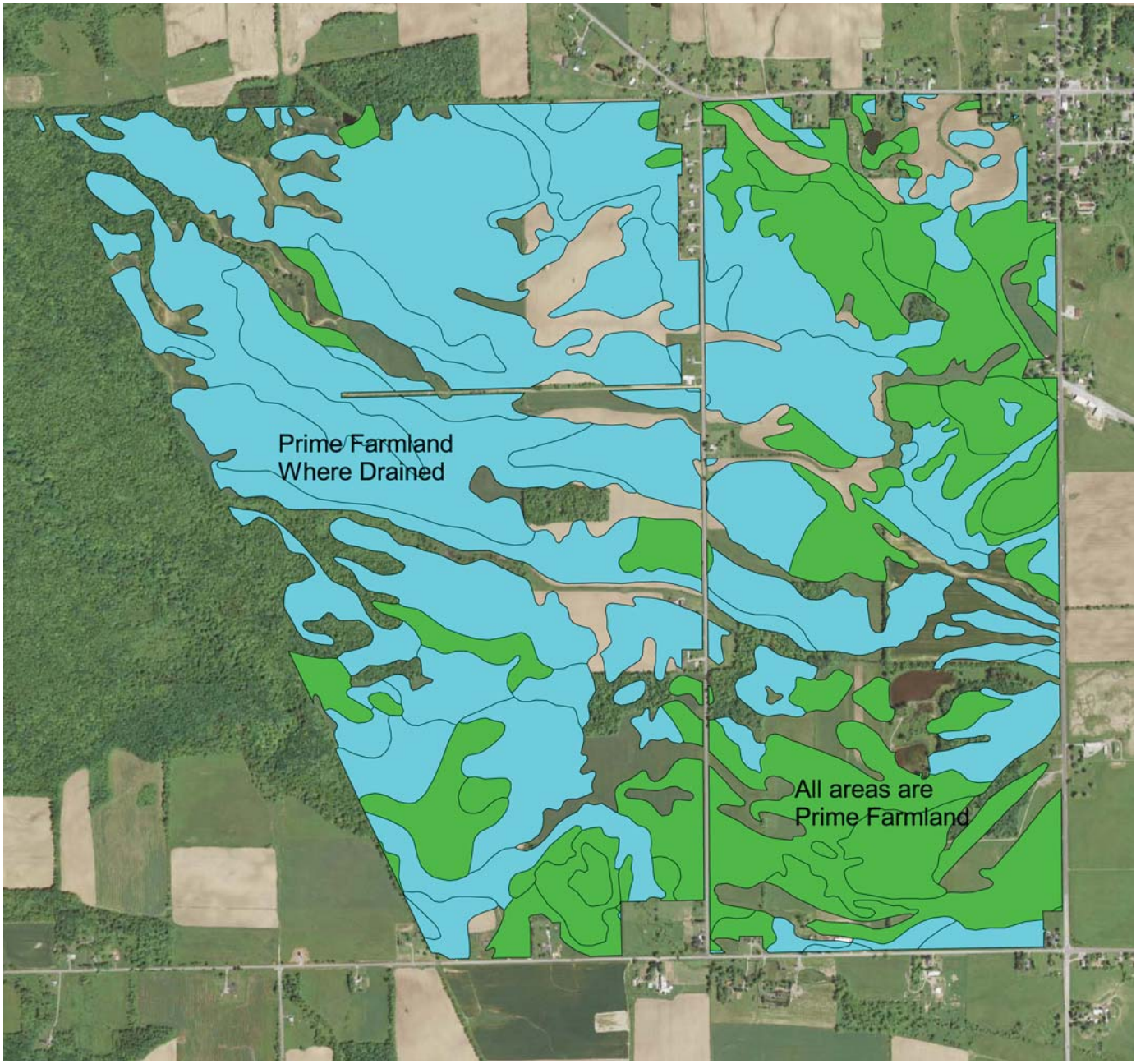


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Town of Alabama, New York

Figure 3-2
Existing Town of Alabama Zoning Map

(Source: Oakfield Alabama Comprehensive Plan)

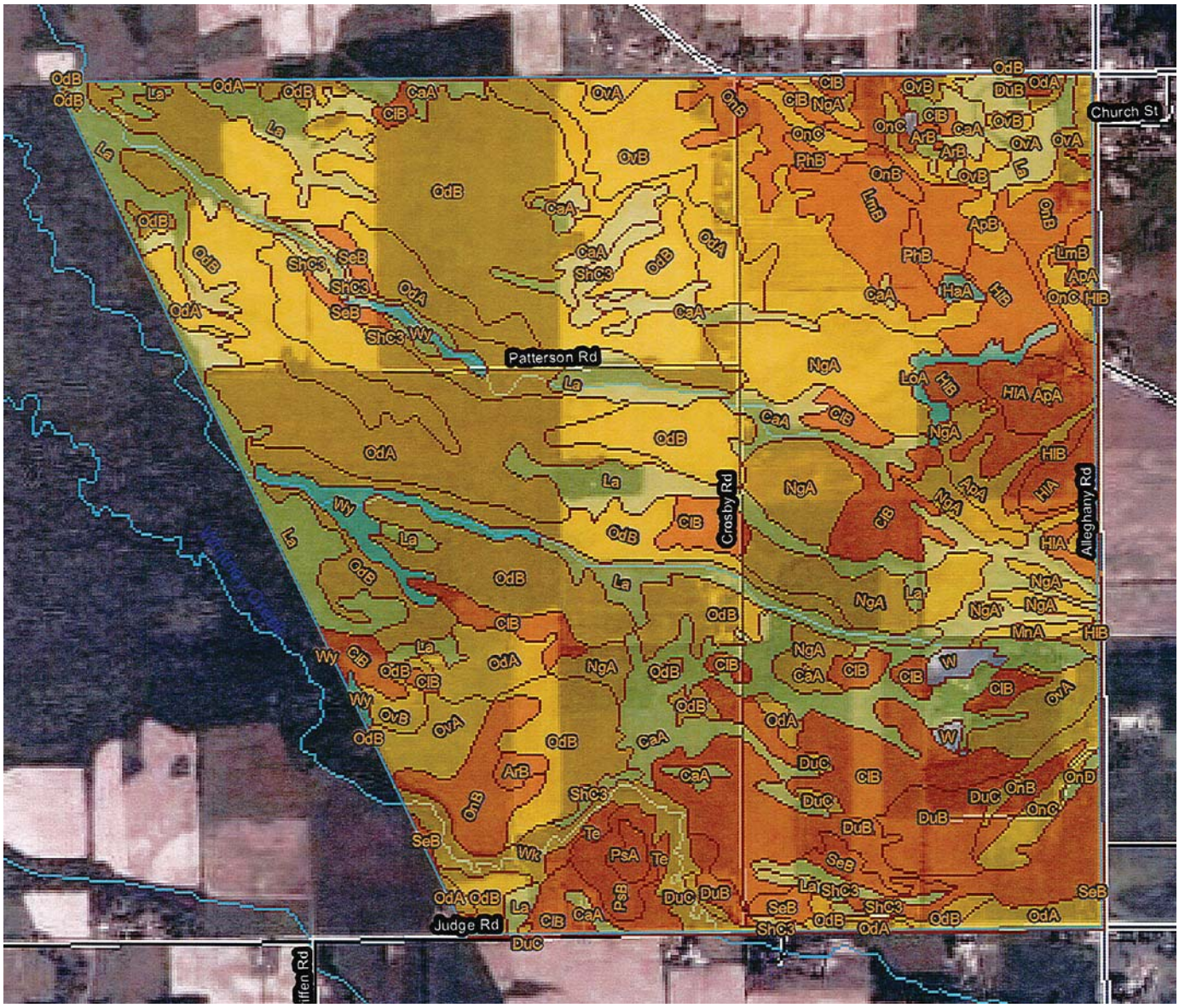


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Town of Alabama, New York

Figure 3-3
STAMP Farmland Classification Map

(Source: Genesee County Planning Department)

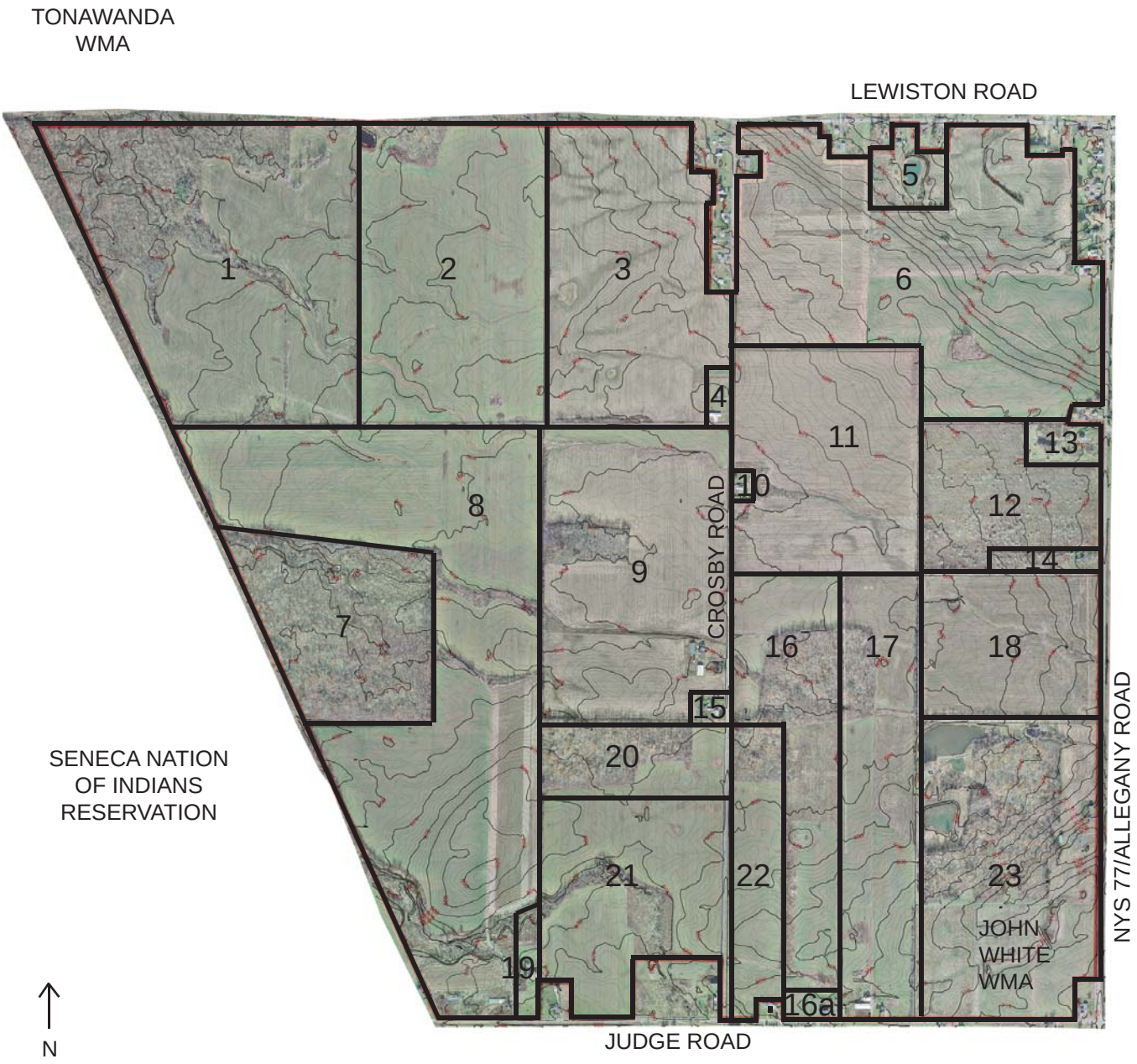


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Figure 3-4
STAMP Project Soil Capability Map

(Source: United States Department of Agriculture)



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Town of Alabama, New York

Figure 3-5
Project Site Parcel Map



LEGEND

- EXISTING BUILDINGS/STRUCTURES
- EXISTING DRAINAGE CHANNEL
- EXISTING POND
- EXISTING FEDERAL WETLAND
- EXISTING TREE COVER
- EXISTING HIGH TENSION POWER LINES
- PROPOSED RETAIL BUILDING
- PROPOSED FLEX/INDUSTRIAL BUILDING
- PROPOSED OFFICE BUILDING
- PROPOSED WALKING TRAIL
- PROPOSED DEMONSTRATION CENTER AND/OR NYS CENTER OF EXCELLENCE

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Figure 3-6
Feasibility Study Master Plan (2008)

Town of Alabama, New York

maintained, as well as the STAMP Feasibility Study and 2008 Initial Community Opinion Survey (and its results). Most of the notices and documents prepared as part of the SEQRA process identify the website's address and that the particular document is posted at that location. The website is an additional tool by which the public can learn about the Project, and access information and documentation relevant to the Project's SEQRA review.

3.5.3 Initial Community Opinion Survey (2008)

Following the November 2007 Town Hall Meetings, the Project Sponsor conducted a community opinion survey of all residents of the Town of Alabama to determine the community's view towards continuing to investigate the feasibility of developing the Project in the Town of Alabama. The central question the survey asked was whether community residents would support continuing and finalizing a comprehensive Feasibility Study for the STAMP initiative. The survey's response rate was very positive, with 42% of the community residents responding to the survey. Of those 42% responding, 78% indicated support for continuing a Feasibility Study for the Project.

3.5.4 Public Scoping Process

On January 26, 2010, GCEDC further directed, as Lead Agency, that a Draft Scoping Document be prepared and distributed for public review pursuant to 6 N.Y.C.R.R. § 617.8 of the SEQRA regulations. On February 3, 2010, GCEDC forwarded a copy of the Draft Scoping Document to all involved and interested agencies. Copies of the Draft Scoping Document were also maintained at the Town of Alabama Town Hall and on GCEDC's website at www.gcedc.com. A written comment period for the Draft Scoping Document was provided from February 4 through March 5, 2010. GCEDC also conducted one (1) public scoping meeting on February 11, 2010 at 7:00 p.m. at the Town of Alabama Fire Hall for the purposes of receiving verbal comments from members of the public. On April 1, 2010, GCEDC accepted a Final Scoping Document after receiving public comment to the Draft Scoping Document. The Final Scoping Document provided a responsiveness summary of the written comments received during the comment period, as well as the verbal comments provided during the public meetings. The Final Scoping Document further outlined those revisions made to the Draft Scoping Document (as necessary in response to specific comments).

3.5.5 DGEIS Public Comment Period

In accordance with the applicable SEQRA regulations, after acceptance of the DGEIS by the GCEDC, and the filing of the requisite Notice of Completion, a minimum 30-day public review and comment period shall commence. One public hearing on the DGEIS will also be conducted during this time period. After completion of the public review and comment period, a final GEIS ("FGEIS") will be developed which will include any comments received on the DGEIS, as well as changes being made to the DGEIS as a result of such comments. Finally, a SEQRA Findings Statement will be prepared. The DGEIS and Findings Statement will set forth, among other things, "specific conditions of criteria under which future actions

will be undertaken or approved, including requirements for any subsequent SEQRA compliance." The issuance of the Findings Statement will conclude the SEQRA review process for the Project.

3.5.6 Second Community Opinion Survey (2011)

A Second Community Opinion Survey will also be conducted to determine further the community's views towards continuing the Project in the Town of Alabama.

The survey will be performed during the requisite 30-day public comment period for this DGEIS as a means to facilitate the public comment process. The survey period will be two weeks in duration, and will commence shortly after the requisite public hearing for the DGEIS.

In order to be as comprehensive and inclusive as possible, the survey methodology will include the following survey accessibility options:

- Mailings to all residents and property owners in the Town of Alabama.
- Online availability.
- Availability at certain public venues, such as the Town of Alabama Town Hall.

4. DESCRIPTION OF THE PROPOSED ACTION

4.1 Project Location

The Project is proposed to be located on 1,337.20 acres of land in the Town of Alabama, County of Genesee, State of New York. The Project Site is located along New York State Highway 77-63, approximately five miles north of the I-90/New York State Thruway in the Town of Alabama. The Project Site is bounded by Judge Road on the south, Lewiston Road on the north, NYS Highway 77-63 on the east, and the Seneca Nation of Indians Reservation on the west (Figure 4-1).

The Project Site vicinity is characterized by rural, agricultural land uses, predominant in the Town of Alabama (Figure 4-2). The Project Site borders the hamlet of Alabama at its northeast corner. The Project Site is visually flat to gently rolling, and contains a variety of uplands and wetlands; the highest elevation is at its southeast corner and gently slopes to its northeast corner. A subtle ridgeline runs diagonally across the Project Site adjacent to the hamlet of Alabama (Figure 4-3).

The Project Site is currently zoned Agricultural-Residential (A-R) and Land Conservation (L-C) according to the Town of Alabama Zoning Ordinance (1987, amended November 2006). Adjacent properties are largely agricultural in nature, both active and fallow (Figure 4-1). A small number of rural homesteads are located within and adjacent to the Project Site, including certain homes and businesses located within the hamlet of Alabama. A few commercial uses are located within the hamlet, and the Project Site connects to this center. In addition, the westernmost portion of the John White WMA is located within the southeast corner of the Project Site. The Project Site is currently accessed by Crosby Road between Judge Road and Lewiston Road.

At the regional scale, the Project Site is located midway between the Buffalo and Rochester, New York metropolitan areas. Typically, the population of a combined metropolitan area targeted for high technology companies is greater than 1 million, and the Buffalo-Niagara and Rochester metropolitan statistical areas combined represent 1.1 million people and 1 million people, respectively, for a total population of over 2 million people.

4.2 Project Goals and Objectives

The Project's goals and objectives center around the creation of a large scale, shovel-ready high tech site of 1,000 acres or greater built in a sustainable, campus-style setting. The Project intends to attract the large technology manufacturing facilities needed to compete in the global advanced manufacturing marketplace, and

the Preferred Alternative has been designed to accommodate such world-class high tech companies.

The Project will offer fundamental benefits to the Town of Alabama and Western New York as a whole. Throughout the extensive public outreach and Project planning process, the community voiced concerns about the area losing local young people due to the lack of well-paying jobs in the community. The Project will address this core community value and concern through the creation of approximately 9,000 potential jobs over its long-term build-out, providing a diversified offering of employment options throughout its construction and operational stages.

In addition, the following specific project objectives were communicated and agreed upon with the community throughout the development of the Project:

- Create good-paying, 21st century jobs in the local community.
- Reduce the "brain-drain" of young people leaving the community.
- Provide increased revenues to support local community services.
- Provide enhanced utility infrastructure, such as water, sewer, natural gas and broadband.
- Reduce local property taxes.
- Demonstrate sustainable development.
- Create a "place" of pride in the community.

In addition to these community-specific benefits, the Project presents a significant opportunity to leverage New York State's high tech investment in a similar manner as has been done in the eastern part of the State, providing a balanced economic engine across New York.

4.3 Constraints and Influences on Project Planning

4.3.1 Design Constraints and Considerations

The Project Site has many attributes that prove attractive to high technology companies planning new facilities. Chief among these are:

- Support expressed for the STAMP initiative by New York State, Genesee County, and the Town of Alabama throughout the SEQRA process and other planning activities spanning the past four (4) years since Project inception.
- Site location near the I-90 NYS Thruway midway between the Buffalo and Rochester metropolitan areas, allowing access to significant resources, including workforce, educational facilities, transportation, and supply chain.
- Mix of parcel sizes to support synergistic variety of technology manufacturing uses, with one large parcel exceeding 250 acres in size to support a major anchor use.



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Town of Alabama, New York

Figure 4-1
Project Location Photo





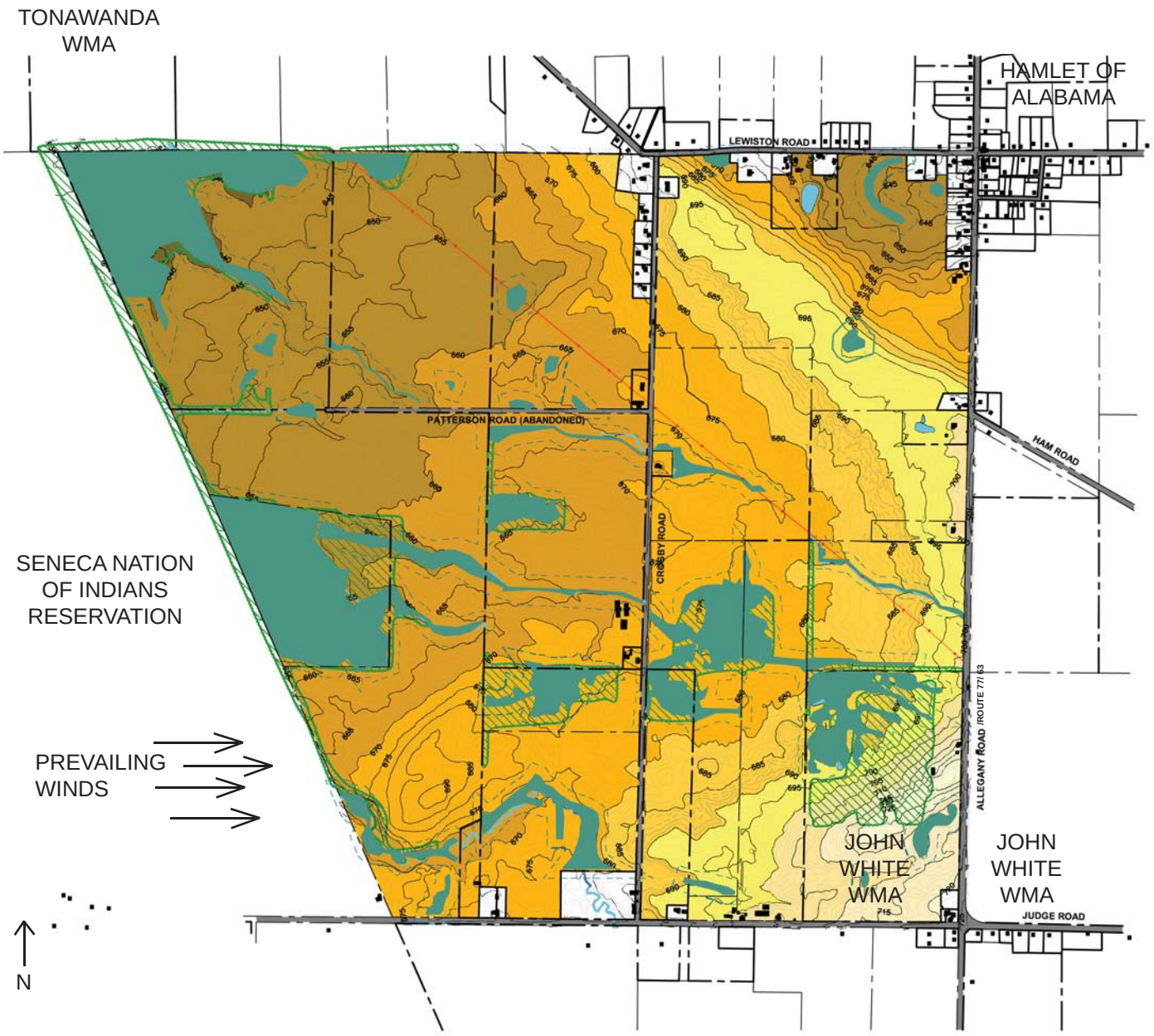




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Figure 4-2
Existing Site Photographs

Town of Alabama, New York



LEGEND

- EXISTING BUILDINGS/ STRUCTURES
- EXISTING PARCEL LINES
- EXISTING WETLAND
- EXISTING TREE COVER
- EXISTING HIGH-TENSION POWER LINE

TOPOGRAPHIC ELEVATIONS

- 640 - 650
- 650 - 660
- 660 - 670
- 670 - 680
- 680 - 690
- 690 - 700
- 700 - 710

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Town of Alabama, New York

Figure 4-3
Site Analysis Map

- Potential for low-cost, redundant power to take advantage of the Niagara Hydro Power Zone.
- A large and virtually flat site with moderate environmental constraints.
- Potential for tax benefits and new job creation within the community.
- Phased, network-oriented strategies to bring water and sewer service to the Project Site.
- Potential sustainable development practices focused on a "renewable energy" theme for STAMP.
- Desire for high-quality development necessary to attract and retain a creative class workforce.
- A low-density master plan integrated into the rural agricultural surroundings.

In addition to the site features necessary to attract advanced manufacturing companies, the Project Site possesses the following environmental design considerations and constraints that have been analyzed, discussed, and integrated into the STAMP campus plan. Such considerations are not seen as constraints, but rather opportunities to meaningfully connect the manufacturing complex to its context. Chief natural resource considerations include:

- Approximately 122 acres of wetlands in 52 areas are located within the Project Site, including several high-quality wetlands. The on-site aquatic resources include existing headwater wetlands, streams, and corridors (Figure 4-4).
- The Project Site is located in the Whitney Creek Watershed (Figure 4-5), a sub-watershed of the Niagara River. This is a relatively intact sub-watershed that has only 4% of land cover in development, approximately 88% of the watershed's original estimated wetland coverage, and large blocks of forest and other natural areas. From a watershed perspective, impacts associated with the Project can be offset by the ecological resilience provided by existing natural resources and by addressing priority conservation needs in the watershed, including protection and enhancement of streams and wetlands in the headwater reaches of the watershed. The Project Site itself has been designed to contribute to the enhancement of natural corridors connecting wetlands and forest blocks, augmenting its natural context.
- Biodiversity is also a feature of the Project Site and the surrounding watershed. Habitat for conservation priority species including the Least Bittern and the Heartleaf Plantain is respected by the Project to the greatest extent possible, and is integrated into its open space system.

In terms of the potential impacts of the Project on the context surrounding the Project Site, the following areas and issues have been considered:

- As an immediate neighbor to the Seneca Nation of Indians. Project representatives have met with the Tonawanda Council of Chiefs to apprise the group of the Project's background and planning over the course of developing this DGEIS. The Council of Chiefs has provided input into this process. In addition, a representative from the Seneca Nation of Indians has been involved in the Phase IB Cultural Resource surveying and collection activities.
- A number of private landowners are located within and adjacent to the Project Site. In addition, portions of the Project Site are currently used for farming and sport. These landowners and users have been apprised of all project activities, and significant effort has been made to communicate and coordinate all physical analysis and field studies conducted as part of this DGEIS.
- Much of the Project Site's construction, delivery, and operational traffic is assumed to arrive from NYS Thruway Exit 48A and travel north on NYS Highway 77-63. As such, consideration for access to those existing businesses and farms located along this route will be maintained.
- An existing New York Power Authority (NYPA) power line crosses the Project Site diagonally from the northwest to southeast. A 50' setback will be maintained from the towers throughout construction and operation of the Project (Figure 4-6).
- A 300-foot open space buffer will be maintained between the developed areas of the Project Site and neighboring residences, businesses, and public roads. This buffer will reduce visibility of construction activities, and will be maintained throughout the construction and operation of the Project Site in respect of the surrounding rural context (Figure 4-6).

4.3.2 Actions Not Included as Part of the Project

The following projects are not part of the Project being reviewed in this DGEIS:

Buffalo East Technology Park

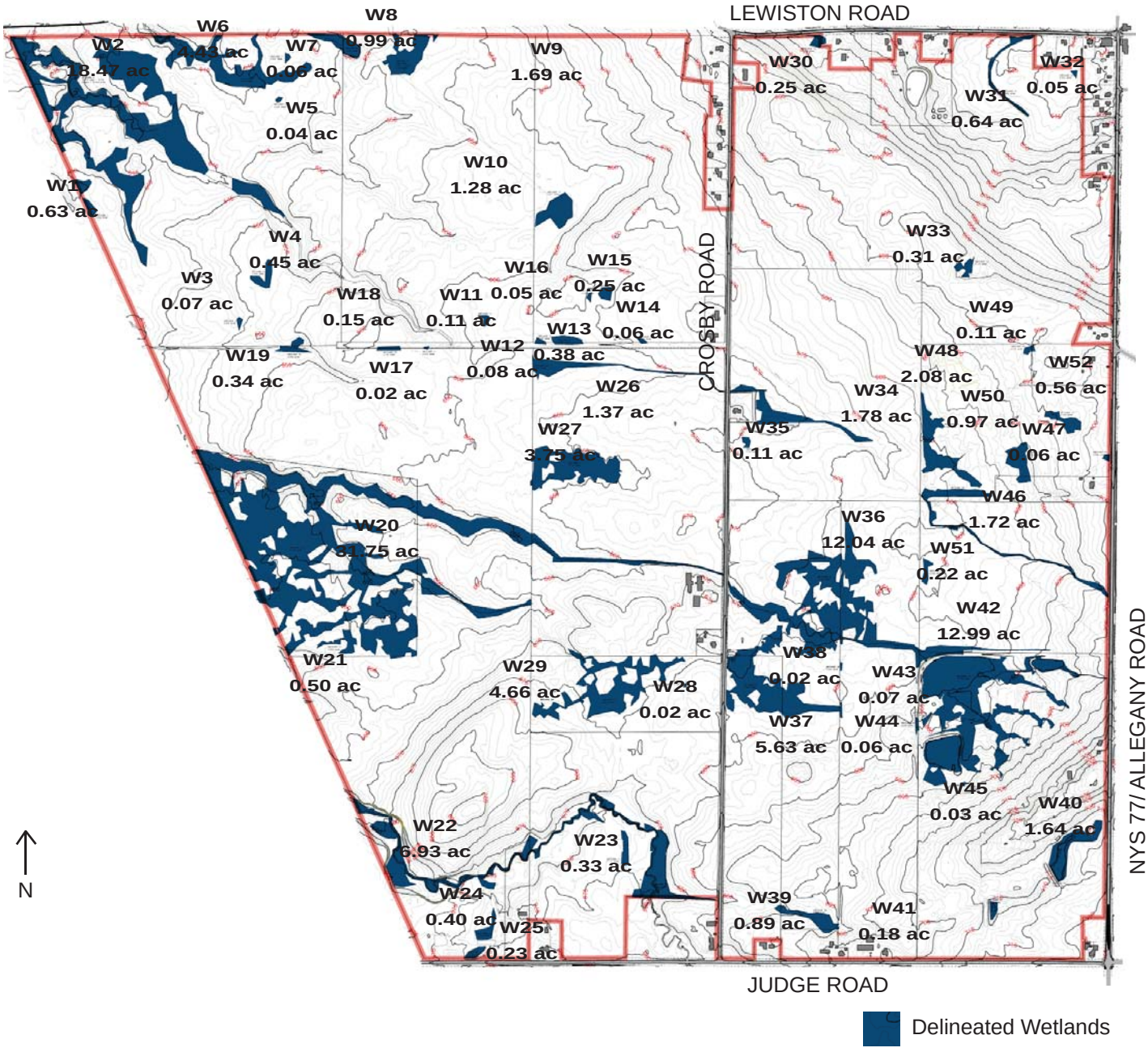
GCEDC is developing a 232-acre technology park in Pembroke, New York at the crossroads of NYS Routes 77 and 5. Also located in NYPA's low-cost hydro power zone, this park is pre-permitted to facilitate efficient development.

Alabama Ledge Wind Farm

Alabama Ledge Wind Farm, LLC is proposing to develop 38 wind generating turbines, resulting in an approximate capacity of 80 MW. The project is located on private land in the Town of Alabama. The Draft Environmental Impact Statement (DEIS) for this project has been released for public review.

Town of Alabama, Village of Oakfield, and Town of Pembroke Water Projects

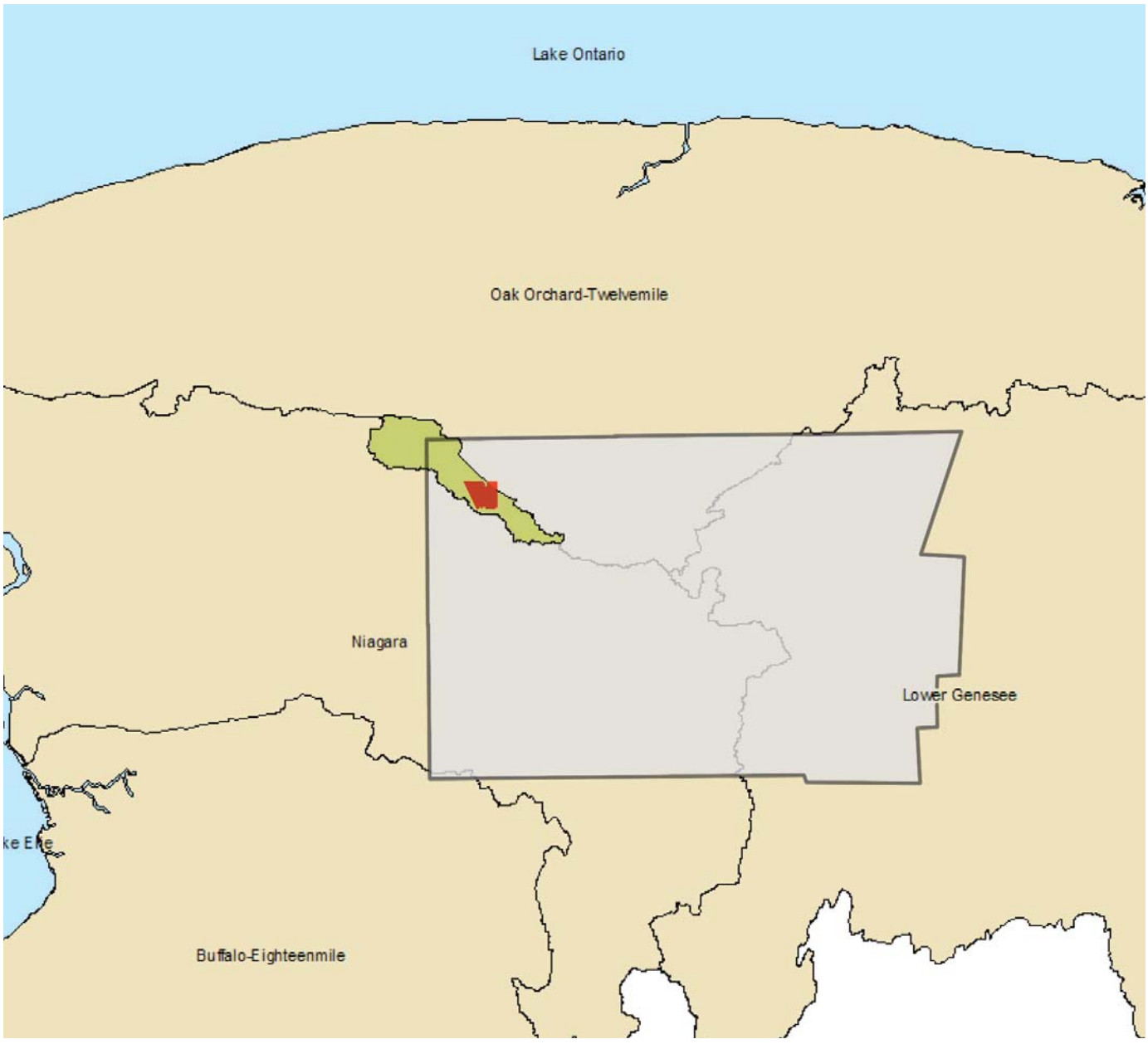
The Town of Alabama, the Village of Oakfield, and the Town of Pembroke are planning water main projects in the vicinity of the Project Site. The planned municipal projects vary in their scope. The Town of Alabama is proposing an 8-inch



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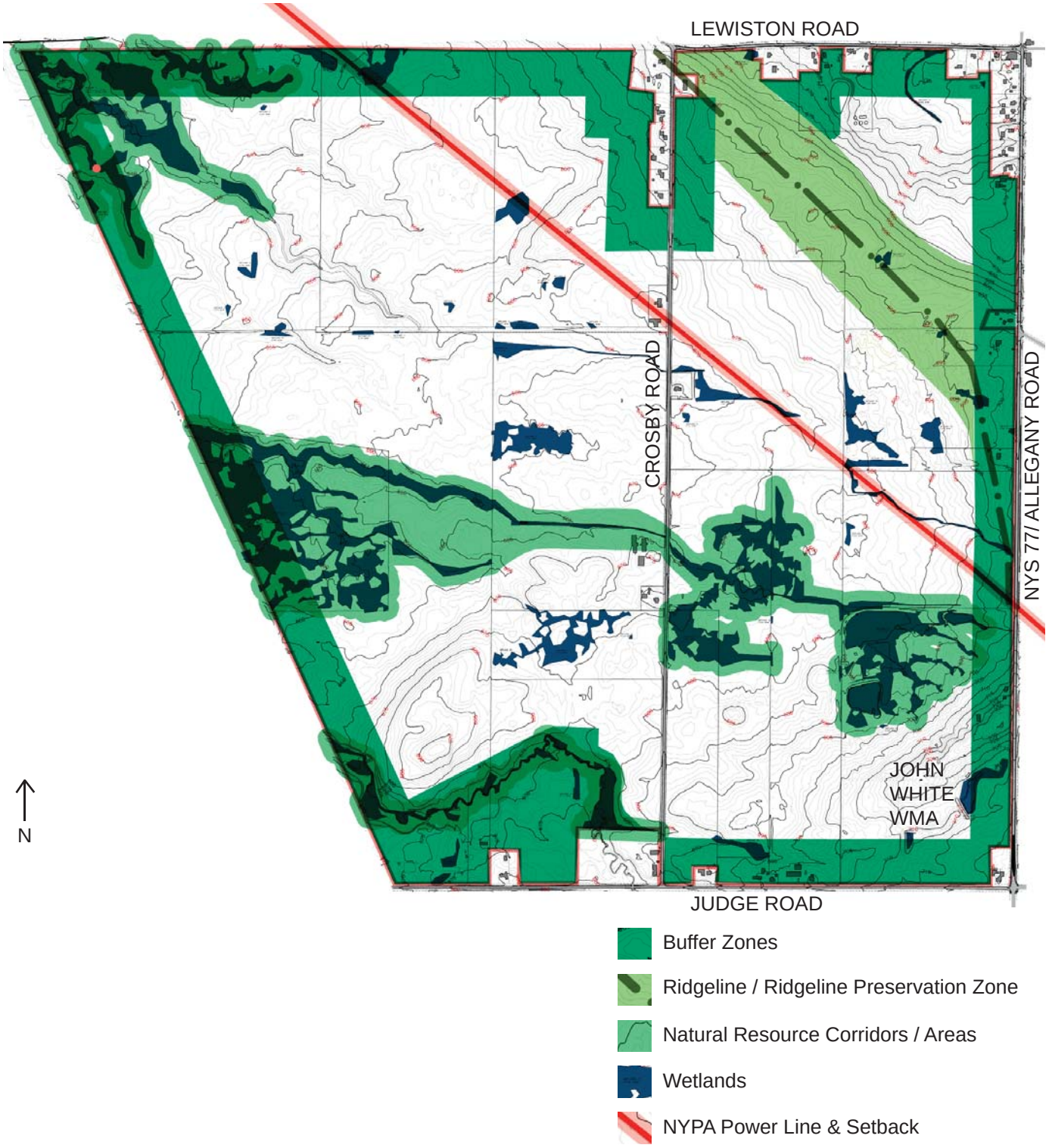
Figure 4-4
Wetland Delineation Map



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Figure 4-5
Watershed Map

Town of Alabama, New York



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Figure 4-6
Site Constraints & Opportunities Map

Town of Alabama, New York

water main along NYS Route 77, from the intersection of Lewiston Road south to the intersection of Route 63; a 12-inch water main along Route 63, from Route 77 to Maple Street; and a 12-inch water main along Route 63, from Maple Street east to the Village of Oakfield Water system. The exact timing for the completion of the planned water main projects is dependent upon the securing of funding sources.

4.4 Design Philosophy

The STAMP initiative is focused on two (2) important aspirations as voiced by the Town of Alabama community:

- To create well-paying jobs for local residents, and
- To provide an opportunity for local residents, their children and grandchildren, to continue to live and work in the area throughout their lives.

STAMP would be a place of pride in the community, as the establishment of a sustainable, world-class manufacturing park would allow for employment opportunities within a landscape that integrates well into existing rural fabric of the community.

Throughout the planning process, the following principles resonated with the community. These principles will be referenced throughout development of the Project in order to align the Project with these core ideas:

- Create an employment center within the Town of Alabama to enable local residents to live and work within their community.
- Develop a variety of job opportunities for the local community throughout the construction and operation of the Project.
- Establish a low-density campus, based upon sustainable design principles, that fits into a rural context.
- Create a rural agricultural design expression with buildings that are integrated into the community fabric.
- Celebrate the Town of Alabama's heritage and culture through stewardship of the landscape and establishment of a new, multi-use town hall complex, including Town of Alabama offices, a town museum, recreation facilities, and an environmental center at the Project Site.
- Introduce a trail network within the Project Site to become a shared amenity where the natural character of the land may be appreciated.

4.5 Project Overview

The Preferred Alternative for the Project (Figure 4-7), along with its proposed program, are quantified in Table 4-1 below.

TABLE 4-1
Land Use and Density at Build-out

Land Use and Density at Build-out	Building SF	Floor Area Ratio
Gross Site Area (Acres)		1,337.20
Buildable Site Area (Acres)		618.18
Percentage Buildable Site Area		46%
Technology Manufacturing	4,000,000	
Flex Space	1,400,000	
Office	500,000	
Retail	180,000	
Demonstration Center/Town Hall Multi-Use	50,000	
Subtotal	2,130,000	
Totals	**6,130,000**	**0.11**

The Preferred Alternative proposes 6,130,000 square feet of development, including technology manufacturing facilities; flex space and support facilities; office space; retail support uses; a multi-use town hall building site; and a network of open space and trails that meander throughout the Project Site. These uses are described in detail below in the paragraph entitled “Project Components”.

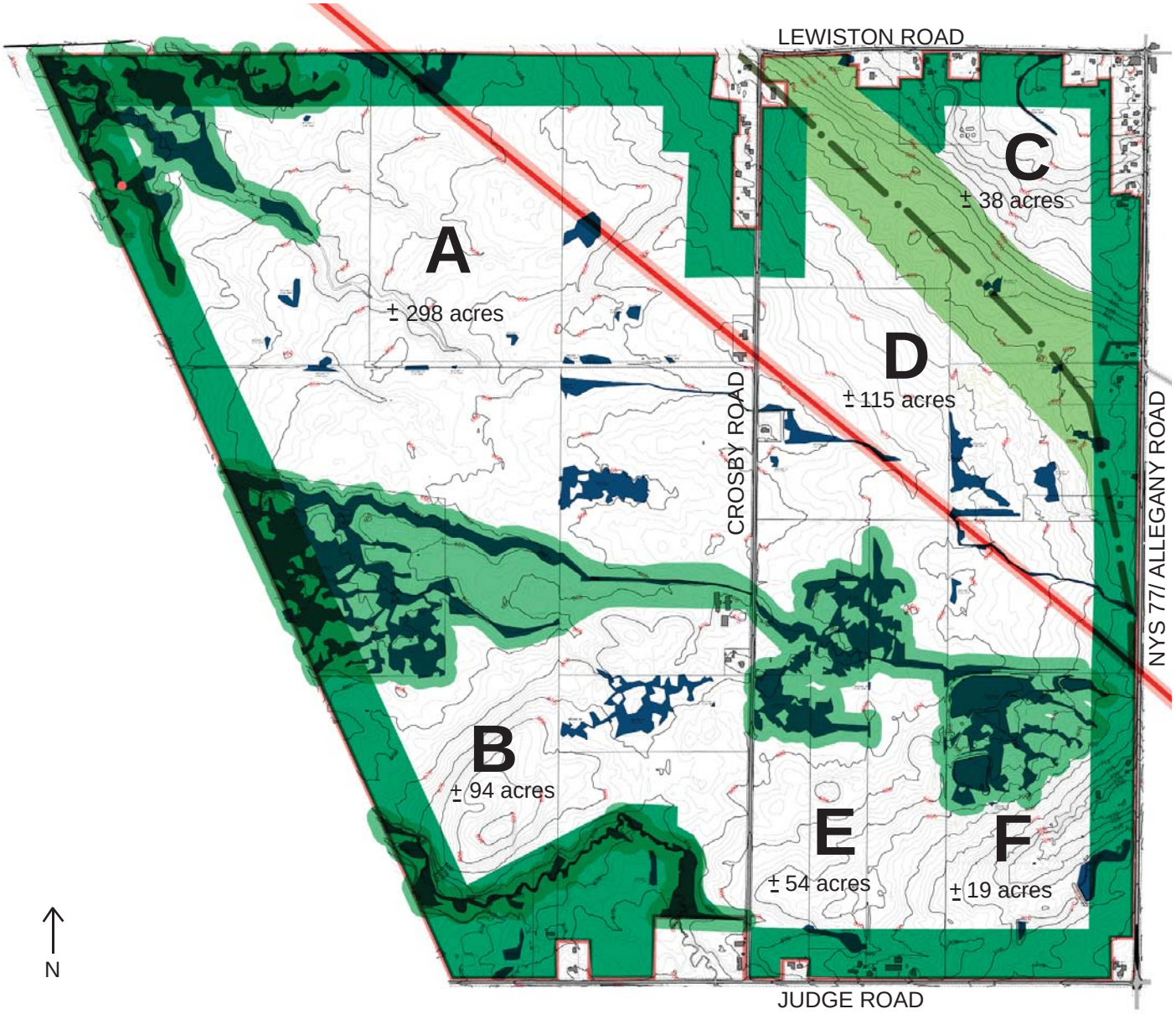
In terms of its organization, the Project is planned in a campus setting, meaning that development is respectful of and compliments the natural landscape. The Project is developed at a low density, with only about 46% of the Project Site to be developed. In response to community comments, substantial landscape buffers will surround the Project Site along property lines shared with other property owners, as well as the hamlet of Alabama in order to maintain existing viewsheds and the rural character of the area surrounding the Project. In addition, a ridgeline that runs between the existing hamlet of Alabama will remain undeveloped to provide visual separation between the hamlet and the Project (Figure 4-8). Central to the Project’s open space system is a natural area corridor that runs east-west across the Project Site. This natural area will be protected and enhanced to maintain and improve ecological functions provided by existing headwater streams, stream buffers, and wetlands. This natural area corridor, along with the Whitney Creek corridor and various



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Figure 4-7
Preferred Alternative



Approximate Buildable Areas

Area A	298	acres
Area B	94	acres
Area C	38	acres
Area D	115	acres
Area E	54	acres
Area F	19	acres
Total	**618**	**acres**

- Buffer Zones
- Ridgeline / Ridgeline Preservation Zone
- Natural Resource Corridors / Areas
- Wetlands
- NYPA Power Line & Setback

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Figure 4-8
Buildable Area / Open Space Plan

wetlands located throughout the Project Site, will anchor the open space system. A trail network will weave its way throughout the Project Site, and will be a useful amenity for both workers at STAMP, the Town of Alabama community at-large, and residents of the Whitney Creek watershed.

The Preferred Master Plan to be developed for the Project Site is designed to integrate the Project into the existing community fabric. The cutting of trees on hedge rows will be avoided to the maximum extent practicable. All trees located within the Project Site will be protected to the maximum extent practicable in order to ensure that the Project Site retains a rural character. Beyond the areas immediately surrounding the Project Site, views of the buildings to be located thereon will be extremely limited due to the relatively flat topography, densely forested areas, and mature tree heights. The design of specific buildings, structures, signs, and general streetscape, in addition to building materials selected, will be high-quality and will be chosen to reflect the rural agricultural vernacular of the areas surrounding the Project Site.

There will be two main entry points to the Project Site. At full build-out, a boulevard entry will extend from NYS Route 77-63 to the heart of the Project Site. However, Crosby Road will be the Phase 1 access point to STAMP, and will be the internal spine that connects the various development areas together, as well as links the internal road network. The intersection of Crosby Road and the boulevard entry from NYS Route 77-63 will lead to and define the center of STAMP (Figure 4-9).

Parking and service areas will be associated with the various development sites, and will be built to serve the needs of the build-out of each parcel. Parking is envisioned as surface lots throughout the Project Site. The ultimate number of parking spaces built will be in accordance with the zoning requirements set forth for the district in the Technology Zoning District category developed for the Project as part of this DGEIS.

Project Components

The following building types and elements are fundamental components in the establishment of an advanced manufacturing site. Ultimately, the building layouts illustrated in the Preferred Alternative (Figure 4-7) will respond to the needs of companies that locate at the Project Site. The exact placement of buildings within the various development areas will respond to market demand and building prototypes proposed by the individual companies that locate at the Project Site. Should the proposed total development remain within the development numbers set forth in Table 4-1 above, further review under SEQRA will not be required. Reviews and permitting, as required by the Town of Alabama, will occur on a development-by-development basis, as companies decide to locate at the Project Site.

4.5.1 Technology Manufacturing

Technology manufacturing uses will be located on the low-lying, less visible portion of the Project Site, distant from the hamlet of Alabama. Advanced manufacturing facilities, commonly referred to as “fabs” within the industry, consist of related buildings where the actual manufacture and/or assembly of technological components occur. In addition, depending on the technology, a series of utility

buildings and warehouse areas are required to support the manufacturing facilities themselves. These uses are illustrated in the dark purple color (Figure 4-7).

Advanced manufacturing facilities typically require contiguous buildable areas no less than 250-500 acres in size in order to accommodate the factories, their related components and storage areas, a service yard for delivery and movement of components, parking for employees and other vehicles, stormwater management areas, and ample setbacks and buffer zones from adjacent development.

The size of advanced manufacturing buildings themselves relates to the technology being focused upon. For instance, semiconductor facilities are typically multi-story buildings with larger footprints, while photovoltaic manufacturing facilities are typically one-story buildings with generally smaller footprints. Typical building heights vary from 30-110 feet depending on the particular technology. The tool sets that create the varied outputs of the advanced manufacturing facilities, along with the production flows for the manufacture of goods, also influence the size, shape and configuration of a given factory. Table 4-2 illustrates typical advanced technology sectors and their site requirements.

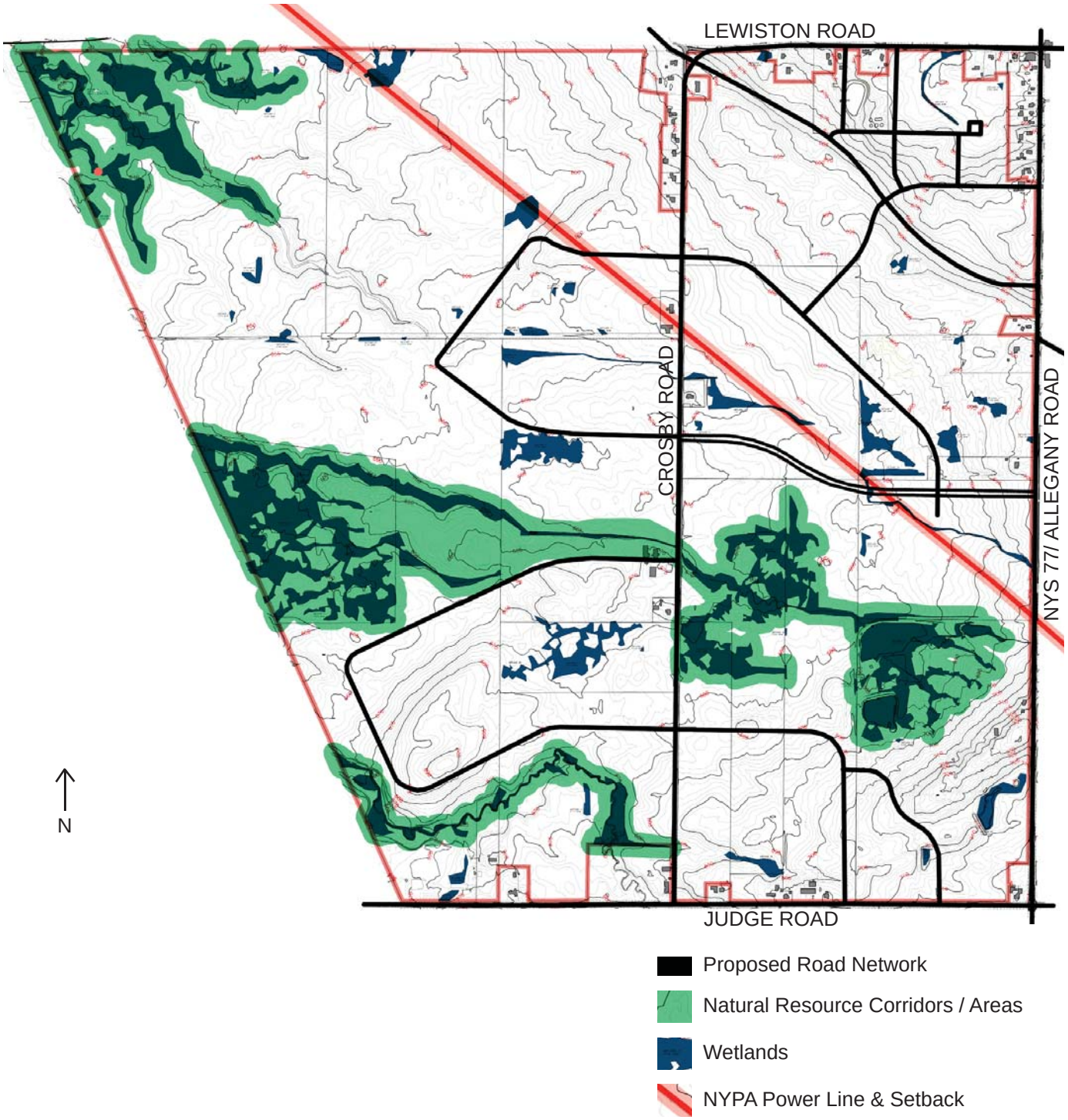
TABLE 4-2
Typical Site Requirements for Advanced Manufacturing Facilities

	Buildable Site Area (Acres)	Building Area (SF)
Semiconductor Range	200-250	1-2.5M
Flat Panel Display Range	200-250	1-3M
MEMS/Nano Range	20-100	0.2-0.8M
Pharma/Biotech Range	20-150	0.2-1.5M
Med Devices/Imaging Range	10-40	0.2-0.7M
Photovoltaic Range	80-200	1-4M
Data Center Range	20-100	0.4-2M

For the purpose of this DGEIS, a variety of technology sectors were considered in the layout of the overall Project Site, and their generalized locations are outlined in the Technology Zoning District document (Appendix J) developed for this DGEIS. In addition, advanced technologies are evolving by the day, and the ultimate size of buildings and their precise locations will be determined by the market at the time a company decides to locate at the Project Site.

4.5.2 Flex Space Support Uses

Smaller-scale support uses are predominately located on the eastern portion of the Project Site nearer to Allegany Road/NYS 77-63 and the hamlet of Alabama. These buildings will consist of uses that support the workings of the advanced technology manufacturing buildings. Some examples of typical flex/support uses in this context are mask and gown production facilities and manufacturers of components



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Figure 4-9
Preferred Alternative - Road Network

Town of Alabama, New York

necessary for the core manufacturing processes. These uses are denoted in the light purple color (Figure 4-7).

Because this use category considers flexible buildings and a range of uses, particular site sizes necessary for each building will be determined by the company locating in such a building at the Project Site. In addition to the building floor plans, sites will include service and parking areas, as appropriate, as well as buffers, setbacks, and stormwater management facilities as outlined in the Technology Zoning District (Appendix J).

In terms of the Preferred Alternative, 45,000 square foot floor plans are illustrated as an average size. Most flex buildings require a service yard or loading docks, at a minimum, in order to load goods on trucks to supply the advanced manufacturing facilities. Depending on the specific use, parking will be necessary for employees, as well as visitor parking for potential vendors and the like. A maximum building height for this category of building types is 30 feet.

For the purpose of this DGEIS, a 45,000 square foot building footprint was used in the layout of the overall Project Site, and the generalized locations of buildings are outlined in the Technology Zoning District document (Appendix J). In addition, the components and companies needed to support advanced technology manufacturing are evolving by the day, with the overall industry requirements, so the ultimate size of buildings and their precise locations will be determined by the market at the time a company decides to locate at the Project Site.

4.5.3 Office Support Uses

Another support building type developed at advanced technology campuses are office buildings. In some cases, office buildings are constructed immediately adjacent to advanced manufacturing buildings to support specific individual companies, such as corporate headquarters for the adjacent advanced manufacturing company. However, office buildings are also developed for independent companies whose functions generally relate to the high tech industry. These buildings might be conceived as corporate headquarters, research and development facilities, or speculative office buildings that may be subdivided and leased to smaller companies. These uses are illustrated in orange (Figure 4-7).

Because there are many types of offices and office uses, particular site sizes necessary for each building will be determined by the company locating in such a building at the Project Site. In addition to the building footprints, sites will include service and parking areas, as appropriate, as well as buffers, setbacks, and stormwater management facilities as outlined in the proposed Technology Zoning District (Appendix J).

In terms of the Preferred Alternative, 20,000 square foot floor plans, typically referred to as Class “A” office space, are illustrated as an average size. Office buildings may be larger to accommodate a specific tenant, or separate buildings may be linked together in a corporate headquarters application. In addition, some buildings may be subdivided and leased by a master developer. Most office buildings require a service entry and/or loading dock for typical deliveries.

Depending on the specific developer or tenant, parking will be necessary for employees, as well as visitor parking and drop-off areas. Office buildings will range from single-story to multi-story structures depending on which Technology District zone they are located in.

For the purposes of this DGEIS, requirements for office buildings are outlined in the proposed Technology Zoning District (Appendix J). Office buildings, their ultimate layout within the Project Site, as well as individual building heights and configurations, will depend on each specific company locating at the Project Site.

4.5.4 Retail Support Uses

Supporting retail uses are planned as an extension of the rural-town feel and character of the Town of Alabama, and are arranged around a new town green. Retail support uses are intended to compliment both the scale and character of the hamlet, and support both STAMP and the general needs of the community. Examples of potential support retail uses are restaurants, small stores, convenience uses (i.e., dry cleaners and coffee shops), and small offices for businesses that prefer to be in the hamlet setting, such as attorneys, doctors, and accountants. This area of the plan will link to the greater STAMP development by a road and trail extending diagonally southwest over the Project Site's ridgeline. Retail support uses are illustrated in red (Figure 4-7).

Lot sizes for such uses will vary, and will need to accommodate parking and service entries, as necessary. Such retail support uses will be tied together with public sidewalks, street trees, and potentially on-street parking along the new roads to extend the hamlet expression into the Project site.

Retail support buildings will be sized and suited to the character and scale of the hamlet of Alabama. Building heights will also closely match those of the existing buildings in the hamlet so that this area truly feels like an extension of the hamlet.

For the purposes of this DGEIS, the building sizes, blocks, and parking areas were considered in the layout of the overall Project Site, and their generalized locations are outlined in the proposed Technology Zoning District (Appendix J). Retail uses at the Project Site, including the ultimate size of buildings and their precise locations will be determined by the market at the time businesses decide to locate at the Project Site.

4.5.5 Multi-Use Town Hall and Community Center / Demonstration Center

Representatives of the Town of Alabama have voiced their intention to replace the existing Town Hall in the near future. Upon re-building, the opportunity to link other vital community needs together in the same facility becomes possible. As a way to create a meaningful gateway into the Project Site and adjacent hamlet of Alabama, a potential site for a future town hall was identified near the corner of NYS Route 77-63 and Judge Road, illustrated in yellow (Figure 4-7).

Some desired uses to be included in the town hall complex are Town of Alabama offices, community rooms, a museum to celebrate the heritage of the Town,

recreation facilities, and an environmental center to take advantage of the nearby headwater stream and associated wetlands. The trail system running through the Project Site would tie into this complex, and the entire area could be viewed as a public park. Parking and service areas, as needed, would be developed in concert with the town hall complex, which is being thought of as a series of small buildings that could be constructed over time as funding and needs arise.

Alternative sites for a proposed town hall complex may be explored as the Project builds out over the next several years.

4.5.6 Recreation and Open Space

The recreation and open space design at the Project Site takes cues from the natural features of the land, and incorporates those features within the Project development. Significant open space is preserved in keeping with the rural, agricultural character of the area. Retention and enhancement of significant natural corridors, including wetlands and forested stream buffers, provide character in keeping with that of this rural area. In addition, a public pedestrian trail network is planned throughout the Project Site, and will link to the hamlet. The Project Site will allow workers, as well as Town residents, an amenity to use and enjoy.

The Preferred Alternative (Figure 4-7) sets forth a conceptual route for the trail. As sites are developed within the Project Site, the ultimate route will be determined. It is envisioned to link the various development sites together, and to connect into the hamlet for use of the public at large.

4.6 Project Phasing and Timing

The Project will be developed incrementally in phases and in response to market demand and other economic factors, such as funding and the interest of the development community. The phasing strategy for the Project is to attract an advanced manufacturing company to the Project Site to “anchor” Phase 1 development. Once this anchor manufacturing company is secured, a variety of supporting uses will likely be attracted to the Project Site, along with additional manufacturing facilities.

Phase 1 development is thought of as 1 million square feet of advanced manufacturing space, as well as the requisite on-site improvements necessary to attract this user, though the exact size and type of facility will depend on market demand.

In terms of infrastructure, Table 4-3 summarizes the utility requirements and demands necessary to accommodate an advanced manufacturing facility.

TABLE 4-3
Typical Utility Requirements for Advanced Manufacturing Facilities

	Water (GPD)	Sewer (GPD)	Power Watt-Hour Peak	Gas Therms/Yr.
Semiconductor Range	4-8M	3-7M	50-100M	3.6-7.2M
Flat Panel Display Range	4-8M	3-7M	50-100M	3.6-7.2M
MEMS/Nano Range	0.5-1M	0.4-1M	15-40M	1-3M
Pharma/Biotech Range	0.01-0.5M	0.01-0.5M	10-50M	3.6-26M
Med Devices/Imaging Range	Municipal	Municipal	Municipal	Municipal
Photovoltaic Range	0.5-2.3M	0.4-1.7M	51-208M	3.6-14.4M
Data Center Range	300,000	14,000	100-500M	Minimal

4.7 Public Need and Benefits from the Project

The Project's central purpose is to play a significant role in reversing a trend of economic stagnation that has affected the Western New York region in recent years. The need for reversing this trend may be seen locally in 2010 US Census figures indicating declines in population for both the Town of Alabama and Genesee County over the last ten years, as described more fully in Section 6.10.1. The Proposed Action will result in a number of benefits that have the potential to mitigate this trend in a substantial way.

Specific anticipated benefits are:

- Create good-paying, 21st century jobs in the local community.
- Reduce the "brain-drain" of young people leaving the community.
- Provide increased revenues to support local community services.
- Provide enhanced utility infrastructure, such as water, sewer, natural gas, and broadband.
- Reduce local property taxes.
- Demonstrate sustainable development.
- Create a "place" of pride in the community.

The Project will achieve these benefits by developing a world-class high technology manufacturing center, with a potential focus on renewable energy, serving as an economic development engine central to the economic sustainability and well-being of the western region of New York State. STAMP will provide economic development opportunities not currently offered in the region, and will offer a variety of jobs for the residents of the Town of Alabama, Genesee County, and the Greater Buffalo-Niagara and Rochester regions. The Project will augment the region's existing

economy through the development of jobs and businesses competitive in a global technology marketplace.

With the influx of new, high paying advanced manufacturing jobs, STAMP will be a major catalyst in helping to stem the tide of years of decline in Western NY's manufacturing base and help foster economic stability. Economic stability will in turn lead to enhanced social viability and the ability of communities to plan and protect the sustainability of their economies and natural resources.

Economic benefits associated with the Project will be substantial and are summarized as follows:

- At full build-out, STAMP will comprise approximately 6.1 million square feet of employment-supporting building space with a total estimated assessable value of $760.5 million.
- STAMP will support over 9,000 full-time-equivalent (FTE) jobs at full build-out and occupancy.
- STAMP employment is projected to generate direct annual wages of $531.9 million at full build-out and occupancy (2011 dollars).
- Total economic output is projected to equal approximately $4.6 billion at full build-out and occupancy, including secondary economic impacts.
- Indirect wages (wages not directly attributed to STAMP employers) are projected to equal $761.3 million at build-out and occupancy, reflecting indirect employment of over 7,000 FTE jobs.
- Construction phases are projected to support 1,400 to 2,900 direct and indirect FTE jobs during the duration of development, with total earnings ranging from $40.8 million to $83.8 million.
- Property tax rates are projected to decrease due to significant increases in the tax base from STAMP:
    - The Town of Alabama could realize a decrease in the tax rate per $1,000 in value from $1.11 to $0.11.
    - Genesee County could realize a decrease in the tax rate per $1,000 in value from $9.82 to $7.97.
    - Oakfield-Alabama School District could realize a decrease in the tax rate per $1,000 in value from $23.73 to $16.94.
- Total recurring annual state income taxes are projected to equal approximately $33.6 million at full build-out and occupancy.
- Retail operations are projected to generate annual sales taxes of $2.3 million each to the County and State.

4.8 Property Ownership / Site Control

Discussions between the Project Sponsor and the owners of the twenty-three (23) land parcels comprising the Project Site have been active, open, and under way since the inception of the Project over four (4) years ago.

4.9 SEQRA Process

4.9.1 Overview

SEQRA requires state and municipal governmental agencies to consider, in advance of making decisions, the environmental consequences of their actions and to weigh alternatives and mitigate potential significant adverse environmental impacts to the maximum extent practicable. The basic purpose of SEQRA is to incorporate the consideration of environmental factors into the existing planning, review and decision-making processes of state, regional and local governmental agencies at the earliest possible time. To accomplish this goal, SEQRA requires that all agencies determine whether the actions they undertake, fund or approve may have an environmental impact and, if it is determined the action may have a potential significant adverse impact, prepare or request an environmental impact statement.

On December 18, 2009, GCEDC declared its intent to act as Lead Agency in order to complete a SEQRA assessment of the Project. In conformance with the SEQRA regulations, GCEDC mailed out its intention to act as Lead Agency to all potential involved and interested agencies. On January 26, 2010, thirty (30) calendar days after its notice, GCEDC passed a resolution accepting its role as Lead Agency and issuing a Positive Declaration for the Project requiring the preparation of a DGEIS. GCEDC further directed that a Draft Scoping Document for the DGEIS be prepared and sent to all applicable involved agencies and interested agencies, and that a public comment period be established for review of the Draft Scoping Document.

The SEQRA review process for the Project has involved or will involve the following steps:

- A scoping process was completed by GCEDC which identified the issues/methodologies that were used to evaluate potential significant adverse environmental impacts resulting from the Project in this DGEIS. As part of the scoping process, a Final Scoping Document was prepared and accepted by GCEDC on April 1, 2010.
- As Lead Agency, GCEDC facilitated the preparation of this DGEIS in order to analyze potentially significant adverse environmental impacts that may result from the Project; address issues identified during the Final Scoping Document; and propose measures designed to mitigate any potential significant adverse environmental impacts to the maximum extent practicable.
- After GCEDC determines that the DGEIS is complete, a Notice of Completion for the DGEIS will be distributed by GCEDC in accordance with SEQRA requirements and published in NYSDEC's Environmental Notice Bulletin

("ENB"). Copies of the DGEIS will be distributed to all involved and interested agencies, made available at a public repository, and placed on GCEDC's website at www.gcedc.com. One (1) public hearing will be held to solicit comments on the DGEIS (notice of the hearing will be published in appropriate local newspapers at least 14 days in advance) and a minimum 30-day public comment period on the DGEIS will be held.

- Following the close of the comment period on the DGEIS, all comments received in writing and at the public hearing will be reviewed and incorporated into a final GEIS ("FGEIS") for the Project, including all necessary revisions, additions, and clarifications to the document, as well as categorized responses to comments received.
- Once deemed completed by GCEDC, copies of the FGEIS will be distributed to all involved agencies and made available at the public repositories, and a Notice of Completion of the FGEIS will again be published in the ENB.
- Following a minimum 10-day period after the publication of the Notice of Completion for the FGEIS, a Statement of Findings in accordance with SEQRA will issued by GCEDC and filed with all involved agencies completing the SEQRA review process for the Project.

4.9.2 Generic Environmental Impact Statement

Section 617.10 of the SEQRA regulations (6 N.Y.C.R.R. § 617.10) permits Lead Agencies to prepare a GEIS when there is a need to assess a wide variety of impacts at a more conceptual level on a larger geographic area, rather than on a project-specific or site-specific basis.

A GEIS deals in a broad or conceptual way with a number of related or similar actions or one large, extended action. It is used when the proposed action is so large and developed over time, with so many uncertainties about specific impacts, that a conventional environmental impact statement ("EIS") is impractical. A GEIS that is prepared before development or other activities are proposed give agencies and the public an opportunity to plan their courses of action to avoid or mitigate potential adverse environmental impacts. A GEIS may include site-specific analysis for components of a proposed action that are well defined, and yet establish thresholds for impacts of project elements that are more conceptual and/or are not fully developed at the time of the assessment. When the GEIS covers a specific geographic area, it is helpful if it identifies the important elements of the natural resource base, as well as the existing and projected man-made features, patterns and character.

A GEIS can be less specific in detail in most respects than a conventional EIS. A GEIS may be used on a conceptual basis, such as the overall idea for a project, without specifics as to the project's design. It may also discuss the general constraints and consequences of any narrowing of future options.

4.10 Required Permits and Approvals

Table 4-4 includes the approvals and permits anticipated to support the development proposed by the Preferred Master Plan.

TABLE 4-4
Required Permits and Approvals

Re-Zoning and Site Plan approval	Town of Alabama, Genesee County Planning Board
Approval of Water Plans	Genesee County Dept. of Health
Major Entrance Permit	NYS Department of Transportation
Utility Work Permit for Infrastructure	NYS Department of Transportation
Public Water Supply Permit	NYS Department of Environmental Conservation
SPDES	NYS Department of Environmental Conservation
SPDES General Permit for Stormwater	NYS Department of Environmental Conservation
Chemical Bulk Storage (if required)	NYS Department of Environmental Conservation
Sanitary Sewer Approval	NYS Department of Environmental Conservation
Section 404 Clean Water Act (wetlands, if required)	US Army Corps of Engineers
Article 24 - Environmental Conservation Law	NYS Department of Environmental Conservation
Article 15 – Environmental Conservation Law	NYS Department of Environmental Conservation
Title V Air Permit, State Facility Permit or Air Facility Registration (if required)	NYS Department of Environmental Conservation
Historic Preservation Project Review	NYS Office of Historic Preservation
Electrical Connection	NY Independent Systems Operators, NY Power Authority, Rochester Gas & Electric, and National Grid

5. DISCUSSION OF PROJECT ALTERNATIVES

Alternatives examined in this section represent three separate levels of consideration: 1) Regional site selection analysis across Western New York; 2) Site alternatives analysis within Genesee County; and 3) Alternatives for use and layout of the preferred site location.

Levels 1 and 2, the regional site selection analysis and the site alternatives analysis within Genesee County, are described in Section 5.2 Evolution of Project Site Alternatives below.

Following the Evolution of Alternatives section, the level 3 analysis that considered site-specific use and layout of the preferred site location is summarized in four separate sections: 5.3 No-Build Alternative; 5.4 Existing Zoning Alternative; 5.5 Cluster Residential Alternative; and 5.6 Preferred Alternative (also referred to as the "Preferred Master Plan").

The level 3 alternatives for use and layout of the preferred site location evaluate the potential scope and range of development of the Project Site for comparative analysis and consideration. Other alternatives for use and layout of the preferred site location were evaluated and discarded as either infeasible or less desirable than the recommended use and layout shown in the Preferred Alternative. These alternatives offer a potential range and scope of development of the Project Site and are evaluated in a level of detail to allow for comparative analysis and consideration as prescribed by the SEQRA provisions explained below.

5.1 SEQRA Alternatives Analysis Requirements

Section 617.9(b)(5)(v) of the SEQRA regulations states that an environmental impact statement must contain a description and evaluation of the range of reasonable alternatives to the action that are feasible, considering the objectives and capabilities of the Project Sponsor. Although it is not necessary to consider all possible alternatives, those that achieve the same or similar objectives of the Project Sponsor, have relatively the same or reduced environmental impacts, and can be implemented in a timeframe similar to that of the proposed action should be considered. In determining the scope of alternatives to be considered, the emphasis is on "what is reasonable."

Section 6197.9(b)(5)(v) further provides that the description and evaluation of each alternative should be at a level of detail sufficient to permit a comparative assessment of the alternatives discussed. It is well established law under SEQRA that "the degree of detail with which each alternative must be discussed will vary with the circumstances and natures of each proposal." *King v. Saratoga County Board of Supervisors*, 223 A.D.2d 894 (3d Dep't. 1996, aff'd 89 NY2d 341 (1996)).

According to the NYSDEC, the test for whether the level of detail and alternative analysis is acceptable is to ask if the information provided is sufficient for a decision maker to identify the alternative that minimizes or avoids adverse environmental impacts to the maximum extent practicable.

SEQRA requires analysis of the no action alternative, and also prescribes the range of other alternatives that may be evaluated as appropriate to a given action. The no action alternative analysis should evaluate both the adverse and beneficial changes to the Project area that are likely to occur in the reasonably foreseeable future, in the absence of the proposed action. The range of other alternatives may also include, as appropriate, alternative sites, technology, and scale of magnitude, design, timing, use and types of actions.

This DGEIS examines the evolution of alternatives considered by the Lead Agency, as well as discusses the required no action alternative and a range of reasonable alternatives as appropriate with regard to the Project area, the Project Site, and what is permissible under the current zoning laws.

The following alternatives to the Project are described and evaluated beginning in Section 5.3 below: No-Build Alternative; an Existing Zoning Alternative; a Cluster Residential Alternative; and the Preferred Alternative (also known as the "Preferred Master Plan"). These alternatives offer potential ranges and scopes of development, and are evaluated at a detailed level to allow for comparative analysis and consideration as dictated by the SEQRA provisions explained above.

5.2 Evolution of Project Site Alternatives

The basic and overall purpose of the Project is to develop a second shovel-ready technology manufacturing site in New York State, located in Western New York for effective geographic dispersion in conjunction with the Luther Forest Technology Campus located in the eastern part of the State (Saratoga County). The Project will enable New York to better compete for global high technology, advanced manufacturing and nanotechnology-enabled manufacturing and research and development (R&D) projects. This, in turn, will provide for great benefits across Western New York (from Buffalo to Rochester) in terms of long-term economic revitalization and high technology job creation.

The global marketplace requires shovel-ready site development, in a campus style setting, where the site under development exceeds 1,000 acres of "greenfield" acreage to qualify for site location consideration by many large-scale high technology, clean technology, and advanced manufacturing type projects. *Site Selection* magazine recently indicated that there are nearly 150 such sites listed across the United States, many of which are actively under development. Many industry experts have confirmed that New York State must do more to invest in and develop additional site locations to continue progress made in high technology-oriented sectors, and to maintain the State's global competitiveness.

With this market-driven input and the opportunity to build on the success being experienced in the nano-sciences, R&D, and nano-oriented manufacturing in the

Capital District of New York, an active strategic initiative was launched, sanctioned, and validated by regional economic development enterprises across Western New York, (including the Buffalo Niagara Enterprise and Greater Rochester Enterprise) to actively develop New York State's second greenfield technology manufacturing site in this region.

Genesee County was identified as a logical location to attempt to develop New York's second greenfield technology manufacturing site for several reasons:

1. **Location/Workforce:** The County is located directly between New York's second and third largest metro areas, Buffalo and Rochester, and as such is an ideal location to attract significant, highly-trained workers to high technology-oriented companies and operations which will ultimately locate at the Genesee County site with reasonable commute times and distances.

2. **Size Requirement:** When considering Western New York communities and the need to assemble 1,000 "Greenfield" acres or greater for a campus-oriented site shovel-ready development, Genesee County is a very effective location given its rural nature and flat topography and proximity to sizable metropolitan communities when compared to other areas across the region.

3. **Utilities:** Significant convergence of industrial class utilities exist in Genesee County, which increases the ability to successfully identify and develop a 1,000-acre or greater site at the lowest possible cost. This is further enhanced by the fact that several of the site alternatives considered in Genesee County are located within the New York Power Authority's Niagara Power Project's low cost, hydro power electric zone.

4. **Transportation:** Proximity to high capacity transportation infrastructure is a critical consideration for high technology companies, given the nature of their goods movement strategies and requirements. Batavia, Genesee County's center city, positions the County very well to offer low-cost options for transportation. As such, a multitude of major state truck and transportation routes, including the New York State Thruway, pass directly and effectively through Genesee County offering low-cost transportation options for high technology companies.

5. **Development Capacity:** GCEDC is recognized as one of the most progressive economic development agencies in New York State; has previously developed multiple shovel-ready industry focused sites; and has the leadership, capacity and community support to successfully undertake a regional project of this nature.

The Project targets green-technology and advanced manufacturing companies involved in developing and manufacturing clean technology, renewable energy and/or energy efficiency products. These companies include photovoltaic solar cell manufacturing (PV), flat panel display manufacturing including medical imaging display, bio-pharmaceutical/nanotechnology-enabled industries, and green technology research and development for energy efficient building products.

An enhanced list of design parameters, which included all of the macro parameters identified above, was established to better assess site viability against local conditions and requirements. The specific requirements of a site to achieve the basic and overall purpose of the Project include:

- Must be a site > 1,000 acres with 250-500 acres suitable for low density, campus style development.
- Must be a large and virtually flat site with manageable environmental constraints.
- Must be in reasonable proximity and accessibility from freeway and major airport.
- Must have or be able to obtain high quality, redundant, low cost energy, 50-200 MW.
- Must be within a 30-mile radius of the NY Power Authority's Niagara hydro power zone surrounding Niagara Falls to qualify for low cost hydropower ($.035 per kilowatt (kW)) in significant quantities to support large-scale technology and advanced manufacturing operations.
- Must be within a 60-minute drive of local and regional labor markets allowing targeted companies to attract qualified employees.
- Must be near available water and sewer infrastructure or have the ability to expand existing systems.
- Must have support of the local community

In addition to the site selection criteria listed above, it is preferable that the site be in a designated development area under Genesee County's Smart Growth Plan to encourage and support county-wide, community-based planning efforts that target the conservation of Genesee County's agricultural and natural resources.

With the influx of new, high paying advanced manufacturing jobs, STAMP will be a major catalyst in helping to stem the tide of years of decline in Western NY's manufacturing base and help foster economic stability. Economic stability will in turn lead to enhanced social viability and the ability of communities to plan and protect the sustainability of their economies and natural resources. In further support of sustainability and conservation, GCEDC initiated natural resource assessments for STAMP including site specific and landscape level analysis. The purpose of these assessments is to identify and integrate natural resource conservation opportunities throughout the development process and support mitigation measures including avoidance, minimization and the development of a high quality mitigation strategy to compensate for potential impacts.

A regional site selection analysis was conducted across Western New York relative to the overall design parameters outlined above. It was concluded that no alternative sites exist relative to the stated macro design parameters noted above, particularly in relation to location of workforce and size requirements. Hence, the

development of a potential 1,000-acre or greater ”greenfield” site in Genesee County best met the basic and overall purpose and established macro design parameters for the Project.

Several potential sites were evaluated within Genesee County in collaboration with engineering, environmental, real estate and advanced technology industry experts. An enhanced list of design parameters necessary to achieve the purpose of the project, which included all of the macro parameters identified above, was established to better assess the site viability against local conditions and requirements. Five individual sites including the Proposed Development were evaluated in Genesee County over a period of 15 to 18 months in 2006 and 2007. All sites were able to meet, or come close to the 1,000+ acre “greenfield” size requirement macro design parameter. These sites were located in several towns across Genesee County, including one (1) in the Town of Batavia; three (3) in the Town of Alabama (including the Proposed Alternative); and one (1) in the Town of Elba.

Site selection criteria represent the first level of evaluation for determining the availability of alternate sites as presented above. The following four (4) sites in Genesee County were evaluated but for varying reasons did not match site selection criteria required to achieve the project’s basic and overall purpose.

Off-site Alternative 1 – Alabama Site A-1

Alabama Site A-1 is approximately 2,634 acres in size, located on the northeast corner of NYS Route 77 and Judge Road (NYS Route 63). A portion of the site overlaps the Project Site between NYS Route 77 and Crosby Road. Almost 350 acres of this site is currently owned by NYSDEC and managed for wildlife at the John White WMA. The site is primarily active agriculture with the exception of roads, residential development, wetlands, and forested areas. While this site could support the necessary utilities, work force, and transportation access, it would have a greater impact to natural resources (i.e., John White WMA), including wetlands. Natural resource impacts and difficulty assembling the necessary properties make this alternative not practicable.

Off-site Alternative 2 – Alabama Site A-2

Alabama Site A-2 is approximately 1,154 acres in size located on the southeast corner of NYS Route 77 and Judge Road (NYS Route 63). The site is a mix of active agriculture, early successional old field with newly restored conservation areas, including wetlands and grasslands, roads, residential development, and small blocks of forested areas. This site is adjacent to Genesee County’s Smart Growth Plan development area. While this site could support the necessary size, work force, and transportation access, it is not a practicable alternative due to the distance from necessary utilities, potential impacts to the community of Basom, high number of individual landowners, and potential natural resource impacts to private land conservation areas protected with conservation easements through the Natural Resource Conservation Service (NRCS).

Off-site Alternative 3 – Batavia Site

The Batavia Site is approximately 871 acres in size located at the southwest corner of NYS Route 98 and Batavia-Elba Townline Road. The site is primarily active agriculture with the exception of roads, residential development, and small amount of wetland and forest habitat. This site meets the size requirement, development capacity, transportation accessibility, workforce requirements, and is adjacent to the Genesee County Smart Growth Plan development area. The Batavia site would not, however, support the necessary utilities to achieve the goals of the project and due to the prime farmland component, land assembly for the purpose of a technology park was discouraged and highly unlikely. This site is not a practicable alternative.

Off-site Alternative 4 – Elba Site

The Elba Site is approximately 1,739 acres in size located at the northeast corner of NYS Route 98 and Batavia-Elba Townline Road. This site meets the size requirement, development capacity, transportation accessibility, and workforce requirements. It is not within or adjacent to the Genesee County Smart Growth Plan development area. Like the Batavia site, this site would not support the necessary utilities to achieve the goals of the project and due to the prime farmland component, land assembly for the purpose of a technology park was discouraged and highly unlikely. There are also potentially significant aquatic resources at this site including wetlands, forest blocks, and a drainage into Spring Creek which bisects the lower third of the site, originating in a large mapped state and federal wetland located just outside of the site boundary. This site is not a practicable alternative.

Table 5-1 below profiles these sites against the Project's basic and overall purposes and the enhanced list of design parameters.

TABLE 5-1
Site Alternatives Design Parameters

Site Alternatives Site Criteria/ Design Parameter	Alabama Site A-3 (STAMP Site)	Alabama Site AI	Alabama Site A2	Town of Batavia Site	Town of Elba Site
1. Location/ Workforce Access	Y	Y	Y	Y	Y
2. Size Requirement	Y	Y	Y	Y	Y
3. Utilities	Y	Y	N	N	N
4. Transportation	Y	Y	Y	Y	Y
5. Development Capacity	Y	Y	Y	Y	Y
6. Land Assembly	Possible	Unlikely	Unlikely	Not Currently Possible	Not Currently Possible
7. Environmental Impact	Moderate	Significant	Significant	Minor	Moderate
8. Creative Class Enviro	Y, Best	Y	Y	Y	Y

Site Alternatives Site Criteria/ Design Parameter	Alabama Site A-3 (STAMP Site)	Alabama Site AI	Alabama Site A2	Town of Batavia Site	Town of Elba Site
9. Development Cost	Best	Good	Good	Costly	Costly

Proposed Alternative

The Project Site, known originally as Alabama Site A3, is 1,337.20 acres in size and is located on the northwest corner of NYS Route 77 and Judge Road. The Project site offers the optimal combination of factors in terms of manageable environmental impact, minor agricultural and farmland impact, likelihood for land assembly success, community support, utilities, transportation access, workforce, and the likelihood for the lowest cost of development given proximity to industrial class infrastructure to achieve the basic and overall purposes of the Project.

The Preferred Alternative (Appendix B) is an illustration of the full, build-out of Project. The Preferred Alternative is the establishment of a high technology campus at the Project Site planned to accommodate approximately 6.1 million square feet of advanced technology manufacturing uses at build-out, providing direct employment for over 9,000 people. Phase 1 is planned to attract an anchor technology manufacturing facility of up to 1 million square feet. Once secured, the anchor facility will attract a variety of technology manufacturing support uses and supporting commercial enterprises.

In alignment with the Town of Alabama's wishes to create employment opportunities to retain local residents, the Preferred Alternative provides a number of new jobs during both the construction and operational phases of the project. No private residences will be developed at the Project Site.

The Project will require additional water and sewer infrastructure to support the advanced manufacturing uses being developed. Extensions to the water system will augment those lines being contemplated by the Town of Alabama's on-going water study. The Project will provide an additional opportunity to expand the reach of broadband to be shared between the Project and residential service. Roads needed to access and connect development parcels will be built over time as is needed by development.

In terms of maintaining the visual character of the community, the Project is planned to visually integrate itself into the existing rural, agrarian setting in a comfortable and compatible manner. Larger technology manufacturing structures are located on the lower, western portion of the Project Site, while the smaller-scale supporting structures are located on the eastern portion of the Project Site to provide a scale transition to neighboring farmland. In addition, significant undeveloped buffer zones are located around the Project Site's perimeter and the campus-like setting of the Preferred Alternative will ensure that open spaces and environmentally sensitive locations are maintained. This type of setting is not only required to preserve the aesthetic of the surrounding community, but to attract and retain the kind of work

force necessary for advanced technology manufacturing. Building materials will be also high-quality and will be chosen to reflect the rural agricultural vernacular of the area.

The Preferred Alternative also represents an evolution of conceptual planning that has resulted in a significant minimization and/or avoidance of impacts to existing surface water, wetlands, stormwater, and cultural/archeological resources. This is clearly demonstrated when a review of the original master plan set forth in the initial Feasibility Study Master Plan is compared with the current Preferred Alternative as show below. For example, the Preferred Alternative has resulted in a reduction of potential wetland impacts from +/- 68 acres to below 10 acres.

In terms of economics, the Project represents an opportunity to bring New York State's significant investment in high technology research, development, and manufacturing to the western region of the State. To date, the Lead Agency has already received inquiries from high technology companies that could be appropriately accommodated at the Project Site. Therefore, there is considerable market demand for such a high technology campus in this area.

5.3 No-Build Alternative

The No-Build alternative considers the future condition and use of the Project Site without construction of the Project. This existing conditions analysis establishes a baseline for comparison of the benefits, impacts, and potential mitigation measures necessary in the development alternatives.

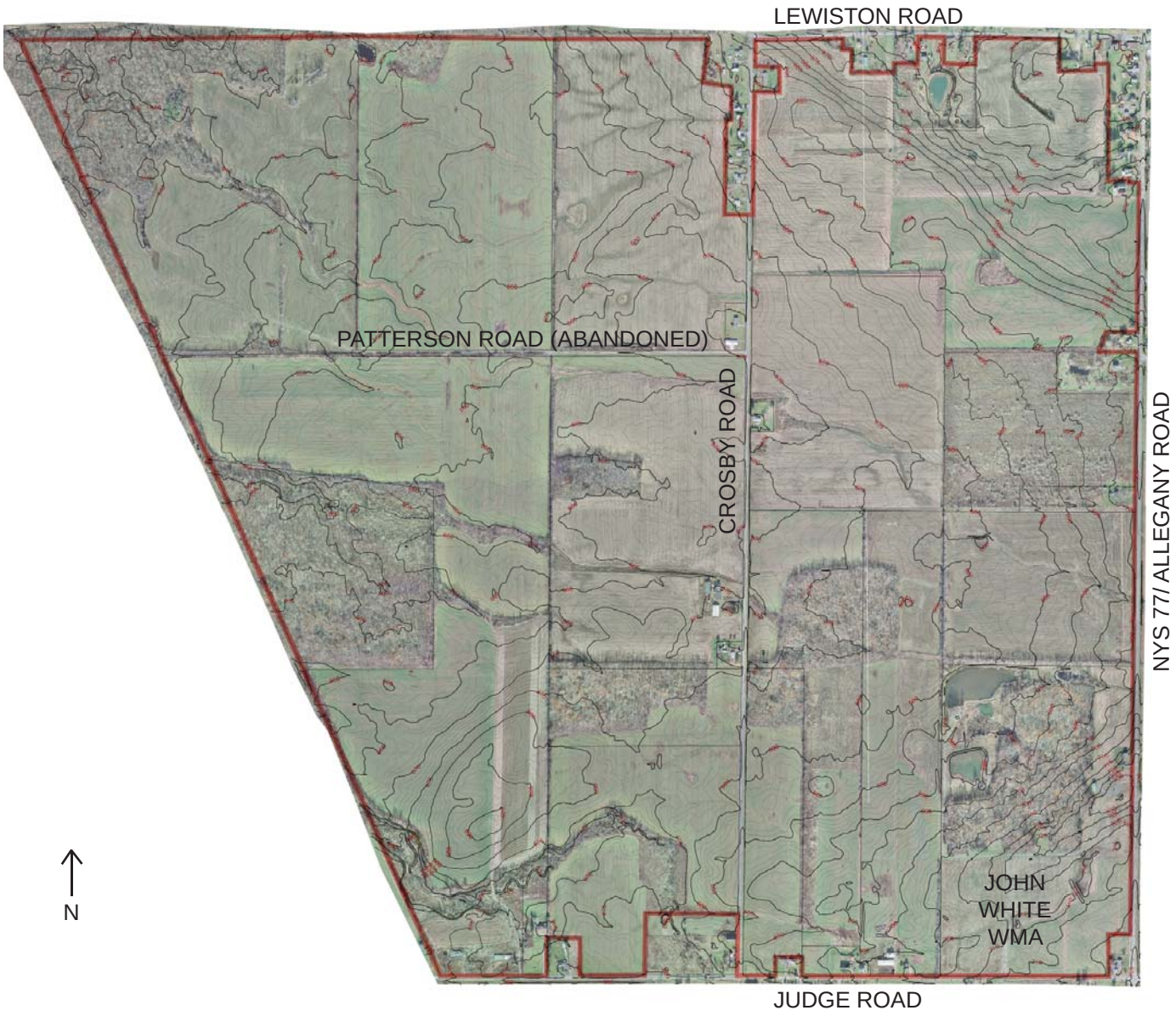
The No-Build Alternative (Figure 5-1) is illustrated in the form of a current orthographic photograph of the Project Site. The No-Build alternative would result in no foreseeable change regarding the current ownership and use of the properties within the Project Site. Scattered residences would remain, and the agricultural lands would be farmed or lay fallow as they are at present, assuming that farm fields that are currently in use may lay fallow and be used again in another season.

In terms of infrastructure, there is no indication that upgrades to the public roads within or adjacent to the Project Site would be made, nor upgrades to the water system, natural gas, electricity, or broadband. In addition, there would be no need to establish a sewer system for the Town of Alabama.

The area within the Project boundary is currently zoned Agricultural-Residential (A-R), and the John White WMA is zoned Land Conservation (L-C) according to the Town of Alabama Zoning Law (Figure 5-2).

By law, the current zoning allows for a significant amount of agricultural and residential development on the Project Site. The No-Build Alternative would not remove the Project Site from agricultural use, nor result in an impact to traffic, visual aesthetics, or wetlands.

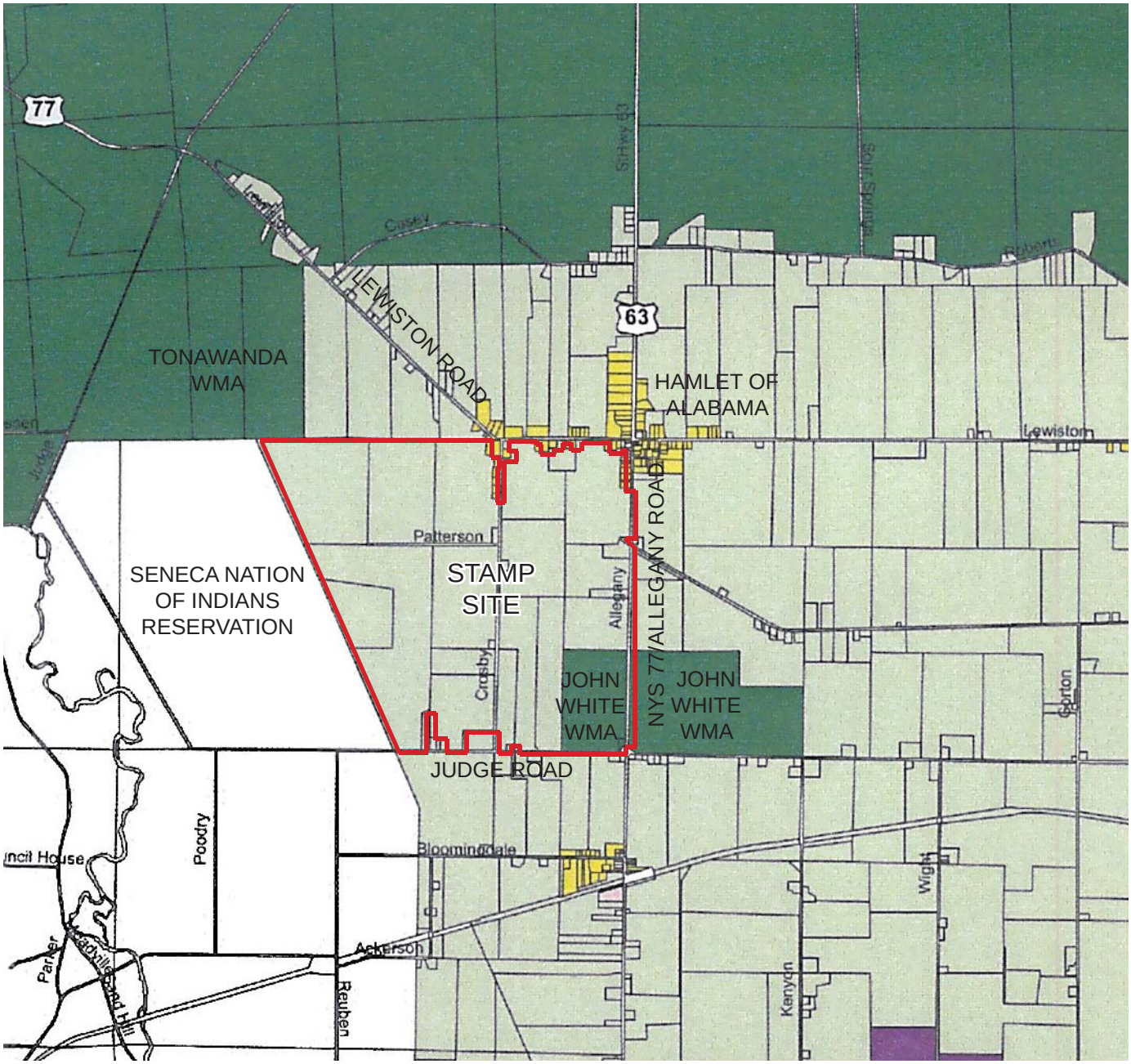
However, the No-Build Alternative will not provide potential significant financial and public utility benefits to the Town of Alabama as that associated with the Preferred Alternative. According to an August 2010 fact sheet published by the American



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Figure 5-1
No-Build Alternative



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Figure 5-2
Existing Town of Alabama Zoning Map

(Source: Oakfield Alabama Comprehensive Plan)

Farmland Trust summarizing over 20 years of "Cost of Community Services (COCS)" studies, the median cost per dollar of revenue to provide public services to working or open land use is $0.29. The Project Site would remain undeveloped and consequently would provide only a minimal contribution to the community tax base.

5.4 Existing Zoning Alternative

The majority of the Project Site is zoned Agricultural-Residential (A-R), with a parcel of approximately 93.8 acres currently zoned Land Conservation (L-C; westernmost portion of the John White WMA, west of NYS Route 77). Pursuant to the Existing Zoning Alternative, the Project Site is illustrated at the highest density allowable by zoning law; that is, subdivided into residential lots under the current Town of Alabama Zoning Law (1987, as amended in November 2006).

Existing parcels are subdivided and roads introduced on a lot-by-lot development basis (Figure 5-3). Lot sizes shown are the minimum allowable as determined by the dates the individual lots were created. Lots created before June 1987 have a 40,000 square foot minimum size with 100-150 foot minimum frontage required. Lots created after June 1987 have a 40,000 square feet minimum size with 200 foot minimum frontage required. The Project Site capacity shown is approximately 950 lots.

Development of the number of residential units shown would likely require introduction of Town-scale water and sewer systems to accommodate the large number of residences developed. In addition, a large number of public roads would need to be constructed to realize the residential development potential of particular existing parcels, based upon their locations, sizes, and configurations.

Throughout the community input process that has been conducted for the Project over the past several years, Town of Alabama elected officials and citizens have voiced considerable opposition to additional residential development in the Town. The Town of Alabama wishes to retain its agrarian character while attracting complementary commercial uses, and does not wish to permit the widespread development of residential subdivisions within its boundary. Neighboring communities, such as the Village of Oakfield and Town of Batavia, welcome residential development. Discussions with both communities indicate they would welcome an opportunity to expand their residential base. This would allow Oakfield and Batavia to accommodate residential demand generated by the Project, while allowing Project employees the opportunity to live in areas located near the Project Site. Development of significant residential subdivisions and structures would eliminate the natural, open vistas characteristic of agriculturally-based communities. New houses would be easily viewed from existing public roads, and would line streets within the Project Site. The widespread installation of impervious surfaces and lawns would also create inordinate amounts of stormwater loading which would adversely impact local water resources.

Residential development consistent with the existing Town of Alabama zoning requirements would result in a significant burden being placed on the Town of

Alabama community services such as fire, police, and ambulatory services. Market studies show that widespread residential development results in an increased burden being placed on such services without a concomitant increase in a community's tax base to cover the expense of such additional demands.

In addition, there is currently no known market demand to drive residential development, as allowed by right, at the Project Site. The Town of Alabama is interested in expanding its employment base to allow current and former residents to work within the local community, and development of the Project Site as a residential subdivision would not allow for any significant economic development opportunities. In sum, residential development of the Project Site under the existing A-R zoning district is inconsistent with the Town's local planning goals and values.

In addition, according to an August 2010 fact sheet published by the American Farmland Trust summarizing over 20 years of "Cost of Community Services (COCS)" studies, the median cost per dollar of revenue to provide public services to residential land use is $1.16. While this imbalance might be partially offset by incremental residential development, this demonstrates that residential development could be a net cost to public resources. This net cost is not sustainable without some offsetting form of land use that can serve as a net income to public resources.

5.5 Cluster Residential Alternative

The Cluster Residential Alternative (Figure 5-4) shows the Project Site master planned according to the Cluster Zoning provisions as permitted by the Town of Alabama Zoning Law. Natural areas and open space are the focus of cluster development, and residential lots are requisitely down-sized due to the amount of open space surrounding them (minimum 25% of Project Site).

Development of the Project Site in a cluster scenario would likely require introduction of Town-scale water and sewer systems to accommodate the closely-spaced residences. A large number of public roads would have to be constructed as well, since an interconnected network of streets would be required to develop the site in a dense manner as allowed under cluster zoning.

Again, throughout the community input process conducted for the Project over the past several years, Town of Alabama elected officials and citizens have voiced significant opposition to additional residential development in the Town. The Town of Alabama wishes to retain its agrarian character while attracting complimentary uses, and does not wish to develop residential subdivisions within its boundary. Neighboring communities, such as the Village of Oakfield and Town of Batavia, welcome residential development. Discussions with both communities indicate they would welcome an opportunity to expand their residential base. This would allow Oakfield and Batavia to accommodate residential demand generated by the Project, while allowing Project employees the opportunity to live in areas located near the Project Site. Development of significant residential structures would also eliminate the natural, open vistas characteristic of agriculturally-based communities. New houses would be easily viewed from existing public roads, and would line streets



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Figure 5-3
Existing Zoning Alternative



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Figure 5-4
Cluster Residential Alternative

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within the cluster residential neighborhood. Furthermore, the cluster residential alternative would not ensure the preservation of open spaces, wetlands, and water resources, as well as potential archeological resources.

Residential development consistent with the existing Town of Alabama zoning requirements would result in a significant burden being placed on the Town of Alabama community services such as fire, police, and ambulatory services. Market studies show that widespread residential development results in an increased burden being placed on such services without a concomitant increase in a community's tax base to cover the expense of such additional demands

In addition, there is currently no known market demand to drive cluster development at the Project Site. The Town of Alabama is interested in expanding its employment base to allow current and former residents to work within the local community, and development of the Project Site as a clustered, residential subdivision would not allow for any significant economic and employment development opportunities.

As with Section 5.4 above, according to an August 2010 fact sheet published by the American Farmland Trust summarizing over 20 years of "Cost of Community Services (COCS)" studies, the median cost per dollar of revenue to provide public services to residential land use is $1.16. While this imbalance might be partially offset by incremental residential development, this demonstrates that residential development could be a net cost to public resources. This net cost is not sustainable without some offsetting form of land use that can serve as a net income to public resources.

5.6 Preferred Alternative

The Preferred Alternative (Figure 5-5) is an illustration of the full build-out of the Project. The Preferred Alternative is the establishment of a high technology campus at the Project Site planned to accommodate over 6 million square feet of advanced technology manufacturing uses at full build-out, providing direct employment for over 9,000 people. Phase 1 is planned to attract an anchor technology manufacturing facility potentially comprised of 1 million square feet. Once secured, the anchor facility will attract a variety of technology manufacturing support uses and supporting commercial enterprises. Table 5-2 below indicates uses and densities proposed by the Preferred Alternative at Project build-out:

TABLE 5-2
Land Use and Density at Build-Out

Land Use and Density at Build-out	Building SF	Floor Area Ratio
Gross Site Area (Acres)		1,337.20
Buildable Site Area (Acres)		618.18
Percentage Buildable Site Area		46%

Technology Manufacturing	4,000,000	
Flex Space	1,400,000	
Office	500,000	
Retail	180,000	
Demonstration Center/Town Hall Multi-Use	50,000	
Subtotal	2,130,000	
Totals	**6,130,000**	**0.11**

In alignment with the Town of Alabama's wishes to create employment opportunities to retain local residents, the Preferred Alternative provides a number of new jobs during both the construction and operation phases of the Project. No private residences will be developed at the Project Site.

The Project will require additional water and sewer infrastructure to support the advanced manufacturing uses being developed. Extensions to the water system will augment those lines being contemplated by the Town of Alabama's on-going water study. The Project will provide an additional opportunity to expand the reach of broadband to be shared between the Project and residential service. Roads needed to access and connect development parcels will be built over time as needed by development. Table 5-3 below indicates utility requirements associated with the Preferred Alternative.

TABLE 5-3
Project Utility Needs at Full Build-Out

Utility Loads at Build-out	Quantity	Unit
Water	3,000,000	GPD
Sewer	3,000,000	GPD
Electric Power	185	MW
Natural Gas	318,600	CFH

In terms of maintaining the visual character of the community, the Project is planned to visually integrate itself into the existing rural, agrarian setting in a comfortable and compatible manner as outlined in the *Visual Impact Assessment* (Appendix R). Larger technology manufacturing structures are located on the lower, western portion of the Project Site, while the smaller-scale supporting structures are located on the eastern portion of the Project Site to provide a scale transition to neighboring farmland. In addition, significant undeveloped buffer zones are located around the Project Site's perimeter, and the campus-like setting of the Preferred Alternative will ensure that open spaces and environmentally sensitive locations are maintained.



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Figure 5-5
Preferred Alternative

This type of setting is not only required to preserve the aesthetic of the surrounding community, but to attract and retain the creative-class work force necessary for advanced technology manufacturing. Building materials will be high-quality and will be chosen to reflect the rural agricultural vernacular of the area.

The Preferred Alternative also represents an evolution of conceptual planning that has resulted in a significant minimization and/or avoidance of potential impacts to existing surface water, wetlands, stormwater, and historical and archeological resources. This is clearly demonstrated when a review of the original master plan set forth in the initial Feasibility Study Master Plan is compared with the current Preferred Alternative as shown (Figure 5-6). For example, the Preferred Alternative has resulted in a reduction of potential wetland impacts from approximately 69 acres to below 10 acres. This reduction in wetlands impacts was accomplished by reorienting proposed development areas and buildings to be more consistent with existing terrain and by preserving and enhancing an existing stream corridor traversing the site.

Other reductions in impacts evident in the Preferred Master Plan include a New Bypass Road to channel Route 77/63 traffic away from the hamlet of Alabama, moving to a distributed concept of stormwater management facilities and adding bioswales at the edges of paved areas to reduce stormwater management system volumes,

In terms of economics, the Project represents an opportunity to bring New York State's significant investment in high technology research, development, and manufacturing to the western region of the State. To date, the Lead Agency has already received inquiries from high technology companies that could be appropriately accommodated at the Project Site. Therefore, there is considerable market demand for such a high technology campus in this area.

With the influx of new, high paying advanced manufacturing jobs, STAMP will be a major catalyst in helping to stem the tide of years of decline in Western NY's manufacturing base and help foster economic stability. Economic stability will in turn lead to enhanced social viability and the ability of communities to plan and protect the sustainability of their economies and natural resources.

Economic benefits associated with the Project will be substantial and are summarized as follows:

- At full build-out, STAMP will comprise approximately 6.1 million square feet of employment-supporting building space with a total estimated assessable value of $760.5 million.
- STAMP will support over 9,000 full-time-equivalent (FTE) jobs at full build-out and occupancy.
- STAMP employment is projected to generate direct annual wages of $531.9 million at full build-out and occupancy (2011 dollars).

- Total economic output is projected to equal approximately $4.6 billion at full build-out and occupancy, including secondary economic impacts.
- Indirect wages (wages not directly attributed to STAMP employers) are projected to equal $761.3 million at build-out and occupancy, reflecting indirect employment of over 7,000 FTE jobs.
- Construction phases are projected to support 1,400 to 2,900 direct and indirect FTE jobs during the duration of development, with total earnings ranging from $40.8 million to $83.8 million.
- Property tax rates are projected to decrease due to significant increases in the tax base from STAMP:
    - The Town of Alabama could realize a decrease in the tax rate per $1,000 in value from $1.11 to $0.11.
    - Genesee County could realize a decrease in the tax rate per $1,000 in value from $9.82 to $7.97.
    - Oakfield-Alabama School District could realize a decrease in the tax rate per $1,000 in value from $23.73 to $16.94.
- Total recurring annual state income taxes are projected to equal approximately $33.6 million at full build-out and occupancy.
- Retail operations are projected to generate annual sales taxes of $2.3 million each to the County and State.



Feasibility Study Plan (2008)



Preferred Alternative Plan

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Figure 5-6
Comparison of Feasibility Study Plan and Preferred Alternative Plan

6. ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND PROPOSED MITIGATION MEASURES

This section examines the existing environmental setting of the Project Site and analyzes the potential significant adverse environmental impacts associated with the Project, as well as the various proposed measures to mitigate or avoid such impacts to the maximum extent practicable, as necessary.

6.1 Geology and Topography

This section examines the current geological and topographical conditions of the Project Site, the potential impacts to soils, topography, and bedrock located at the Project Site, and the potential mitigation measures, if any, to minimize such impacts to the maximum extent practicable.

6.1.1 Existing Setting

The natural topography of the Project Site is a flat to moderately sloping landscape, with the steeper slopes associated with the banks of Whitney Creek.

During the Wisconsin glacial stage of the Pleistocene epoch, Genesee County was completely covered by ice. Although the Wisconsin stage of glaciation has been divided into four substages, only the last two substages occur in this County. In New York State, the substages are called the Valley Heads drift sheet and the Hamburg-Marilla drift sheet (USDA 1969: 172). The project area occurs within the Hamburg-Marilla drift sheet.

In Genesee County, the Hamburg-Marilla drift sheet consists of glacial till deposited as ground moraines and drumlins and in proglacial lacustrine sediments. The glacial till is characterized by a high carbonate content that resulted from glacial scouring of the dolomites of the Lockport group, the dolomitic shales of the Camillus formation of the Salina group, and the dolomites of the Bertie group. In addition, the till has a distinctive red color that came from glacial scouring of the Vernon shale formation of the Salina group (USDA 1969: 172).

The proglacial lacustrine deposits consist dominantly of fine sand and silt laid down in glacial Lake Warren. These deposits occur mainly in the western part of the county, north of US Route 20 (USDA 1969: 172). According to the Soil Survey of Genesee County (USDA 1969) and the Web Soil Survey of Genesee County (USDA-NRCS 2010), there are 30 different soil types within the Project Site. The majority of the soils consist of Odessa silt loam, Collamer silt loam, Lakemont silty clay loam, Canandaigua silt loam, and Niagara silt loam, which together comprise nearly 70% of the soils within the Project Site (Figure 6-1).

Approximately 40 acres or 3% of the Project Site consists of Teel silt loam, Wakeville silt loam, and Wayland silt loam, which is alluvial soils located along Whitney Creek and other unnamed drainages. Teel silt loam is a deep, moderately well drained, nearly level soil that formed in flood plains. This soil has an occasional frequency of flooding and no frequency of ponding. The depth to the water table averages between 18 and 24 inches (46 and 61 cm). The Wakeville series are comprised of deep, somewhat poorly drained, nearly level soils that also formed in flood plains. This soil has an occasional frequency of flooding and no frequency of ponding. The depth to the water table averages between 6 to 18 inches (15 to 46 cm) (USDA-NRCS 2010). And finally, the Wayland series consists of deep, poorly drained, nearly level soils that formed in recent alluvial deposits. The Wayland series are subjected to flooding in early spring. Except during long dry periods of summer, the water table is generally near or at the surface.

6.1.2 Potential Impacts and Mitigation Measures

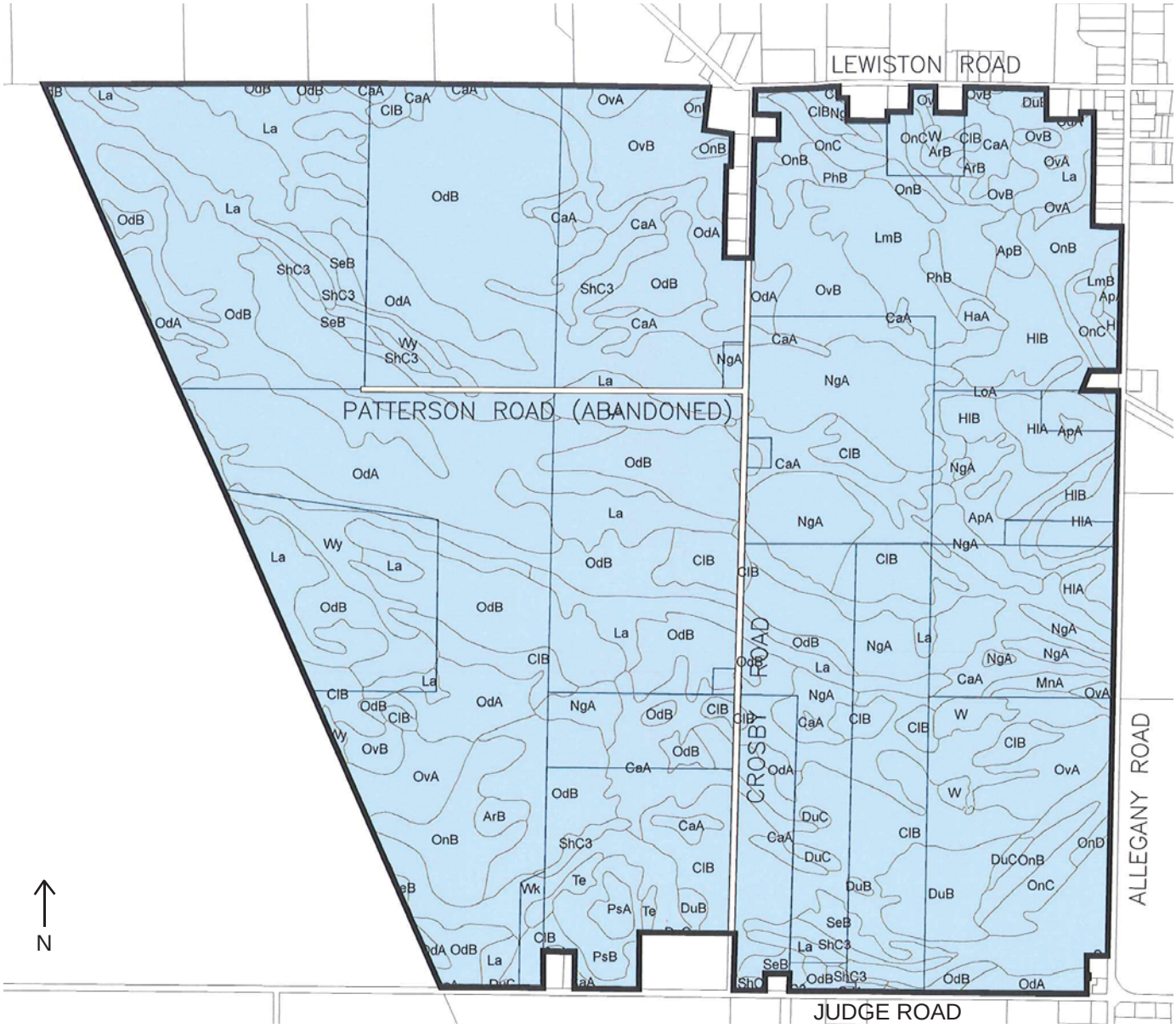
The Project Site's topography will be slightly altered by the proposed action. To achieve required design grades, site topography within the internal roadways will be slightly altered. The Project Site's natural topography will be largely maintained and utilized in order to provide enhanced minimization of the potential visual impacts the Project may have on the surrounding properties. It is further anticipated that grading both on and off the Project Site will be balanced such that the amount of cut is approximately equal to the amount of fill for any given component of the Project. Topography will thus not be significantly altered by this approach.

There is no anticipated adverse impact to bedrock resulting from the Project. There will not be any significant bedrock removal resulting from construction activities. Development within the Project Site is not anticipated to extend to buried bedrock. Buried utilities may be installed within the top surface of bedrock, below frost lines. Such bedrock construction techniques are common to the area and region, and do not present any unusual or unanticipated circumstances.

No adverse impacts to surficial geology are anticipated from the Project. There will not be any significant removal of surficial geologic materials resulting from the Project. Implementation of the Project will result in the local redistribution of some surficial geologic deposits on the Project Site, consistent with future grading plans.

Soils within the targeted development areas of the Project Site do not present any unusual or unanticipated conditions for construction activities. As a result of the Project, significant loss of topsoil is not anticipated. During all phases of construction, topsoil will be segregated and stored for landscaping around the developed areas.

Surficial soils will be affected by excavation and grading work done on the Project and within any potential off-site improvement areas. Native soils will be re-arranged on the Project Site and additional fill, as needed, will be brought to the Project Site to create a level surface for construction of buildings, roadways, and parking lots within the development areas.



Soil types listed and described in Threatened & Endangered Species Investigation Appendix.

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Figure 6-1
Existing Soils

Potential impacts to soil resources include removal of hydric soils from wetlands and on- and off-site erosion and sedimentation that could potentially occur during and after construction. The following BMPs will be implemented on the Project Site to avoid and minimize potential impacts to soils and adjacent undisturbed areas:

- Temporary erosion and sedimentation controls such as silt fences and hay bales will be installed at the perimeter of the construction area, and around any wetland and other waters of the U.S. that is to remain undisturbed. Silt fence will be monitored regularly, and reinforced with hay bales in areas where water flow is observed to be concentrated.
- When feasible, excavated native soils will be used elsewhere on the Project Site for filling and berm construction where appropriate.
- Stockpiled soils will be maintained inside the construction area and may be encircled with silt fence as needed.
- In wetland areas, the top 6 to 12-inches of hydric soils will be segregated and stockpiled. Once the construction activities (i.e., utility installation) are complete, the soils will be replaced in their original layer.
- Sediment traps will be constructed where necessary, to impound stormwater and allow for the settlement of suspended solids. Water will dissipate gradually from sediment traps to minimize the potential for erosion.
- Rip-rap aprons will be established at the outlets of all stormwater pipes, to dissipate the water's energy and minimize scour.
- Temporary erosion and sediment controls will be monitored regularly and repaired as needed. Erosion and sediment controls will be maintained until soils are stabilized. Typically soils are considered stabilized once at least a 70 percent uniform coverage of perennial vegetation is established.
- All disturbed areas on-site will be stabilized, seeded, and mulched. Stabilization will include final grading and the placement of erosion controls as needed. The Natural Resource Conservation Service will be contacted before commencement of the Project to obtain recommendations on appropriate seed mixtures, soil amendments and mulch to be used on-site for specific reasons.

Construction of the Project will not have a significant adverse impact to soils on the Project Site and surrounding project area, provided that the above-outlined BMPs are implemented and regularly maintained.

6.2 Water Resources

This section examines the water resources located at the Project Site and evaluates these resources within the context of the surrounding watershed. The analysis provided examines the groundwater, wetland, and surface water resources located on-site as well as those specifically located within the proposed development areas.

This section also provides an overall assessment of the surrounding watershed and summarizes the mitigation sequence (avoidance, minimization, and compensation) utilized to reduce impacts and mitigate any potential significant adverse impacts the Project may have on water resources.

6.2.1 Existing Conditions

Surface Water and Wetlands

The surface water resources mapped on the Project Site include approximately 122 acres of mixed wetland types and approximately 33,900 linear feet of streams, ditches and drainage ways (Figure 6-2). The Project Site can be characterized as having gentle to moderate slopes with intermittent streams; the Project Site does not lie within any FEMA 100-year flood plain.

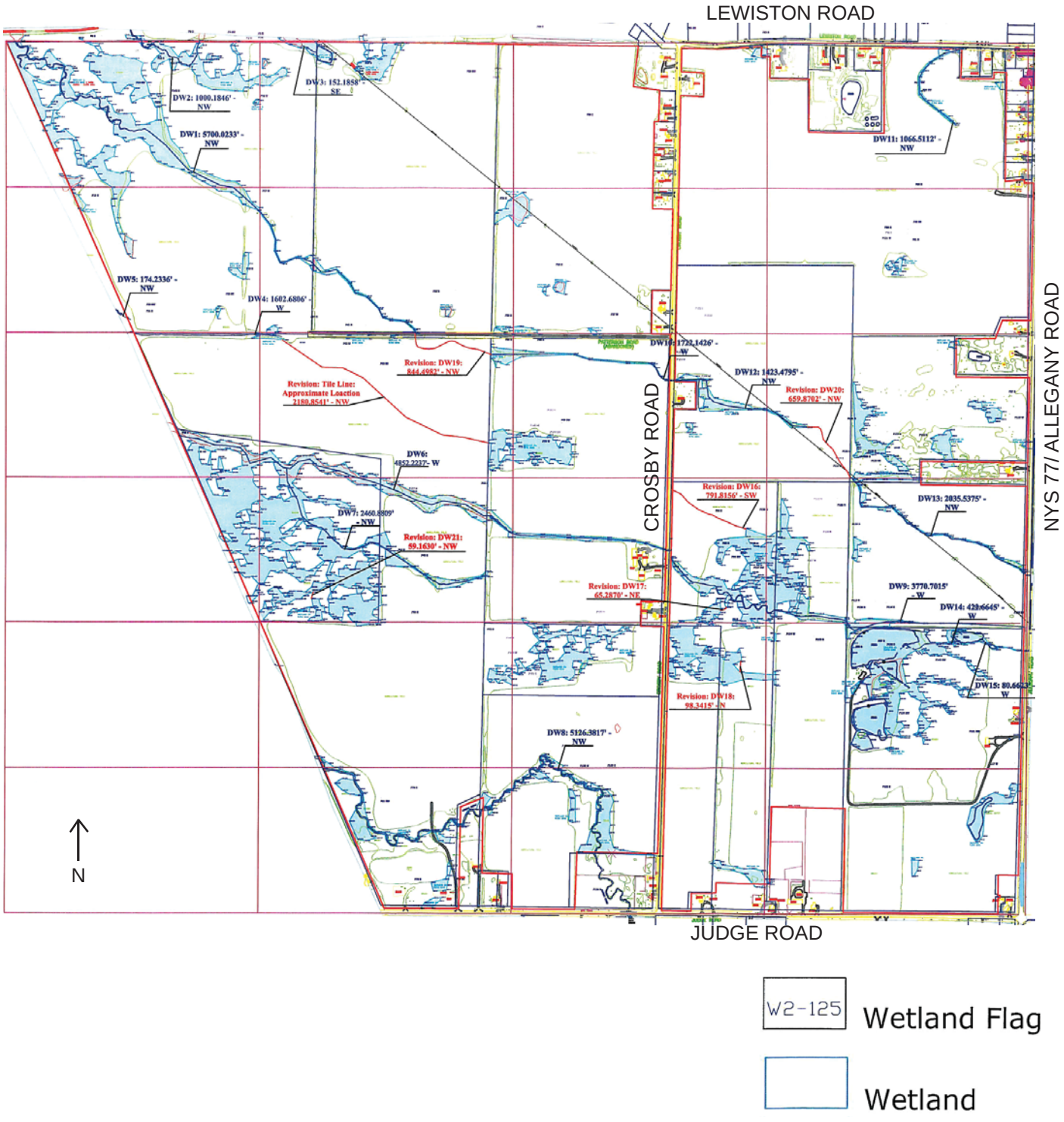
With respect to existing drainage patterns, the Project Site has been divided into four (4) distinct drainage catchment areas with associated design points. There are three streams within the Project Site, two of which are unnamed (unnamed stream #1 and unnamed stream #2), and the third is Whitney Creek. Both the existing drainage catchments and the streams are shown in the *Stormwater Management Preliminary Report* (Appendix E).

A preliminary review of available information pertaining to vegetation, soils, and hydrology in the Project Site was implemented prior to conducting a field investigation at the Project Site. Sources of information included the United States Geological Survey (USGS), Natural Resources Conservation Service (NRCS), National Wetland Inventory (NWI), and NYSDEC Freshwater Wetland maps. The USGS, NRCS, and NWI maps all indicated the potential for wetlands under federal jurisdiction at the Project Site. There are currently no wetlands that have been identified as being subject to New York State jurisdiction pursuant to the official NYSDEC map.

A field delineation of aquatic resources was conducted in Spring 2010 using methodology specified by the Corps of Engineers Wetlands Delineation Manual (January 1987) and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (October 2009) to map all aquatic resources meeting federal criteria (Appendix C).

In addition to mapping wetland boundaries and drainage ways, assessment data were collected in Spring 2010 to determine the condition and quality of existing wetlands and to describe the primary functions and services they provide (Appendix D). Assessment methods were based on the USACE New England Highway Method (USACE 1995) and the Delaware Rapid Assessment Procedure (Jacobs 2007).

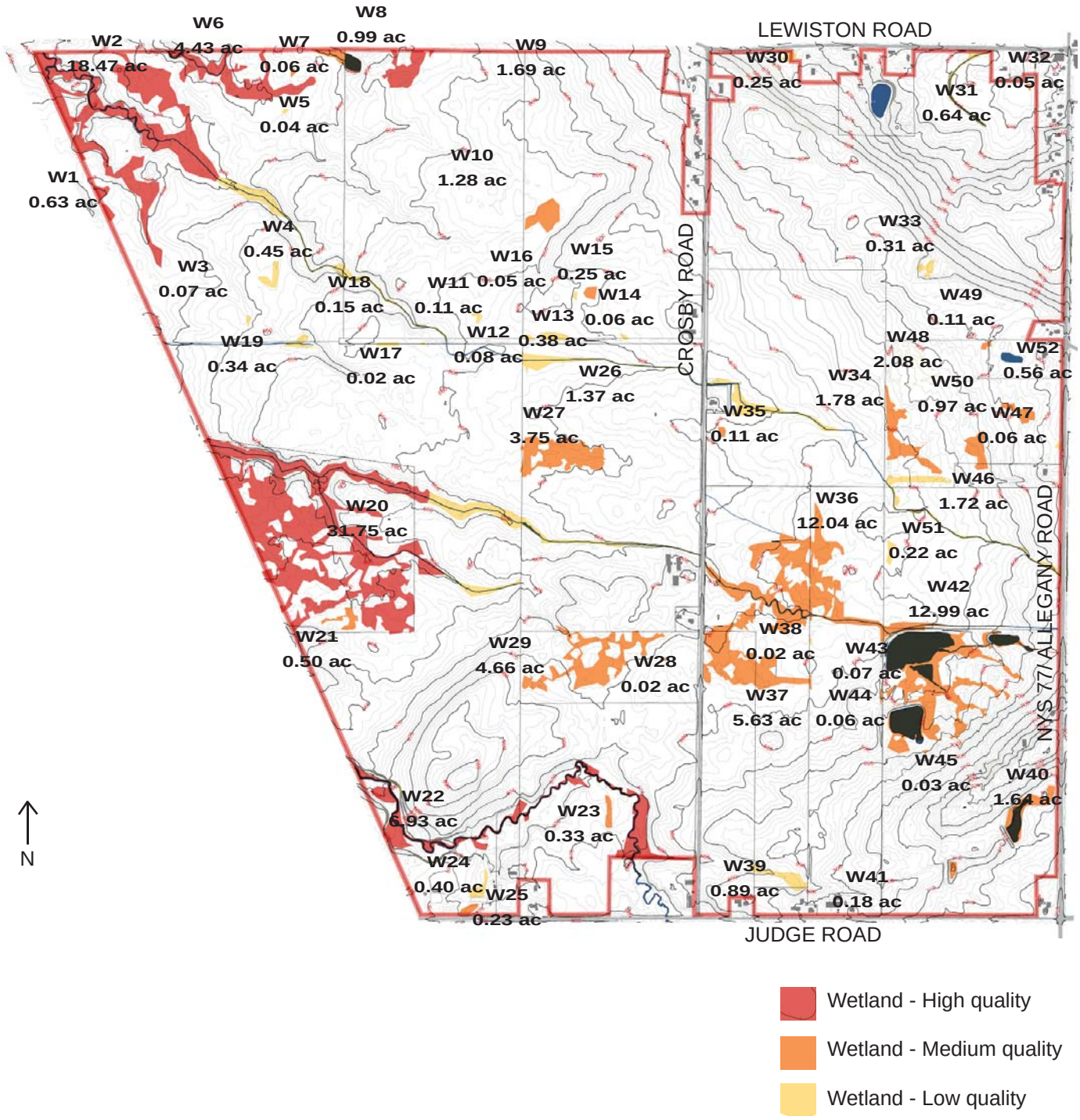
Locations and types of all delineated wetlands are noted on the Project Site (Figure 6-3). Table 6-1 provides a list of the 52 wetlands delineated on-site with their identification number, community type [palustrine forested (PFO), palustrine emergent (PEM) or palustrine scrub-shrub (PSS)], size, preliminary jurisdiction, primary functions and values, and a condition rating.



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Figure 6-2
Existing Wetlands & Surface Waters



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Figure 6-3
Existing Wetlands on Project Site

TABLE 6-1
Existing Wetlands and Associated Technical Information

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
Wetland 1 Parcel 1	PFO Hardwood Swamp and PEM Cattail Marsh, adjacent to active farming, high quality, subdued kettle hole on the lake plain	0.63	USACE/ NYSDEC	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	High
Wetland 2 Parcel 1 & 2	PFO Floodplain Forest and PFO Hardwood Swamp, with linear water course through farmed areas, linear features, include reed canary grass (RCG), nice uplands within, some areas shrubby in field, few openings, adjacent to active farming, high quality, slight micro-depressions, lake plain, kettle holes	18.47	USACE/ NYSDEC	floodflow alteration, nutrient removal, wildlife habitat, potential t/e species habitat	High/ Low
Wetland 3 Parcel 1	PSS scrubby, fragmented by farming, overgrown with vines, invasive species, debris, adjacent to active farming	0.07	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 4 Parcel 1	In hedge row, PEM/PSS, scrubby, RCG, adjacent to active farming	0.45	NON		Low/ Medium
Wetland 5 Parcel 1	PFO hardwood swamp, fragmented by farming, small, adjacent to active farming	0.04	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low/ Medium
Wetland 6 Parcel 1	PFO hardwood swamp, edges contain invasive species, adjacent to active farming, dissected lake plain, flowing water in SW direction in concave trough	4.43	USACE/ NYSDEC	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	High
Wetland 7 Parcel 1	PEM Shallow Emergent Marsh, fragmented by farming, small, adjacent to active farming	0.06	NON	nutrient removal, wildlife habitat	Medium
Wetland 8 Parcels 1 & 2	PFO Hardwood Swamp and PSS Shrub Swamp, contains farm pond with fish, adjacent to active farming	0.99	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife	Medium/ High

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
				habitat	
Wetland 9 Parcel 2	PFO Hardwood Swamp, adjacent to active farming, high quality, nearly level micro-relief, lake plain, power line right of way through wetland	1.69	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	High
Wetland 10 Parcel 3	PEM Shallow Emergent Marsh, farmed, possibly contains contaminants, water stagnant adjacent to active farming	1.28	NON	nutrient removal, wildlife habitat	Medium
Wetland 11 Parcel 2	PEM- Reed Canary Marsh (RCG), adjacent to active farming, concave	0.11	NON	nutrient removal, wildlife habitat	Low
Wetland 12 Parcel 3	PSS Shrub Swamp, in hedgerow, adjacent to active farming	0.08	NON*	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 13 Parcel 3	PSS Shrub Swamp, in hedgerow	0.38	NON*	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 14 Parcel 3	PSS Shrub Swamp, in hedgerow, adjacent to active farming	0.06	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 15 Parcel 3	PEM Shallow Emergent Marsh, man-made farm pond, adjacent to active farming, ground moraine, concave	0.25	NON*	nutrient removal, wildlife habitat	Medium
Wetland 16 Parcel 3	PEM Shallow emergent marsh reed canary grass, adjacent to active farming	0.05	NON*	nutrient removal, wildlife habitat	Low
Wetland 17 Parcel 8	PSS Shrub Swamp, in hedgerow, adjacent to active farming	0.02	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 18 Parcel 8	PSS Shrub Swamp, in hedgerow, adjacent to active farming, slightly concave	0.15	NON	floodflow alteration, sediment/toxicant retention, nutrient	Low

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
				removal, wildlife habitat	
Wetland 19 Parcel 8	PSS Shrub Swamp, in hedgerow, adjacent to active farming	0.34	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 20 Parcels 7, 8, 9	PFO Floodplain Forest, PSS Shrub swamp and PFO Hardwood Swamp, with linear water course through farmed areas, includes reed canary grass nice uplands within, some areas shrubby in field, few openings, adjacent to active farming, concave drainage way, concave, lake plain, kettle hole	31.75	USACE/ NYSDEC	floodflow alteration, nutrient removal, wildlife habitat, potential t/e species habitat	High/ Low
Wetland 21 Parcel 7	PFO Hardwood Swamp, adjacent to active farming, hemlock swamp within as well as vernal pools	0.50	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	Medium
Wetland 22 Parcel 8, 21	Whitney Creek corridor, Class C- non-trout, PFO Hardwood Swamp, some invasive species, fish present in channel, fringe of wetlands/floodplains, adjacent to active farming, high quality, concave, small farm dump area located by D28	6.93	USACE	floodflow alteration, nutrient removal, wildlife habitat, potential t/e species habitat	High
Wetland 23 Parcel 21	PEM Shallow emergent marsh adjacent to active farming	0.33	USACE	nutrient removal, wildlife habitat	Medium
Wetland 24 Parcel 8	PEM Phragmites marsh adjacent to active farming, lake plain, concave	0.40	NON	nutrient removal, wildlife habitat	Low
Wetland 25 Parcel 8	PEM cattail marsh adjacent to active farming, adjacent to road, concave drainage way	0.23	NON	nutrient removal, wildlife habitat	Low/ Medium
Wetland 26 Parcel 9	PEM/PSS linear water course through farmed areas, includes reed canary	1.37	USACE	nutrient removal, wildlife habitat	Low

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
	grass, some areas shrubby in field, adjacent to active farming, concave				
Wetland 27 Parcel 9	PFO Hardwood swamp, fragmented edges from farming, squared wood edges, upland islands within, farm pond or old farm dump within some logging trails present and/or debris, adjacent to active farming, wetland hummocks	3.75	NON*	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Medium
Wetland 28 Parcel 20	PFO Hardwood swamp, small, adjacent to active farming	0.02	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	Medium
Wetland 29 Parcel 20	PFO Hardwood swamp, fragmented from farming, squared wood edges, upland islands within, some logging trails present and/or debris, adjacent to active farming, vernal pools present	4.66	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	Medium
Wetland 30 Parcel 6	PSS Shrub Swamp, along road/ part of road side ditch, adjacent to active farming, lake plain, concave	0.25	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 31 Parcel 6	PSS Shrub Swamp-scrubby, Old channel scar, adjacent to active farming, lake plain, concave and convex, ground moraine, convex slope to maintained drain, old foundation found, some debris at southern end.	0.64	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 32 Parcel 6	PEM Shallow Emergent/Cattail Marsh, adjacent to active farming	0.05	NON	nutrient removal, wildlife habitat	Medium
Wetland 33 Parcel 6	PFO Hardwood Swamp with some shrubs, some open water, garbage, somewhat disturbed from farming,	0.31	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife	Low/ Medium

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
	adjacent to active farming, ground moraine, concave, excavated pit			habitat	
Wetland 34 Parcel 11	PEM/PSS linear water course through farmed areas, include reed canary grass, some areas shrubby in field, adjacent to active farming, irregular topography, slightly altered, lake plain	1.78	USACE	nutrient removal, wildlife habitat	Low
Wetland 35 Parcel 11	PEM Shallow Emergent Marsh, overgrown and scrubby, some debris, old foundation within wetland area, adjacent to active farming	0.11	NON	nutrient removal, wildlife habitat	Medium
Wetland 36 Parcels 16, 17, 18, 22	PFO Hardwood Swamp, fragmented edges from farming, squared wood edges, upland islands within, some logging trails present and/or debris, adjacent to active farming, lake plain, nearly level with microtopography, concave drainage way	12.04	USACE/ NYSDEC	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	Medium
Wetland 37 Parcels 16, 17, 22	PFO Hardwood Swamp, fragmented edges from farming, squared wood edges, upland islands within, some logging trails present and/or debris	5.63	USACE/ NYSDEC	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat, potential t/e species habitat	Medium
Wetland 38 Parcel 16	PSS Shrub Swamp, in hedgerow, adjacent to active farming	0.02	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Low
Wetland 39 Parcels 16, 22	PEM/PSS linear water course through farmed areas, include reed canary grass, some areas shrubby in field, adjacent to active farming	0.89	USACE	nutrient removal, wildlife habitat	Low
Wetland 40	Man excavated pond/ PEM	1.64	USACE	nutrient removal,	Medium

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
Parcel 23	Shallow Emergent Marsh			wildlife habitat	
Wetland 41 Parcel 23	Man excavated pond/ PEM Shallow Emergent Marsh	0.18	NON	nutrient removal, wildlife habitat	Medium
Wetland 42 Parcel 23	PFO Hardwood Swamp, fragmented edges from land manipulation from game farm development, manmade ponds and trail system within, slightly concave,	12.99	USACE/ NYSDEC	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Medium
Wetland 43 Parcel 23	PEM Shallow Emergent Marsh	0.07	USACE	nutrient removal, wildlife habitat	Medium
Wetland 44 Parcel 23	PEM Shallow emergent marsh	0.06	USACE	nutrient removal, wildlife habitat	Medium
Wetland 45 Parcel 23	PEM shallow emergent marsh, part of trail edge at wood line, tire ruts	0.03	USACE	nutrient removal, wildlife habitat	Medium
Wetland 46 Parcel 18 &12	PEM/PSS linear water course through farmed areas, include reed canary grass, some areas shrubby in fields, very dense in spots	1.72	USACE	nutrient removal, wildlife habitat	Low
Wetland 47 Parcel 12	PEM Shallow emergent marsh, roadside, Phragmites and reed canary grass, concave, recessional moraine	0.06	NON	nutrient removal, wildlife habitat	Low
Wetland 48 Parcel 12	PSS- shrub swamp, successional shrubland, very dense in spots	2.08	USACE	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Medium
Wetland 49 Parcel 12	PSS- shrub swamp, successional shrubland, very dense in spots	0.11	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Medium
Wetland 50 Parcel 12	PSS- shrub swamp, successional shrubland, very dense in spots	0.97	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Medium
Wetland 51 Parcel 18	PFO/PEM hardwood swamp and reed canary grass marsh in hedgerow	0.22	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife	Low/ Medium

Wetland Number/ Parcel Number (s)	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Primary Functions/Values	Condition
				habitat	
Wetland 52 Parcel 12	PSS- shrub swamp, successional shrubland, very dense in spots	0.56	NON	floodflow alteration, sediment/toxicant retention, nutrient removal, wildlife habitat	Medium

***Pending assessment of tile drainage**

An approved jurisdictional determination and boundary confirmation are currently being completed by USACE and NYSDEC. The majority of wetlands located on the Project Site were ranked low-to-medium quality based on factors including hydrological disturbance, presence of invasive species, adjacent land use, fragmentation, human activity, deforestation, etc. There were several wetlands that were ranked high quality (Wetlands numbered 2, 6, 9, and 20; Figure 6-3) based on connectivity, presence of native, diverse vegetation communities, and wildlife habitat potential. Depending on condition, the primary functions and values provided by wetlands on the Project Site include flood-flow alteration, nutrient removal/retention/transformation, sediment/toxicant retention, and wildlife habitat.

Three main drainages flow east to west across the Project Site fed by small ephemeral and intermittent ditches and drainage ways (Figure 6-4). These streams, ditches, and drainage ways combined make up a total of approximately 33,900 linear feet of streams, ditches, and drainage ways on the Project Site. Whitney Creek (DW8) cuts across the southwest corner of the Project Site. A drainage corridor bisects the Project Site north of Whitney Creek (Unnamed Stream #2) beginning with DW15 and includes a significant area of relatively intact headwater wetlands and stream habitat. A third, more severely impacted drainage corridor (Unnamed Stream #1) bisects the Project Site to the north of the second corridor beginning with DW13. This third corridor, along with the majority of other drainage features and wetlands on the Project Site have been heavily impacted by ditching, draining, deforestation of buffers, and associated farming activities.

Groundwater and Stormwater

The Project Site is located within the Erie-Niagara groundwater region. Groundwater in this region occurs in unconsolidated glacial and alluvial deposits, and in the underlying bedrock.

Unconsolidated Deposits

The unconsolidated deposits within the Project Area are primarily glacial tills. According to the "Erie-Niagara Basin, Ground Water Resources" report, prepared by the New York State Water Resources Commission (La Sala, 1968), only small supplies of groundwater are available from the till. Within the till, there are occasional sandy, glacio-fluvial deposits that locally may contain quantities of

groundwater sufficient for domestic use, however represent an unreliable source for anything other than small domestic / residential use.

Groundwater within the unconsolidated deposits is recharged by approximately 34 inches of precipitation annually (NOAA, 2011). Regional groundwater discharge is to the Tonawanda Creek and its tributaries within the drainage basin as base flow. Localized flow direction is based upon local stream discharge locations.

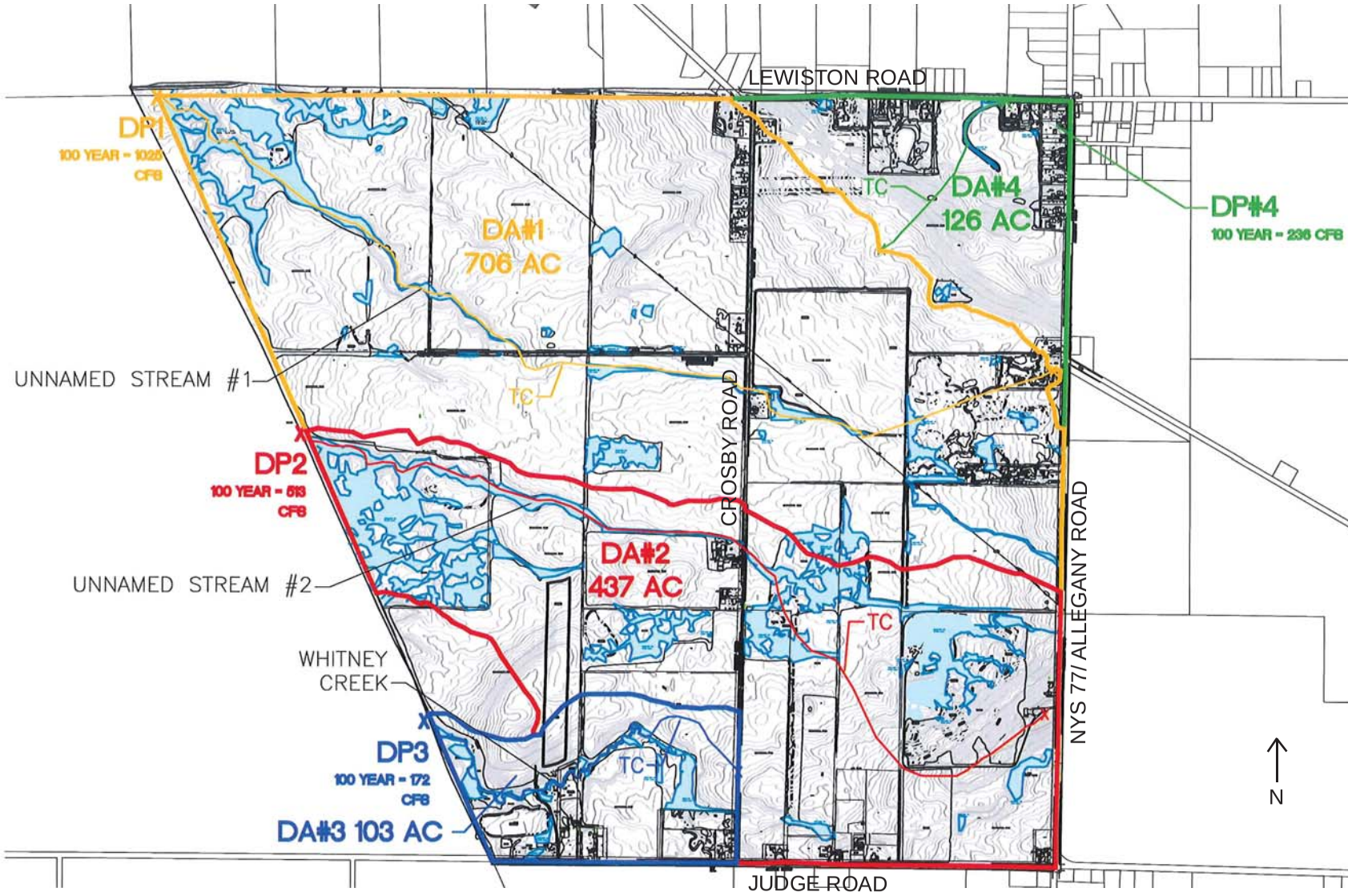
Bedrock Deposits

Groundwater occurs in the bedrock in the Camillus Shale Formation underlying the site. The Camillus consists of interbedded shales, carbonates (dolomites and limestone), and gypsum. Groundwater occurs within this formation in fracture zones and solution zones (primarily in the gypsum and carbonates). Bedrock fractures zones typically yield only small to moderate groundwater supplies. The solution zones associated primarily with gypsum dissolution zones can yield moderate quantities of groundwater, however, the water quality is typically poor with hardness and sulfates typically very high. These zones are also typically in direct hydraulic connection with surface water as recharge which also complicates bedrock groundwater use as a public water supply. Localized groundwater flow direction in the bedrock is controlled by fracture and dissolution channels.

Watershed Assessment

A watershed assessment of Whitney Creek (a sub-watershed of the Niagara River) was conducted to provide a broader context of the surrounding landscape to guide design and development strategies at the Project Site, and to identify conservation priorities and mitigation strategies at the Project Site and within the surrounding watershed. A key function of the watershed assessment is to analyze land use features of local and regional watersheds that encompass the Project Site in order to evaluate the connection between natural resources on the Project Site and Project Site-specific and watershed conservation priorities. The watershed assessment also provides a landscape-level perspective useful in consideration of the mitigation actions discussed below. This section provides an overview of the watershed assessment.

The Whitney Creek Watershed [modified based on actual flow from Middle Tonawanda Hydrologic Unit Code (HUC): 041201040304 and Oak Orchard HUC: 041300010403] has a drainage basin of 12,810 acres and is associated with the Niagara River Watershed which flows eventually into Lake Ontario (Figure 6-5). Based on 2001 Land Use Land Cover (NRCS 2001) and current aerial imagery, Whitney Creek Watershed is dominated by agriculture (47%); forest and forested wetlands (26%); and non-forested wetlands (17%). Only 4% of the watershed has been developed (Figure 6-6). Approximately 5,160 acres (40%) of the watershed is publicly owned by State or federal agencies preserving a large, intact area of natural lands in the northwest portion of the watershed. Agricultural, developed areas, and habitat fragmentation are prevalent in the southeastern, headwater portion of the watershed. This headwater area has very little forest cover, and significantly more wetland loss based on existing land cover, wetland, and soils data. The streams in

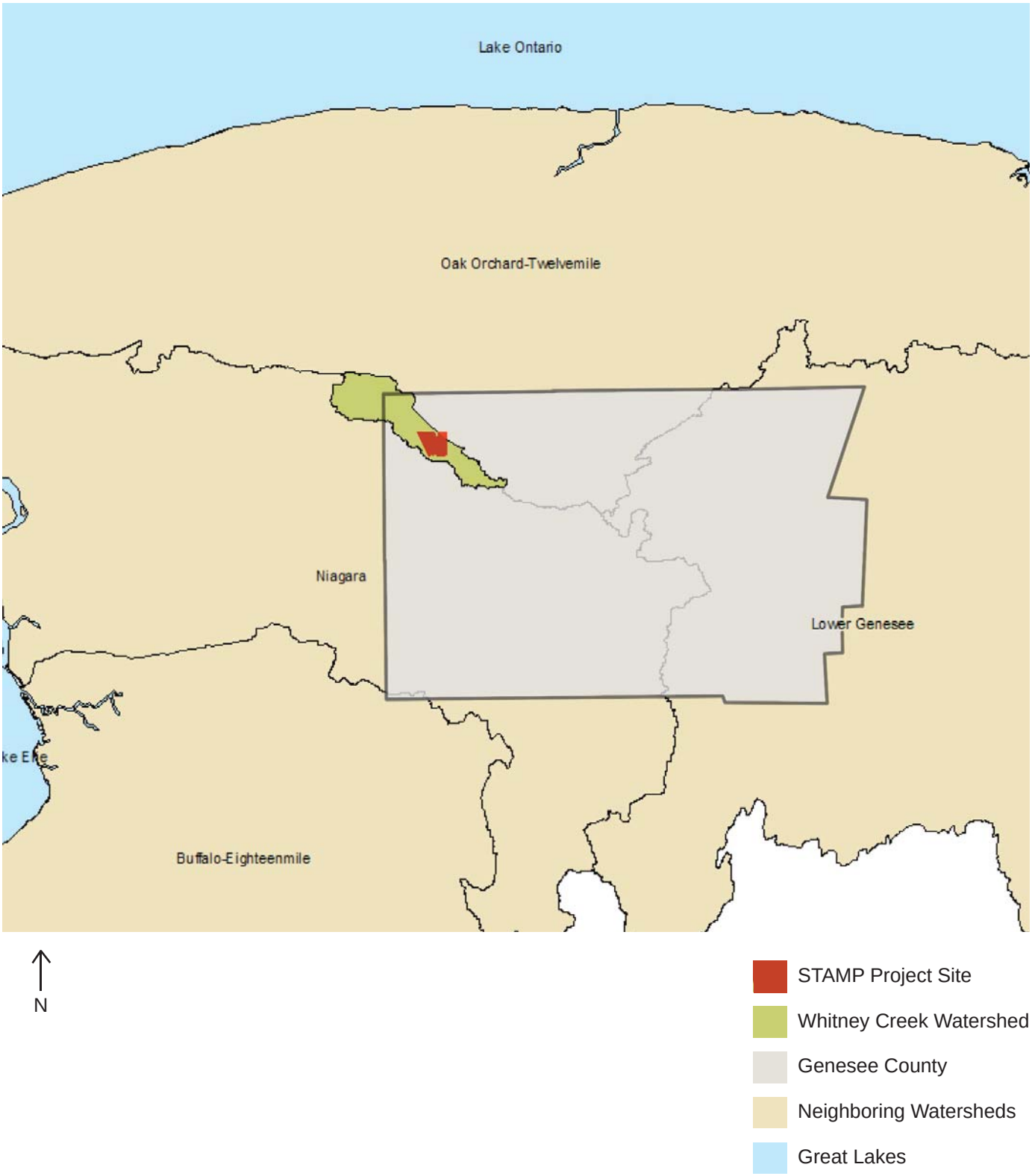


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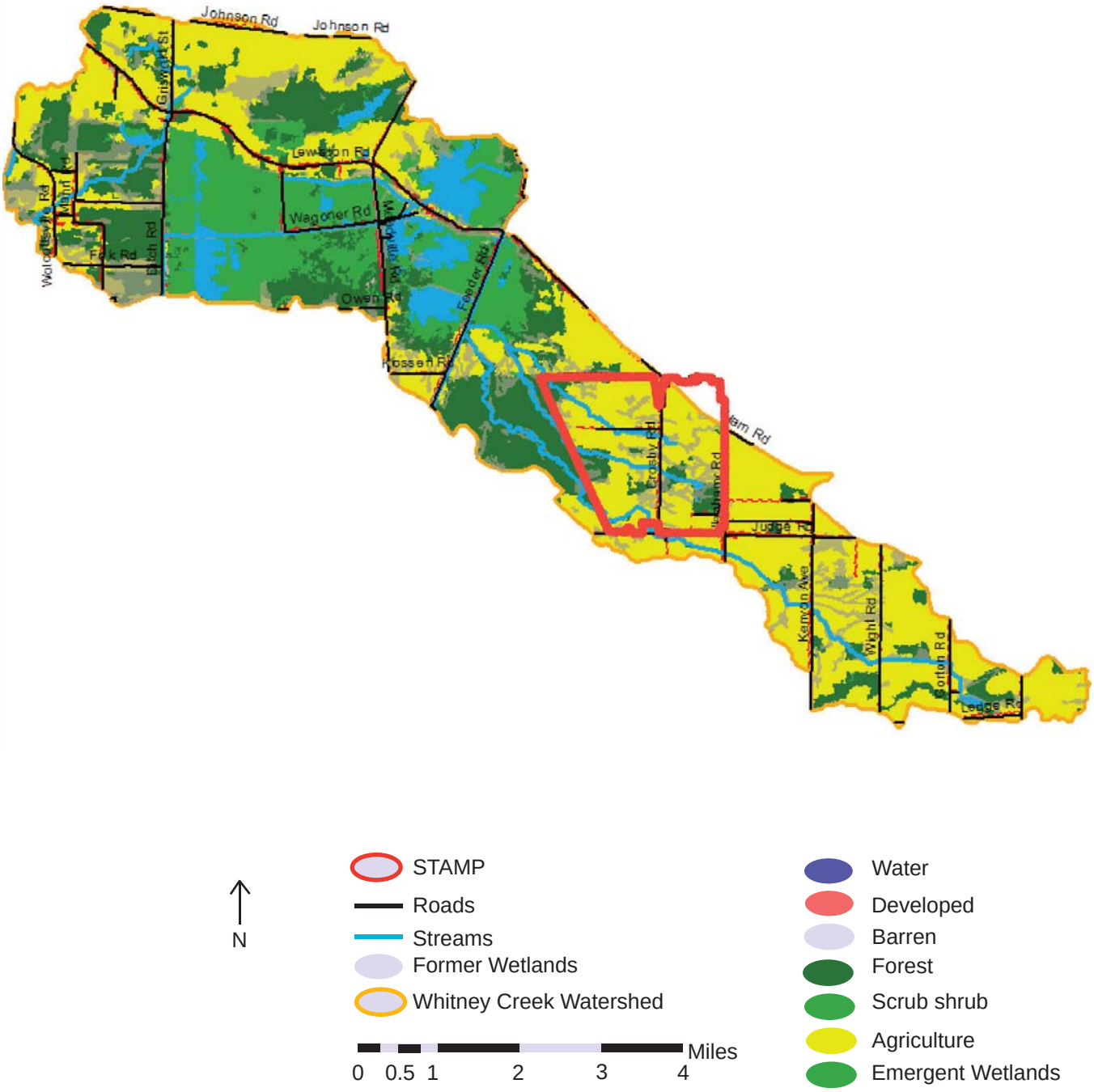
Figure 6-4
Existing Drainage Map



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Figure 6-5
Location Map of
Whitney Creek Watershed



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Figure 6-6
Whitney Creek Watershed
Detail Map

the southeastern section of the watershed are not well protected and much of the stream length lacks forested buffer due to adjacent high intensity land uses.

An approximation of historic wetlands for the Whitney Creek Watershed was developed based on soils classified as >80% hydric (soils >80% of a soil map unit classified as hydric by the Natural Resource Conservation Service) and current NWI and NYSDEC-mapped wetlands. Former wetlands were defined as areas that are mapped hydric soils (>80% of map unit) but not mapped as wetlands based on the latest wetland maps. Historically, approximately 41% of the land area of the watershed was wetland. Based on the most recent wetland maps, 36% percent of the watershed area is currently wetland which constitutes a very small overall loss in wetlands. A comparison of NWI and NYSDEC mapped wetlands at the Project Site to the results of the actual wetland delineation map, which shows much greater wetland acreage, support the trend seen elsewhere in this region that there are more wetlands than are currently mapped – suggesting this loss is even smaller. The greatest wetland loss is evident in the southeastern portion of the watershed along with degradation and loss of forested stream buffers.

Land use planning should build upon the value of the existing natural resources by strategically protecting and restoring lands to maintain and enhance intact habitat in the northwestern reaches of the basin and restore habitats that have been degraded in the southeastern section. Located in the middle of the watershed, at the transition between active agriculture and protected, intact habitats, the Project Site can be developed to protect and improve headwater wetlands, streams, and stream buffers, as well as contribute to the improvement of the water quality, flood reduction, and aquatic habitat on-site and in downstream waters. Based on natural resource assessments conducted at the Project Site and within the watershed, two conservation priorities were identified for the Project in the Whitney Creek Watershed: 1) protect and restore headwater streams and wetlands; and 2) re-establish stream buffers in native vegetative cover.

6.2.2 Potential Impacts and Mitigation Measures

The following potential impacts and mitigation measures are outlined for surface waters and wetlands, groundwater and stormwater, and the watershed as a whole.

Surface Water and Wetlands

Surface water resources potentially impacted by proposed development at the Project Site have been avoided and minimized to the maximum extent practicable. Aquatic resources on the Project Site were identified, evaluated, and considered throughout the design process. The first consideration was to determine if wetland and stream impacts could be avoided entirely. The second consideration was to minimize potential impacts in terms of both quantity and quality to the maximum extent possible. The third consideration was to describe a mitigation strategy that would compensate for all unavoidable impacts.

Design iterations reduced potential wetland impacts from approximately 69 acres to 9.54 acres. In addition to reducing total acreage of impacts, wetland location and quality were taken into consideration. The wetlands potentially impacted are low-to-

medium quality wetlands, many of which are isolated and therefore likely not currently regulated. Approximately 112 acres of wetlands, including all high-quality wetlands identified on the Project Site, will be protected as a result of the Project. Wetlands potentially impacted by the Preferred Alternative total 9.54 acres, and are listed by wetland identification number along with their community type, total size, potential impact acres, preliminary jurisdiction, and condition rating (Table 6-2). With the exception of potential temporary impacts to adjacent areas due to development of a recreation trail, no wetlands or adjacent areas likely to be regulated by NYSDEC under Article 24 of the Freshwater Wetland Act will be impacted.

TABLE 6-2
Wetlands Impacted By the Preferred Alternative

Wetland/ Parcel Number	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Condition	Wetlands Impacted (acres)
Wetland 2 Parcel 1 & 2	PFO Floodplain Forest and PFO Hardwood Swamp	18.47	USACE/ NYSDEC	High/Low	1.18 (Low quality edge section)
Wetland 3 Parcel 1	PSS	0.07	NON	Low	0.07
Wetland 4 Parcel 1	PEM/PSS,	0.45	NON	Low/ Medium	0.45
Wetland 10 Parcel 3	PEM Shallow Emergent Marsh	1.28	NON	Medium	1.28
Wetland 11 Parcel 2	PEM- Reed Canary Marsh	0.11	NON	Low	0.11
Wetland 12 Parcel 3	PSS Shrub Swamp	0.08	NON*	Low	0.08
Wetland 13 Parcel 3	PSS Shrub Swamp	0.38	NON*	Low	0.38
Wetland 14 Parcel 3	PSS Shrub Swamp	0.06	NON	Low	0.06
Wetland 15 Parcel 3	PEM Shallow Emergent Marsh	0.25	NON*	Medium	0.25
Wetland 16 Parcel 3	PEM Shallow Emergent Marsh	0.05	NON*	Low	0.05
Wetland 17 Parcel 8	PSS Shrub Swamp	0.02	NON	Low	0.02
Wetland 18 Parcel 8	PSS Shrub Swamp	0.15	NON	Low	0.15
Wetland 19 Parcel 8	PSS Shrub Swamp	0.34	NON	Low	0.34
Wetland 26 Parcel 9	PEM/PSS	1.37	USACE	Low	1.37

Wetland/ Parcel Number	Community Type(s) and Comments	Wetland Size (acres)	Preliminary Jurisdiction	Condition	Wetlands Impacted (acres)
Wetland 27 Parcel 9	PFO Hardwood Swamp	3.75	NON*	Medium	3.75

***Pending assessment of tile drainage**

A minimum buffer of 100 feet, greater in parts, has been established on either side of Whitney Creek to avoid impacts and allow for stream buffer enhancement opportunities. The second drainage corridor to the north of Whitney Creek, also referred to as Unnamed Stream #2, has also been preserved along with a conservation buffer. The proposed development will require that the third drainage way (Unnamed Stream #1) be re-routed into the second corridor (Unnamed Stream #2) to accommodate flow and to provide hydrology to enhance and restore wetlands and streams in the protected corridor (Figure 6-7). Additional data will be collected and hydrologic modeling will be conducted prior to implementation of the proposed re-route to ensure protection and maintenance of the existing aquatic resources. Further details describing the re-route of this drainage way are provided in the *Stormwater Management Preliminary Report* (Appendix E).

A total of 24,304.89 linear feet of stream, ditches, and drainage ways will be preserved and enhanced as a result of the Project. Approximately 9,595 linear feet of ditches and drainage ways will be impacted as a result of development at the Project Site (Table 6-3).

TABLE 6-3
Drainage Ways Impacted By the Preferred Alternative

Approximate Reach Beginning (NAD83)		Approximate Reach End (NAD83)		Approx. Linear Feet	Direction of Flow	Rosgen Classifi-cation	Drainage Way Impacts (LF)
Latitude	Longitude	Latitude	Longitude				
43.08921	78.41258	43.09655	78.42628	5490.4421	NW	E6/C6	1,950.0000
43.08914	78.41717	43.08925	78.4228	1602.6806	W	E6	1,602.6806
43.08869	78.40982	43.08802	78.40383	1722.1426	W	E6	1,722.1426
43.08682	78.39913	43.088	78.40365	1423.4795	NW	G6	1,423.4795
43.08313	78.39167	43.08555	78.39744	2035.5375	NW	E6	600.0000
43.08523	78.4038	43.08423	78.40123	791.8156	SW	G6	791.8156
43.08866	78.40997	43.08919	78.41258	844.4982	NW	G6	844.4982
43.08552	78.39766	43.08679	78.39912	659.8702	NW	G6	659.8702
						Total Impacted	**9,594.4867**

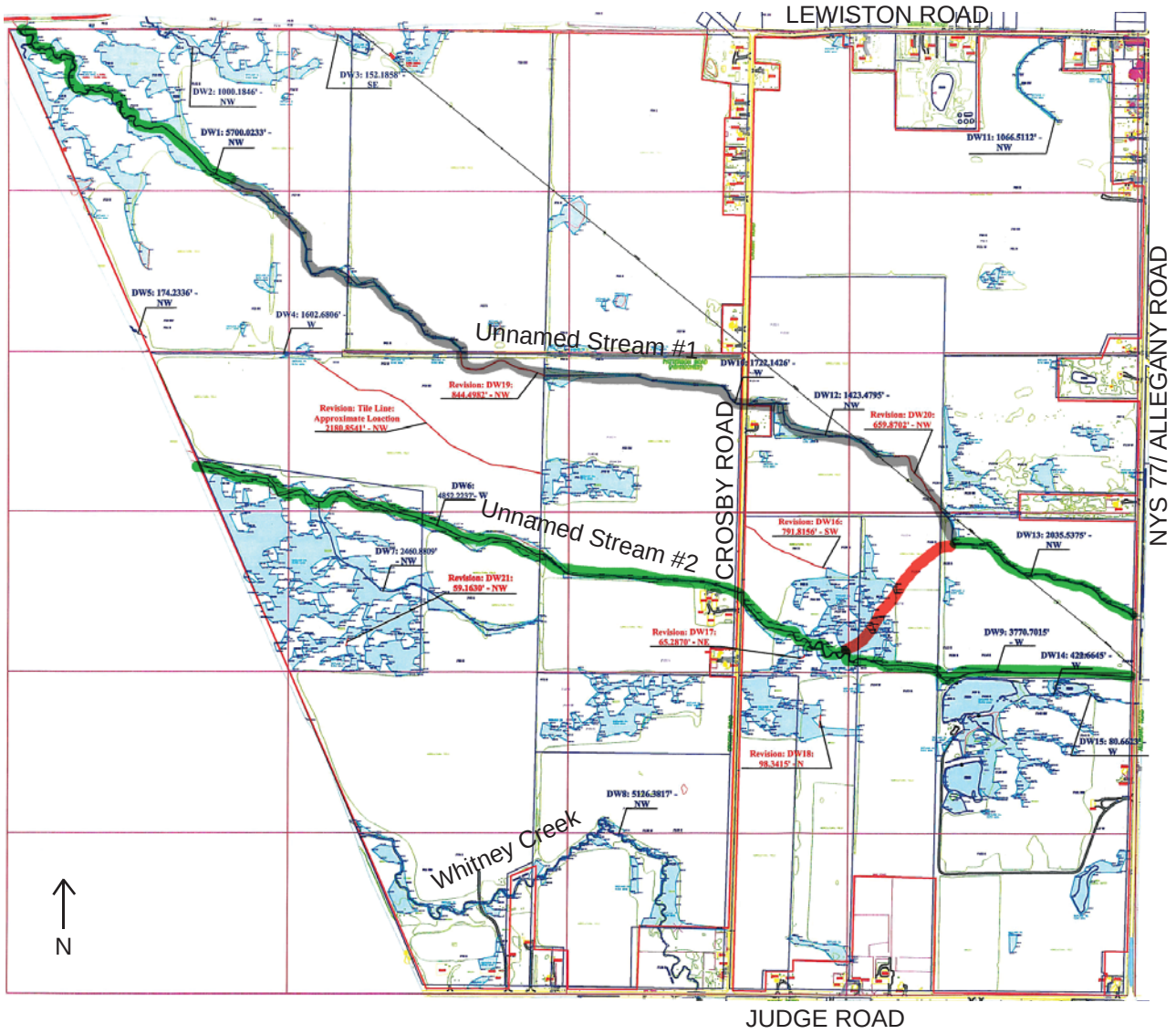
Best Management Practices (BMPs) will also be employed that minimize impacts to streams and other waters within the Project Site during proposed construction, utility installation, and transportation improvement activities. The following BMPs will be implemented:

- Work within streams and other waters of the U.S. will be scheduled during periods of low flow conditions. No work will be conducted during or immediately after storm events.
- Work within streams will be conducted in one continuous operation. Stream bed and banks will be stabilized immediately following construction activities using rip-rap or mulching and revegetation techniques.
- Silt fence and/or straw bales will be installed along the edges of the stream to prevent the flow of sediment into the stream and to minimize erosion of stream banks.
- Flume pipes or the dame and pump method will be used, as necessary, to divert water flow during construction activities.
- Spoil piles and construction debris will be temporarily stored outside of the stream corridor.
- Equipment will cross streams using temporary bridges. No streams will be forded by construction equipment.
- When possible (and as applicable), within designated trout streams, work will be scheduled outside of known fish spawning periods.
- Construction staging areas will be located at least 50 feet away from all streams, and storage of chemicals, washing or re-fueling equipment, and mixing of concrete will be conducted more than 100 feet away from streams.

In addition to the implementation of the above-mentioned BMPs, all stream disturbance activities shall be completed in accordance with the applicable NYSDEC requirements.

To compensate for the potential impacts to wetlands, ditches, and drainage ways described above, more than 112 acres of wetlands, 24,304 linear feet of stream and upland buffer surrounding wetlands and streams will be enhanced, restored, and protected in perpetuity on the Project Site. An additional appropriate amount of wetland, stream, and buffer habitat will be mitigated off-site in the southeastern portion of the Whitney Creek watershed. Mitigation actions will include restoration of wetlands that have been drained; enhancement of existing wetlands through invasive species eradication and control, including planting of native vegetation; establishment of forested stream buffers; and a legal mechanism for permanent protection of all mitigation areas.

All potential impacts to wetlands described above are contingent upon completion of a separate Joint Permit Application (JPA) process involving USACE, NYSDEC, and other applicable regulatory agencies. This permit process will include the



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Figure 6-7
Drainage Way Rerouting

development of a final mitigation strategy to protect, restore, and enhance aquatic resource functions and services of equal or greater value than those impacted within the same watershed and based on the watershed priorities described above under Section 6.2.1 entitled “Existing Conditions”.

Groundwater and Stormwater

Implementation of the Project will not have a potential significant adverse environmental impact on groundwater. No groundwater will be withdrawn, excavations for buildings will not extend into the groundwater table, and no groundwater discharge is associated with the Project. In addition, stormwater management measures will be required to detain surface water flow and allow groundwater infiltration. Lastly, the storage of chemicals and petroleum will be done in strict accordance with applicable State and federal regulations to ensure the avoidance of potential releases to groundwater and/or surface waters.

The *Stormwater Management Preliminary Report* (Appendix E) evaluated the Project at full build-out and the impact that the development may have on the Project Site. At fullbuild-out, approximately 6,100,000 square feet of building development may be accommodated, and over 9,000 employees are projected to occupy the Project Site. This development translates to an increase in impervious area of approximately 490 acres as compared to existing conditions. Impervious surfaces will be generally introduced in the form of buildings, roads, and parking lots.

Similar to existing conditions, once developed, the Project Site will be divided into four distinct drainage catchment areas with associated design points (Figure 6-8). Under build-out conditions, the existing flow path of Unnamed Stream #1 will be disrupted due to the placement of the proposed buildings, parking lots, and associated roadways. As such, the stream will be re-routed to discharge into Unnamed Stream #2, traveling through proposed drainage catchment area #2. This arrangement will allow both streams to continue to contribute to the off-site wetlands northwest of the Project Site.

New development within the proposed drainage catchment areas will require new stormwater runoff mitigation, including best practices with regard to both stormwater quality and quantity. For this analysis, it is assumed that the primary stormwater mitigation measure will be pond-type facilities. The ponds will have a forebay and permanent pool to treat water quality and additional storage volume to treat water quantity.

By comparing peak flows generated from existing conditions and build-out conditions, required pond volumes can be calculated using the PondPack software. The flow calculation is based on an estimation of the amount of storage required to mitigate stormwater flows at build-out to existing flow rates or lower. For this analysis, the worst case scenario of the peak flow generated by the 100-year storm event is used for drainage catchment areas 1, 2, and 4. Due to the reduction of drainage area for catchment area 3 from existing to full build-out conditions, no pond storage estimates have been completed.

Table 6-4 and Table 6-5 summarize the existing and build-out flows by drainage area for 1, 10, and 100-year storm events.

TABLE 6-4
Stormwater Runoff – Existing Conditions

Watershed/Subarea	Drainage Area	1-Year Storm Event	10-Year Storm Event	100-Year Storm Event
DA-1	706 acres	233.05 cfs	653.33 cfs	1,024.76 cfs
DA-2	437 acres	104.40 cfs	318.25 cfs	512.57 cfs
DA-3	103 acres	30.06 cfs	103.11 cfs	172.09 cfs
DA-4	126 acres	40.96 cfs	141.85 cfs	236.25 cfs

TABLE 6-5
Stormwater Runoff – Build-Out Conditions

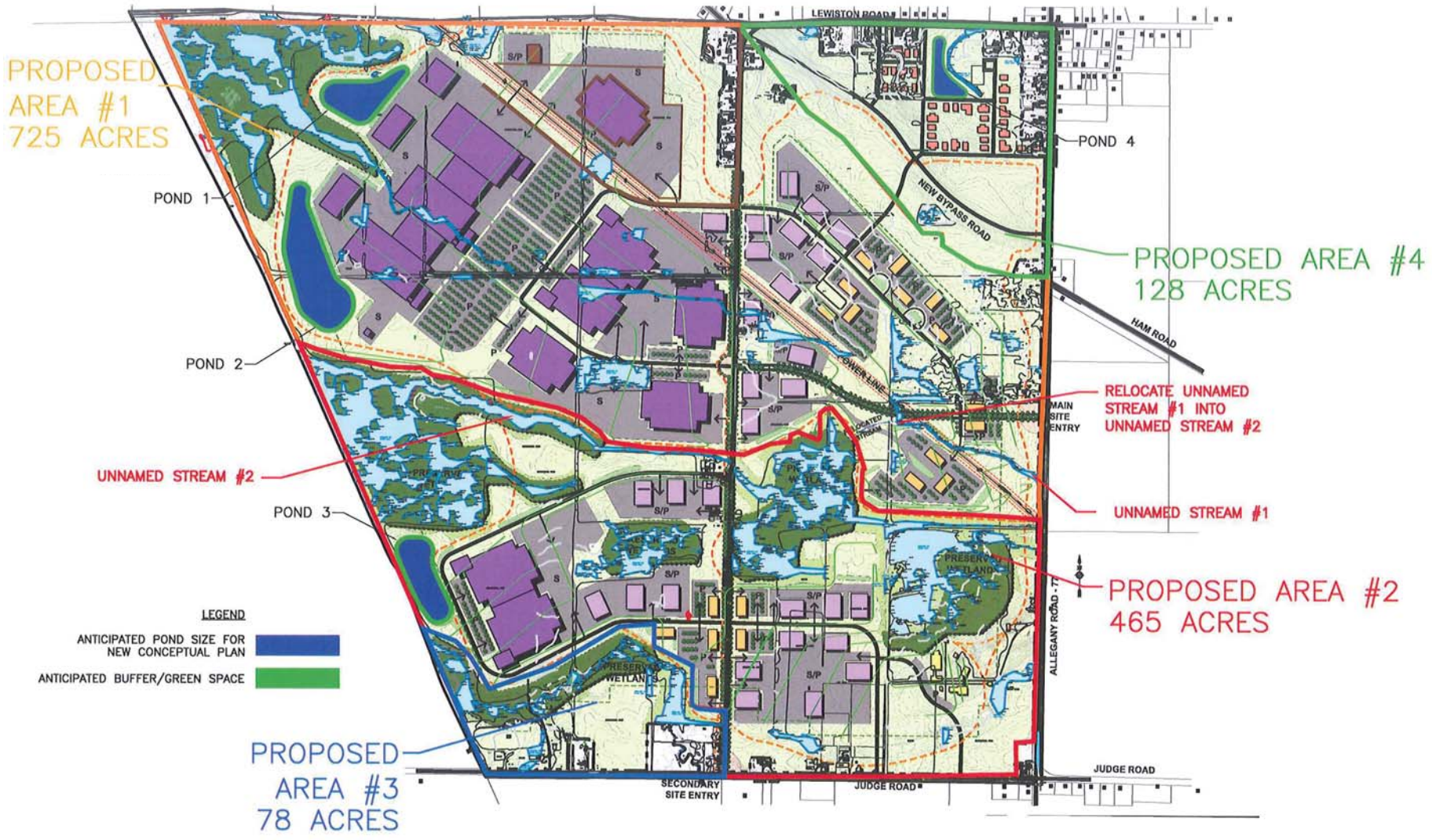
Watershed/Subarea	Drainage Area	1-Year Storm Event	10-Year Storm Event	100-Year Storm Event
DA-1	725 acres	809.38 cfs	1909.57 cfs	2826.11 cfs
DA-2	465 acres	421.37 cfs	1094.23 cfs	1672.73 cfs
DA-3	78 acres	17.90 cfs	65.85 cfs	111.59 cfs
DA-4	128 acres	45.20 cfs	188.05 cfs	328.18 cfs

In addition, Table 6-6 below summarizes the storage requirements for the stormwater management facilities serving Project build-out for drainage catchment areas 1, 2, and 4. The calculations used are based on flow rates for the 100-year storm event.

TABLE 6-6
Stormwater Management Facility Storage Requirements

Watershed/Subarea	Storage Requirement
DA-1	77.09 acre-feet
DA-2	47.58 acre-feet
DA-4	5.19 acre-feet

In addition to the main stormwater pond facilities in each catchment area, point source treatment practices will be implemented as required in the pending NYSDEC New York Stormwater Management Design Manual. The point source treatment practices include rain gardens for roof drainage, bioretention swales or infiltration trenches for parking areas, and a variety of other practices. Buffers for these treatment practices have been incorporated into the Preferred Alternative. As development occurs, additional stormwater studies and calculations will be required to determine compliance and adequate sizing of associated treatment methods.



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Figure 6-8
Proposed Drainage Map

For analysis of the Preferred Alternative, conservative, "worst case" pond sizes were calculated for build-out conditions. The point source treatment requirements improve infiltration and decrease runoff generated from development. Therefore, the size of the ponds will generally decrease as more of these practices are implemented as the Project develops.

The final design and layout of the stormwater treatment practices will also assist in supplying water to the existing wetlands and streams on the Project Site. By discharging treated stormwater from these practices into the streams and wetland systems, the integrity of the systems will be maintained and even enhanced.

Watershed Assessment

In addition to the evaluation of Project-specific impacts and mitigation measures, it is important to consider natural resource impacts and conservation from the landscape-level perspective. Impacts to natural resources as a result of the Project occur in a sub-watershed that is relatively intact with less than 4% development and over 95% in natural land cover or agriculture. In addition to the specific mitigation plans that will be developed and implemented, land use changes in such watersheds are also buffered by the ecological functions and services being provided by an abundance of existing high quality natural resources.

From a watershed perspective, preservation of existing, high quality resources that secure connectivity between existing habitat and preservation areas is most important on the Project Site. Restoration of wetlands and stream buffers is a priority in the upper reaches of the watershed southeast of the Project Site where greater impacts have occurred. The mitigation strategy outlined here will yield the greatest benefit to the function of the watershed as a whole through protection and enhancement of headwater streams, wetlands, and stream buffers on-site and in the lower reaches, as well as restoration of wetlands and stream buffers in the highly fragmented upper reaches of the Whitney Creek Watershed.

6.3 Air Resources

This section describes the existing air quality conditions at both the Project Site and areas in the vicinity of the Project Site, and examines the potential significant adverse impacts the Project may have on air resources, as well as the potential mitigation measures necessary to minimize and/or avoid such impacts, if necessary.

6.3.1 Existing Conditions

The Project is located in Genesee County which is classified as attainment for carbon monoxide and ozone. New York State collects air quality data for numerous pollutants at monitoring stations in each County through a program operated by the Bureau of Air Quality Surveillance. USEPA prescribes what pollutants are required to be monitored at different locations based on the characteristics of each region. Therefore, monitoring stations are disbursed throughout New York State, with each station monitoring certain pollutants. In addition to the continuous and manual monitors in each County, ambient air quality data from private networks (utilities) is also an integral part of the State database for pollutants. The data from each

monitoring station is recorded and summarized in the New York State Air Quality Report, Air Monitoring System. The latest data tables available are for the year 2009.

Currently, there are no monitoring stations located in Genesee County. The closest monitoring station to the Project Site is located in Rochester in Monroe County, New York, which monitors sulfur dioxide, inhalable particulates, carbon monoxide, and ozone. This station was in compliance with the New York State and National Ambient Air Quality Standards (NAAQS) for the 3-hour and 24-hour averages for sulfur dioxide, 24-hour average for inhalable particulates <10 microns, 98th percentile average and annual mean for inhalable particulates <2.5 microns, 1-hour and 8-hour averages for carbon monoxide, and one hour and 4th highest daily maximum 8-hour averages for ozone.

In general, existing emissions in the Project area are primarily attributed to vehicular travel and farm operations. Vehicles traveling area roads produce exhaust emissions, as well as generate dust from unpaved road surfaces. Farming operations also produce odors, emissions, and fugitive dusts. No local air monitoring data is available to further characterize air quality in the vicinity of the Project Site.

6.3.2 Potential Impacts and Mitigation Measures

Mobile Source Air Impacts

An air quality assessment for mobile sources was conducted for the Project pursuant to the procedures followed by NYSDEC. NYSDEC currently conforms to the procedures of the New York State Department of Transportation (NYSDOT), as outlined in Chapter 1.1 of the *Environmental Procedures Manual* (EPM), last updated January 2001. These procedures address the Clean Air Act Amendments of 1990 and guidance from USEPA and NYSDEC including 40 C.F.R. Part 93 and NYSDEC 6 N.Y.C.R.R. Part 240. Consistent with these procedures, the following air quality assessments for mobile sources was conducted:

Microscale Air Quality

A microscale air quality analysis is performed to determine carbon monoxide concentrations at various worst case receptors adjacent to the roadways in a project area. Based on the procedures outlined in the EPM, worst case receptors are typically chosen at signalized intersections where a level of service (LOS) D, E, or F exists for the built conditions. Unsignalized intersections do not typically warrant a detailed air quality analysis since the major-street high volume approaches at these intersections operate as free flow conditions. Any intersection requiring a detailed air quality analysis based on the LOS criteria undergoes additional screenings based on an analysis of the site conditions with respect to the reduction in source-receptor distances, traffic volume increases, vehicle emission increases, and speed reduction. The screening process is used to pinpoint locations where vehicle emissions will be the highest and will contribute to the background air quality. Any detailed air quality analysis is conducted using CAL3QHC, Version 2.0, which is a computer based air quality dispersion model. This model is based on traffic

parameters from the *Highway Capacity Manual* (HCM) and is capable of analyzing intersection and free flow receptors.

Intersection Screening Analysis

A total of thirteen (13) off-site intersections were analyzed as part of the detailed traffic impact analysis completed for the Project. Of the thirteen (13) intersections, six (6) are signalized or could be signalized in build-out conditions. In addition, one (1) site driveway intersection (Route 77/63/Site Driveway #4) could be signalized. Optional mitigation at the study area intersections includes the construction of roundabouts. Roundabouts are unsignalized intersections and would not require further screening.

The *Traffic Impact Study* (Appendix I) mitigates traffic impacts for development of 70% of the Project. Beyond, the 70% threshold, it is recognized that traffic mitigation needs to be confirmed by further study. Therefore, the intersection screening analysis focuses on the 70% threshold level and the following study area intersections:

- Route 63/Route 31/Route 31A
- Route 77/Route 63/Judge Road
- Route 77/Bloomingdale Road
- Route 77/Ledge Road
- Route 77/I-90 Exit 48A
- Route 77/Route 5
- Route 77/Route 63/Site Driveway #4

Appendix I should be referenced for additional details on the study area intersections and traffic analysis. Based on procedures outlined in the EPM, any signalized intersection operating with an overall LOS C or better for the Build with Improvements conditions of the design year does not require a detailed air quality analysis. A review of the LOS analysis indicates that at the 70% threshold level, all of the signalized intersections will meet the LOS A, B, or C criteria at build-out.

Based on the site screening analysis, an air quality analysis is not necessary since the Project will not increase traffic volumes, reduce source-receptor distances, or change other existing conditions to such a degree as to jeopardize attainment of the National and New York State Ambient Air Quality Standards.

Mesoscale Analysis

A mesoscale air quality analysis is conceptually similar to a microscale air quality analysis, however, it covers a larger geographic area, typically larger than the immediate project area. In addition to carbon monoxide (CO), a mesoscale air quality analysis monitors for volatile organic compounds (VOC) and nitrogen oxides (NO_x). In general, a mesoscale air quality analysis is required for projects involving the following:

- High occupancy vehicle (HOV) lanes versus general use lanes.
- New or significant modification to interchanges on access-controlled facilities.
- Large-scale signal coordination projects.
- In attainment areas, projects having alternatives (including the no-build) with significantly different (10%) vehicle miles traveled (VMT).
- Widening to provide additional travel lanes more than a mile in length.

It is noted that the bypass connector road proposed through the northeast portion of the Project Site as part of the Project is less than one mile in length. It is further noted that the connector road is expected to create a local diversion and not a regional diversion of traffic. The localized traffic diversion is accounted for in the microscale assessment outlined previously. The criteria for a mesoscale air analysis are not met for the Project; therefore, a mesoscale analysis is not required.

Particulate Matter Analysis

Particulate Matter (PM) is a mixture of substances that include elements such as carbon and metals; compounds such as nitrates, organic and ammonium compounds, and sulfates; and complex mixtures such as diesel exhaust and soil. Some of these particles are emitted directly into the atmosphere. Others, referred to as secondary particles, result from gases that are transformed into particles through physical and chemical processes in the atmosphere. There are two types of inhalable particulates: those with aerodynamic diameters of 10 microns or less (PM_{10}) and those with aerodynamic diameters of 2.5 microns or less ($PM_{2.5}$). Many scientific studies have linked breathing PM to a series of significant health problems including aggravated asthma, increase in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and premature death. As a result, criterion for assessing PM impacts have been developed by NYSDEC and NYSDOT. One of the key factors influencing the emission of particulates is the presence or use of diesel vehicles.

The development of the Project will result in some increases in heavy vehicle traffic; however, the majority of the Project Site-generated traffic will be from employees, who for the most part, will travel to and from the Project Site using non-diesel vehicles. Therefore, based on the expected vehicle mix and the good LOS experienced in the study area during the build conditions, it is not expected that particulate matter violations will occur.

Potential Manufacturing Air Related Impacts

Air emissions and abatement systems associated with the operations of the kind of advanced technology manufacturing facilities to be located at the Project Site are set forth in the *Industry Requirements and Environmental, Health and Safety Impacts Report* (Appendix H).

In general, the sources and types of regulated air emissions across the proposed technology manufacturing facilities considered are noted in Table 6-7 below.

TABLE 6-7
Regulated Air Emissions for Technology Manufacturing Facilities

Industry	Air Emission Source	Types of Regulated Air Pollutants	Typical Control Strategies
All	Combustion sources including: • Boilers (natural gas with potential fuel oil back-up) • Emergency Stand-by Generators (diesel fueled) • Thermal Oxidizer VOC Abatement (Natural gas) • Point-Of-Use (POU) toxic gas abatement (Natural gas)	Criteria Pollutants including: • Particulate Matter • Sulfur Dioxide • Nitrogen Oxides • VOCs • Carbon Monoxide Minor source of Hazardous Air Pollutants (HAPs)	Multiple Strategies including: • Use of natural gas as a clean fuel • Low NO_x burners and/or flue gas recirculation for boilers • Optimized combustion mechanics for emergency generators to comply with USEPA New Source Performance Standards
PV – Crystalline Silicon	• Volatilization of solvent from screen printing operations	• Volatile Organic Compounds (VOCs) • HAPs (typically glycol ethers)	• Thermal oxidation can typically achieve an overall VOC destruction/removal efficiency of 90%.
	• Cell Texturization and cleaning steps using acidic and alkaline wet chemicals including for example nitric acid, hydrofluoric acid, hydrochloric acid	• HAPS (HF & HCl) • Nitrogen Oxides	• Wet scrubbing using chemical adsorption can remove at least 90% of these emissions
PV – Amorphous Silicon	• Silicon deposition processes using silane. Non-deposited silane can form silica, a fine particulate	• $PM_{2.5}$	• Point-of-use (POU) abatement providing oxidation with scrubbing / cooling section followed by central house wet scrubbing can remove at least 90% of these pollutants.
	• Chamber cleaning using Nitrogen Trifluoride	• Hydrofluoric Acid	• Point-of-use (POU) abatement providing oxidation with scrubbing/cooling section followed by central house wet scrubbing can remove at least 90% of these pollutants.

Industry	Air Emission Source	Types of Regulated Air Pollutants	Typical Control Strategies
PV – CdTe	• Metal deposition processes including Cadmium deposition	• PM • HAPs (cadmium)	• High Efficiency Particulate Absorbing (HEPA) filters can remove at least 99% of these contaminants.
	• Photoresist operations or spray on metal deposition operations	• VOCs • Methanol	• Thermal oxidation can typically achieve an overall VOC destruction/removal efficiency of 90
PV – CIGS	• Metals deposition processes, e.g., sputtering	• PM	• High Efficiency Particulate Absorbing (HEPA) filters can remove at least 99% of these contaminants.
	Cadmium Sulfide Chemical Bath Deposition & associated cleaning steps.	• Acid gases including HCl • Ammonia • Hydrogen Sulfide	• Wet scrubbing using chemical adsorption can remove at least 90% of these emissions
FPD & Nano	Photoresist operations and cleaning with organic solvents	• VOCs	• Thermal oxidation is capable of destroying at least 90% of these pollutants.
	Cleaning & etching steps using acidic and alkaline wet chemicals including for example nitric acid, hydrofluoric acid, hydrochloric acid		• Wet scrubbing using chemical adsorption can remove at least 90% of these emissions
	Material handling operations	• $PM_{2.5}$	• High Efficiency Particulate Absorbing (HEPA) filters can remove at least 99% of these contaminants

Potential Permitting Requirements

Air emissions from advanced technology manufacturing industries are potentially regulated by NYSDEC and, at the federal level, by the USEPA. NYSDEC requires that entities operating within the State of New York obtain air permits prior to constructing or operating a source of air emissions, unless the activity or air source has been specifically exempted. All sources of air emissions are either exempt or regulated under one of three of the following permit systems:

- Title V Facility Permit

- State Facility Permit
- Air Facility Registration

A Title V Facility Permit is required for all Major Sources of air contaminants, while facilities with actual emissions of less than 50% of the Major Source thresholds are typically eligible for an Air Facility Registration. Those facilities which have actual emissions between 50% and 100% of the Major Source Thresholds, or which require federally enforceable permit conditions in order to avoid being a Major Source, are generally required to obtain a State Facility Permit from NYSDEC.

For purposes of this DGEIS review, it should be noted that the actual permitting requirements are complex, and there are many nuances which may require a facility to obtain a different classification of permit than is generally described.

The Major Source thresholds in New York are as follows:

- Volatile Organic Compunds (VOC) 50 tpy
- Oxides of Nitrogen (NO_x) 100 tpy
- Sulfur Dioxide (SO_2) 100 tpy
- Carbon Monoxide (CO) 100 tpy
- Particulate Matter, 10 microns or less (PM_{10}) 100 tpy
- Total Hazardous Air Pollutants (HAP) 25 tpy
- Each Individual HAP 10 tpy
- Any Other Pollutant 100 tpy

USEPA and NYSDEC have also developed emission and control standards for various air emissions sources. Select types of new sources are regulated by USEPA pursuant to the New Source Performance Standards (NSPS), which are codified within 40 C.F.R. Part 60. Small boilers (between 10 and 100 MMBTU/hour) are an example of a site activity expected to be regulated by the NSPS. Major sources of hazardous air pollutants in the semiconductor industry are regulated by USEPA under the Maximum Achievable Control Technology (MACT) standards which are codified within 40 C.F.R Part 63. Lastly, NYSDEC regulates sources of air emissions pursuant to 6 N.Y.C.R.R. Part 212, which dictates the level of control technology required based upon the pollutant emission rate and the hazard classification of the pollutant.

Facilities seeking air permits must further satisfy the requirements set forth in NYSDEC's Guidelines for the Control of Toxic Ambient Air Contaminants (a/k/a, Air Guide-1). Air Guide-1 was developed in order to evaluate the short-term and annual impacts from sources of air emissions in the State of New York. NYSDEC has established short-term and annual air concentration guidelines for a wide range of chemicals. The allowable short-term guideline concentrations (SGC) are hourly average concentrations that may be associated with acute exposures affecting either

human health or the environment. The allowable annual guideline concentrations (AGCs) are designed to be protective of the environment and public health from effects which may be associated with long-term exposure to an air contaminant.

In order to conduct Air Guide-1 analysis, the concentration of air contaminants at various receptor locations from all facility sources are approximated using air dispersion modeling. These contaminant concentrations are then compared to the SGC and AGC for the purpose of demonstrating compliance with Air Guide-1. The applicable short-term and annual guidance concentrations must be achieved at the property line for the Project. Unmitigated concentrations in excess of the guidance concentrations at off-site locations are not acceptable under Air Guide-1, and the proposed facility will be not granted a NYSDEC permit if these guidance concentrations are exceeded.

Facilities seeking to locate at the Project Site will need to satisfy the requirements of Air Guide-1, as applicable, in addition to all other air permitting requirements. The SGC and AGC levels were selected by NYSDOH and NYSDEC to be protective of human health and the environment, and by meeting these thresholds, facilities locating within the Project Site will not have an adverse impact on air quality, human health, or the environment.

Based upon the emissions data presented within the *Industry Requirements and Environmental, Health and Safety Impacts Report* (Appendix H), the estimated annual emissions (potential to emit) of regulated air pollutants from any single stationary source to be constructed within the Project Site is anticipated to be below major source threshold, i.e., less than 100 tons per year (tpy) of any single criteria pollutant, less than 10 tpy of a hazardous air pollutant, and/or less than 25 tpy of combined hazardous air pollutants.

Table 6-8 provides the estimated annual criteria pollutant emissions from fuel combustion sources for a single representative factory and the combined facilities. Table 6-9 provides the estimated post abatement criteria pollutant and HAP emissions from manufacturing process operations for a single representative factory and the combined facilities. A single representative factory is considered to be a 200 megawatt (MW) solar photovoltaic (PV) plant (considering the air emission characteristics of all PV technologies in a single plant) and the combined facilities represent full build-out of all Project Site manufacturing operations.

TABLE 6-8
Criteria Pollutant Emissions from Fuel Combustion Sources

Pollutant	Single	All Facilities
NO_x	22.4	164.1
CO	16.8	123.4
SO_2	6.2	45.8
PM_{10}	1.7	12.8
$PM_{2.5}$	1.7	12.8

Pollutant	Single	All Facilities
VOC	1.2	8.5

TABLE 6-9
Criteria Pollutant & HAP Emissions from Manufacturing Process Operations

Hazardous Air	Single	All
Hydrofluoric Acid	5.8	10.6
Hydrochloric Acid	5.3	11.8
Glycol Ethers	4.0	4.0
Methanol	5.6	9.0
Cadmium	0.00061	0.00061
Phosphine	0.100	0.014
Chlorine	nil	1.1
HAP Total	**20.7**	**36.5**
Criteria Pollutant		
VOC	47.6	102.3
NO_x	20.0	20.0
$PM_{2.5}$	14.4	14.6
Hydrogen Sulfide	0.1	0.4
Criteria Total	**82.1**	**137.3**
Other		1.2
Ammonia	6.8	24.9

As a result of the emissions analysis set forth above, each potential manufacturing facility is anticipated to have actual emissions less than Major Source thresholds, and would be regulated under a State Facility Permit. Moreover, the construction of up to three contiguous manufacturing facilities under common ownership is expected to be covered under a State Facility Permit. Taking into consideration the data provided within the *Industry Requirements and Environmental, Health and Safety Impacts Report* (Appendix H), construction of four or more contiguous facilities under common ownership may result a Major Source classification for certain air emissions subject to a Title V Facility Permit.

The manufacturing operations to be located within the Project Site will not result in a potential significant adverse impact to air quality. In conjunction with the strict air permitting requirements future users will be required to adhere to, facilities locating within the Project Site will be constructed with state-of-the-art emission control equipment as a necessary function of the advanced manufacturing industry. The

controls utilized by modern technology manufacturing facilities go well beyond the regulatory requirements in order to minimize manufacturing defects and to create a working environment which is safe for employees and the surrounding community. Air emissions will be controlled by a combination of abatement systems designed depending on the type of chemicals and gases to be controlled. Such systems include wet scrubbers, thermal oxidation, and carbon absorption systems. The abatement systems may be either centrally located or POU systems, depending upon the source to be controlled.

Backup control systems are activated in the event that a primary system fails or is taken off-line for maintenance. In addition, safety interlocks ensure that the manufacturing systems do not operate unless the associated control systems are operating.

Potential Climate Impacts

Development of the Project is not expected to produce any measurable changes in local or regional climate. Climate is defined as the average course or condition of the weather at a place over a period of years as exhibited by temperature, wind velocity, and precipitation. There is no evidence that the build-out of the Preferred Alternative will have a potential significant impact to climactic conditions.

Potential Construction Related Air Impacts

Temporary air quality impacts are likely to occur during the construction phases of the Project. These impacts will consist mainly of dust being generated, and would occur as existing vegetation is removed and soils are moved around for grading and construction purposes. These impacts will be temporary and minor since most of the dust generated will settle out within a short distance of the construction activities. Dust generation will also be consistent with the existing conditions associated with nearby agricultural uses. Preserved open spaces surrounding development areas will help contain any dusts generated during construction activities and will serve to mitigate the potential for impacts to occur off-site.

6.4 Terrestrial and Aquatic Ecology

This section addresses the existing conditions, potential impacts, and proposed mitigation measures associated with terrestrial and aquatic ecology, including an overview of a Long-Term Land Management Plan for the Project Site. This section was prepared using file research data from NYSDEC and the U.S. Fish and Wildlife Service (“USFWS”), and field reconnaissance information for the Project Site including threatened and endangered species surveys.

6.4.1 Existing Conditions

Vegetation Communities

The Project Site is primarily agricultural lands with the majority of the remaining area undeveloped uplands and wetlands. A small percentage of the Project Site is developed with existing utility line rights-of-way (ROW), roads, and small residences

and buildings. Twelve (12) ecological communities were identified at the Project Site, and are described according to the Ecological Communities of New York State (Edinger et al. 2002). The undeveloped uplands within the Project Site are comprised of successional shrubland, successional northern hardwood, cropland/field crop, cropland/row crop, successional old field, rich mesic forest, and successional southern hardwood communities. The wetland areas are comprised of floodplain forest, reed canary/Phragmites marsh, shallow emergent marsh, shrub swamp, hardwood swamp, and deep emergent marsh communities. Additional detail regarding these ecological communities can be found in the following Appendices: *Wetland Delineation Report* (Appendix C), *Functions & Values Assessment* (Appendix D), and the *Threatened & Endangered Species Investigation* (Appendix G).

Fish and Wildlife

As described above, the majority of the Project Site is agricultural lands or undeveloped old field, shrub, forest, and/or wetland habitat. The ecological communities identified at the Project Site are not considered rare habitats, and are common throughout New York State and within the surrounding watersheds. These communities, including the agricultural lands, support various avian and terrestrial wildlife species common to the area including passerine birds, raptors, woodpeckers, and game birds such as Canada geese (*Branta canadensis*) and wild turkeys (*Meleagris gallopavo*). Common mammal species using the Project Site include white-tailed deer (*Odocoileus virginianus*), raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), and various small mammals. Both uplands and wetlands support common amphibian and reptile species such as northern leopard frogs (*Rana pipiens*), American toads (*Bufo a. americanus*), painted turtles (*Chrysemys picta marginata*), and garter snakes (*Thamnophis s. sirtalis*).

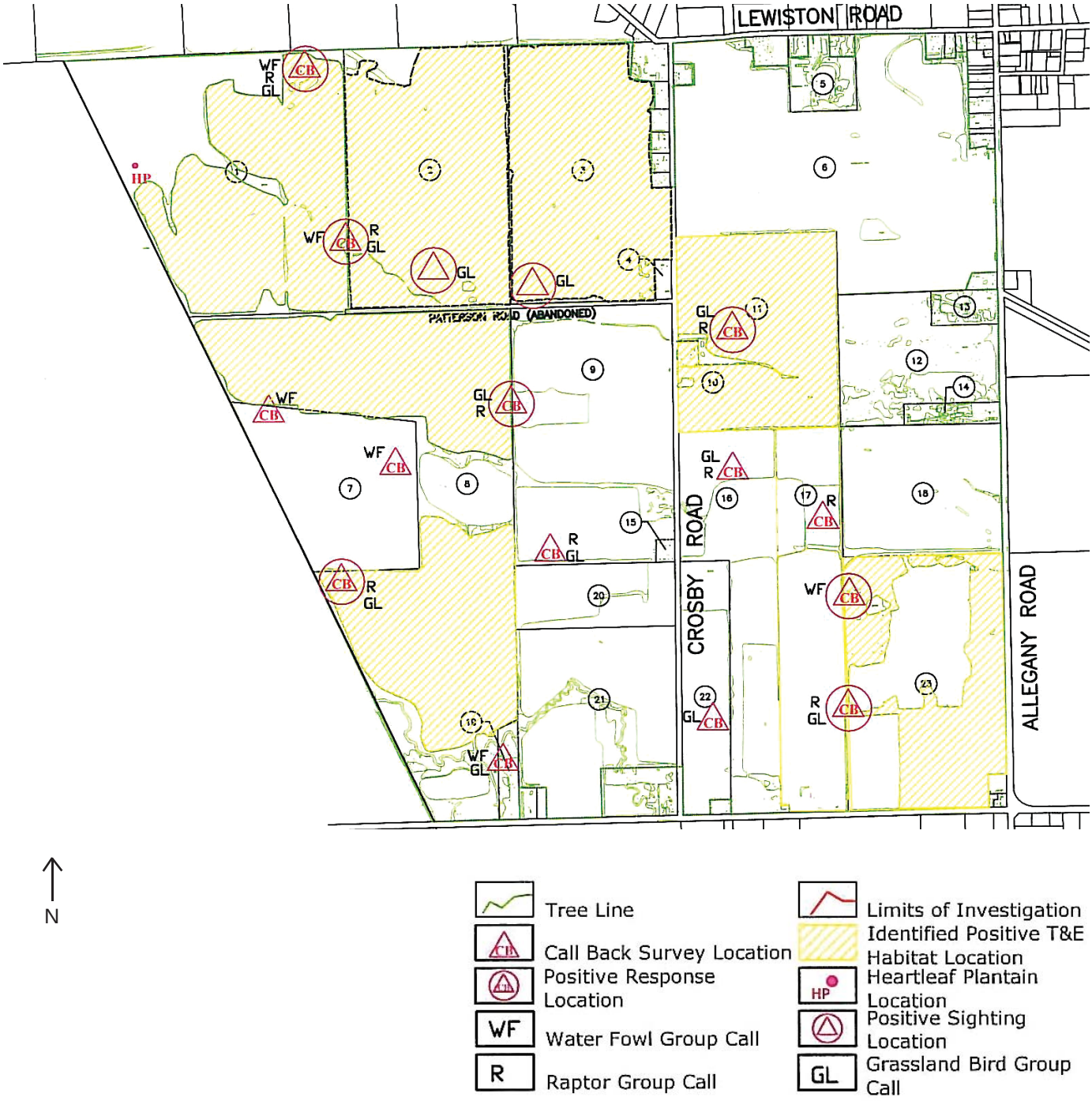
Threatened and Endangered Species

State and federal listings of threatened and endangered species, including species of special concern, were reviewed, and regulatory agencies were contacted to identify species that may be mapped within the Project Site and the surrounding area (Appendix G). In a letter dated November 3, 2009, the NYSDEC New York Natural Heritage Program identified the pied-billed grebe (*Podilymbus podiceps*), heartleaf plantain (*Plantago cordata*), nodding pogonia (*Triphora trianthophora*), persius duskywing (*Etynnis persius persius*), and karner blue (*Plebejus melissa sanntelis*) as potentially occurring on-site. In a letter dated March 5, 2010, NYSDEC Division of Environmental Permits identified the grasshopper sparrow (*Ammodramus savannarum*), Henslow's sparrow (*Ammodramus henslowii*), horned lark (*Eremophila alpestris*), least bittern (*Ixoblychtts exilis*), king rail (*Rallus elegans*), black tern (*Chlidonias niger*), short-eared owl (*Asio Ilammetts*), bald eagle (*Haliaeetus leucocephalus*), northern harrier (*Circus cyaneus*), Houghton's goldenrod (*Oligoneuron houghtonii*), eastern prairie fringed orchid (*Platanthera leucophaea*), pied billed grebe (*Platanthera leucophaea*), bog turtle (*Glyptemys nuthlenbergii*), and the eastern massasauga (*Sistrurus catenatus catenatus*) as potentially occurring on-site. Table 6-10 provides the name and listing status for each of the species mentioned above.

TABLE 6-10
Species – State and Federal

Species Potentially Occurring On-site	**Listing Status**
Pied-billed Grebe (*Podilymbus podiceps)*	Threatened in NYS, Not Listed Federally
Heartleaf Plantain (*Plantago cordata)*	Threatened in NYS, Not Listed Federally
Nodding Pogonia (*Triphora trianthophora)*	Endangered in NYS, Not Listed Federally
Persius Duskywing (*Etynnis persius persius)*	Endangered in NYS, Not Listed Federally
Karner Blue (*Plebejus melissa sanntelis)*	Endangered in NYS, Endangered Federally
Grasshopper Sparrow (*Ammodramus savannarum)*	Special Concern in NYS, Not Listed Federally
Henslow's Sparrow (*Ammodramus henslowii)*	Threatened in NYS, Not Listed Federally
Horned Lark (*Eremophila alpestris)*	Special Concern in NYS, Not Listed Federally
Least Bittern (*Lxoblychtts exilis)*	Threatened in NYS, Not Listed Federally
King Rail (*Rallus elegans)*	Threatened in NYS, Not Listed Federally
Black Tern (*Chlidonias niger)*	Endangered in NYS, Not Listed Federally
Short-eared Owl (*Asio Ilammetts)*	Endangered in NYS, Not Listed Federally
Bald Eagle (*Haliaeetus leucocephalus)*	Threatened in NYS, Federally Protected
Northern Harrier (*Circus cyaneus)*	Threatened in NYS, Not Listed Federally
Houghton's Goldenrod (*Oligoneuron* houghtonii)	Threatened in NYS, Threatened Federally
Eastern Prairie Fringed Orchid (*Platanthera leucophaea)*	Federally Threatened
Bog Turtle *(Glyptemys nuthlenbergii)*	Endangered in NYS, Federally Threatened
Eastern Massasauga *(Sistrurus catenatus catenatus)*	Endangered in NYS, Not Listed Federally

The Project Site was thoroughly examined throughout the months of March, April, May, June, July, and August 2010 for suitable habitat and evidence of listed species using survey methodology specified by the New York Natural Heritage Program and NYSDEC (Figure 6-9) and described in Appendix G. Two additional winter raptor surveys were conducted at the Project Site in the months of January and February 2011 using the NYSDEC's Wintering Raptor Stationary Survey protocol. These surveys were conducted in addition to, and separately from, those described in Appendix G. Two observers were stationed at two locations along Crosby Road surveying a mix of harvested row crops, hay fields, fallow fields, and small woodlots a half (1/2) hour before sunset to a half (1/2) hour after sunset. These locations were chosen due to their relatively low traffic volume and open landscape, allowing observers to survey a large area of potential owl habitat on both sides of the road.



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Figure 6-9
Map of Species Survey Locations

Town of Alabama, New York

Other survey locations around the Project Site were avoided due to their high traffic volume, limited site distance, and/or lack of potential raptor habitat.

Potential habitat for all of the species listed in Table 6-10 above was identified on the Project Site. Heartleaf plantain, least bittern, horned lark, and northern harrier were observed at the Project Site. A bald eagle was observed flying over the Project Site. None of the other potentially-occurring species were observed at the Project Site during field investigations. Potential species that were not observed include: eastern prairie fringed orchid, nodding pogonia, Houghton's goldenrod, persius duskywing, Karner blue, eastern massasauga, bog turtle, short-eared owl, Henslow's sparrow, grasshopper sparrow, black tern, pied-billed grebe, king rail, and short-eared owl.

6.4.2 Potential Impacts and Mitigation

Based on the investigations conducted at the Project Site, it appears the Preferred Alternative, with implementation of a Long-Term Land Management Plan (as described below), does not pose a potential significant adverse impact to these ecologies. The twelve (12) ecological community types present at the Project Site are common and well-established throughout their range, as are the majority of plant and wildlife species identified at the Project Site. Two (2) species observed at the Project Site that are currently listed as threatened in New York State (heartleaf plantain and least bittern) are located in areas that will be protected from impacts associated with site development (Appendix G).

The northern harrier (listed as threatened in New York State) was documented at the Project Site on March 16, 2010. A pair of northern harrier were observed flying low over hedgerow and open field habitats, and then traveling west towards the Seneca Nation of Indians Reservation. No active nests were found at the Project Site. Northern harrier hunting habitat is determined by several factors including proximity to the nest site, prey abundance, and location. Female harriers tend to hunt adjacent to the nest site, while males extend their hunting ranges farther from the nest and may enter into different habitat types. Based on multiple negative reproduction call playback sessions, and the absence of the species throughout the remaining six (6) month investigation, it was determined that the Project Site is not used as a nesting location, and thus the Project would not have a significant impact on the species (Appendix G).

The horned lark is a species of special concern in New York State. No active nests were found during site surveys. Several sightings and positive results of call back surveys for the horned lark were documented throughout the agricultural fields of the Project Site on March 16, 2010, April 14, 2010, and June 25, 2010. It does appear that the agricultural fields are utilized by the horned lark. Agricultural fields are abundant in the vicinity of the Project Site providing abundant habitat for any species displaced as a result of conversion of land use at the Project Site. Farmland protection is proposed as a key component of this Project. No additional mitigation is suggested.

Eastern prairie fringed orchid, nodding pogonia, Houghton's goldenrod, persius duskywing, Karner blue, eastern massasauga, bog turtle, short-eared owl,

Henslow's sparrow, grasshopper sparrow, black tern, pied-billed grebe, king rail, and short-eared owl were not observed at the site. Weighing the commonality of these, as well as the fact that no evidence was found of their presence, it is unlikely they will be impacted by any proposed activity at the Project Site.

Long-Term Land Management Plan

This section provides an overview of a Long-Term Land Management Plan that will be implemented at the Project Site throughout construction and following Project Site development. In addition to the BMPs and on-site mitigation actions for stormwater and aquatic resources, this long-term management strategy will mitigate for lost wildlife habitat by maximizing ecological functions and services provided on-site, to the watershed, and to the surrounding landscape. The Long-Term Land Management Plan described below aims to protect, restore, enhance, and maintain wildlife habitat, headwater wetland, and stream habitat, and provides an aesthetically-pleasing environment including outdoor recreation opportunities.

Development Areas

Future development areas will generally be maintained in their current land use until development construction commences. Most of the approximate 618 acres of the Project Site falling into this category are currently being farmed and can continue to be farmed until these lands are developed. Local cooperative farmers will be used to farm these lands.

Open Space Areas

Approximately 451 acres of the Project Site will be maintained as open space/landscaped areas managed to provide green space and recreation areas within STAMP. These areas will generally be mowed on a regular basis, or, in the case of natural grasses, street trees, and visual barriers and berms, trimmed to facilitate maintenance, public safety, and an aesthetic environment. Some wildlife plantings may occur and could include such things as pollinator gardens, fruit producing shrubs, mast producing trees, and similar micro habitats. A trail network will be introduced and outdoor recreation facilities may be constructed and maintained in these areas as well.

Conservation Areas

A diverse array of habitat types will be preserved and restored on the Project Site, providing habitat for many different species of wildlife. Approximately 268 acres of the Project Site will be set aside as conservation lands. These lands will include forested wetlands, emergent wetlands, streams and riparian areas, shrub wetlands, upland forests, shrublands, and small grasslands. Wherever feasible, individual patches of conservation lands will be connected to one another by conservation or open space corridors; riparian areas will be reforested; and compatible recreation opportunities will be encouraged and maintained.

Specific habitat management goals and objectives will be written as preservation and restoration activities are completed. Generally, forested areas will be preserved and no active forest management will take place. Some limited tree cutting may occur to protect public safety such as when a potential falling tree may endanger

users of the recreational trails. Tree plantings will occur in forest restoration and riparian areas. Control of invasive species will also occur as necessary in forested habitats as it will in all habitat types.

Shrublands and grasslands will be maintained in an early successional state through the use of mechanical or chemical means. Mowing will generally be the preferred management tool. Shrublands will be located between grasslands and other open space areas and forested patches to create a feathered edge, a condition generally preferred by most wildlife species that are found using edge habitats. Existing wetlands within the Conservation Areas will be preserved in their current wetland type. Wetland enhancement activities, such as control of invasive species, will occur with strict adherence to all applicable regulations.

Restoration activities will be conducted using industry standard techniques and tested methods. All activities will incorporate best management practices to minimize site disturbance while maximizing habitat quality. Any plantings associated with restoration activities will include native species to the fullest extent possible. Restoration activities will be designed to provide habitat for a broad array of species with additional consideration given to species of conservation concern. These species will be identified from existing conservation plans such as the New York State Comprehensive Wildlife Conservation Strategy, Partners in Flight plan, Bird Conservation Region 13 species list, and the New York State Threatened and Endangered Species list. Some of the species likely to benefit from the preservation and restoration activities on the Project Site include American black duck (*Anas rubripes*), wood duck (*Aix sponsa*), least bittern (*ixobrychus exilis*), Virginia rail (*Rallus limicola*), American woodcock (*Scolopax minor*), wood thrush (*Hylocichla mustelina*), blue-winged warbler (*Vermivora pinus*), cerulean warbler (*Dendroica cerulea*), golden-winged warbler (*Vermivora chrysoptera*), field sparrow (*Spizella pusilla*), and rose-breasted grosbeak (*Pheucticus ludovicianus*). All of these species are identified as priority species in Bird Conservation Region 13.

6.5 Technology Industry Health and Safety

This section discusses the potential impacts and mitigation measures associated with the management and use of chemicals within the technology manufacturing industry. The industry includes a wide range of manufacturing activities, each with its own unique requirements for process chemistry. However, even though the specific chemicals used within the facilities will vary, each facility will tend to utilize similar categories of chemicals and maintain similar health and safety management practices.

The leaders of the technology manufacturing industry are pioneering new process chemistries and technologies in efforts to reduce the quantity of chemicals used per unit of production, as well as the toxicity of the chemicals utilized. There are many reasons why the industry leaders are so vigorously pursuing these efforts. First, process chemicals represent a significant portion of the manufacturing cost, and improvements which reduce the quantity of chemicals required will positively impact revenue. Second, substituting less hazardous materials when possible reduces the

potential impacts associated with worker exposure or chemical release, and allows for simpler handling and management systems. Third, substituting or reducing quantities of chemicals may allow facilities to more easily comply with State and Federal health, safety and environmental requirements. While the quantity of chemicals used at a technology manufacturing facility is roughly proportional to the size of the cleanroom, the largest facilities tend to be owned and operated by the industry leaders, which place downward pressure on the quantity of chemicals used per unit of production. As a result of industry efforts, the technology manufacturing industry has achieved an excellent health and safety record.

The Project Sponsor plans to develop the Project Site to enable advanced technology manufacturing operations in the following areas:

- Photovoltaic ("PV") Manufacturing
- Flat Panel Display ("FPD") Manufacturing including Medical Imaging Display (MID)
- Biopharmaceutical/Nanotechnology-Enable Industries ("Bio-pharm/Nano").

These technologies are described in greater detail in the *Industry Requirements and Environmental Health & Safety Impacts Report* (Appendix H).

Because these manufacturing technologies and products are emergent and the precise mix of the installed facilities at STAMP cannot yet be determined, developing a characterization of environmental emissions and discharges requires some estimation. The ultimate goal of this analysis is to develop a bounding case such that an assessment of potential environmental impacts reflects the envelope of considerations that may actually occur with development or build out of STAMP. To that end, the quantitative data described in this section is based on best available knowledge, and are intended to document the upper end magnitude of discharges for the purpose of assessing potential adverse impacts. Specific regulatory permit limits will be established by appropriate regulatory agencies (such as the NYSDEC) during the course of permitting individual manufacturing facilities.

Primary Assumptions

The following describes the primary general assumptions used to develop the data provided in this report.

- All manufacturing facilities will have the capacity to operating 24 hours per day, 365 days per year.
- The total technology manufacturing building area square footage will be approximately 4,000,000 square feet (square feet).
- For the purpose of quantifying environmental emissions and discharges, the estimated mix of manufacturing technologies expected to be present in the fully developed park is as follows:
    - 85% Photovoltaic

  - 5% Flat Panel/Medical Imaging Display
  - 10% Bio-pharm/Nanotechnology

- There are four primary photovoltaic manufacturing technologies and for the purpose of characterizing environmental emissions the estimated presence of these PV technologies in the fully build-out of the Project are as follows:
  - Crystalline Silicon – 15%
  - Amorphous Silicon – 10%
  - Cadmium Telluride ("CdTe") – 35%
  - Copper – Indium – Gallium – Selenium ("CIGS") – 40%

For the purpose of providing data quantities, the approximate total building manufacturing square footage for both FPD/MID and Bio-pharma/nano industries is assumed to be 600,000 square feet.

6.5.1 Chemical Use and Storage

Chemical Use

All three of the advanced manufacturing technologies considered in this report involve a variety of chemical substances, and will have associated Material Safety Data Sheets ("MSDS") representing the specific chemicals made available to employees and agencies. Wet acidic and alkaline chemicals are used for etching and cleaning. Specialty gases are used as dopants and chamber cleaning chemicals. Bulk gases are used as dry seals and purge gases. Organic materials are used as solvents. Various heavy metals are also used, for example, to construct the heart of the PV cell – the absorber layers.

Site management and use of these chemicals involve commercially-proven engineering controls including pollution abatement systems; administrative controls including training, monitoring, inventory control and safety checks; and a host of environmental and safety regulations and procedures to bolster company internal operation and maintenance programs and management systems.

The remaining sections describe the types and quantities of chemicals and component materials involved in PV, FPD/MID and bio-pharma/nanotechnology enabled industries and the engineering, administrative, and regulatory control mechanisms typically used and required by the industries to ensure safe management and an efficient use of materials. Chemical use estimates are conservative as they were primarily derived from engineering design information, which is based on the theoretical maximum production capacity of a manufacturing facility.

Tables 6-11 through 6-16 provide the estimated maximum annual chemical and component material consumption rates associated with the various manufacturing technologies.

TABLE 6-11
Crystalline Silicon (cSi) PV Technology Chemical Use

Component or Chemical Name	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Ethanol 95%/ Methanol 5%	410,000	L
Solvent (Alcohol) Based Flux	150,000	L
Solvent (Alcohol) Based Solder Paste	700	L
Silver Plating Solutions (silver methanesulfonate)	11,000	L
Boron Trioxide/ Propylene Glycol Monomethyl Ether	2,400	L
Phosphorus Oxychloride	3,200	L
Dielectric Gel	98,000	S
Nitric Acid 69%	670,000	L
Potassium Hydroxide	75,000	L
Ethanol 95%	700	L
Isopropyl Alcohol	28,000	L
Hydrofluoric Acid	9,700,000	L
Hydrochloric Acid	18,300,000	L
Sulfuric Acid (98%)	34,300,000	L
Solvent Based Aluminum Paste	190,000	L
Solvent Based Silver Paste	28,000	L
Ammonia	500	G
Argon	6,500,000	G
Nitrogen	6,700,000	G
Oxygen	290,000	G
Hydrogen	12,000	G

The annual consumption amounts are estimated based on an annual production level of 170 MWp. A typical large cSi manufacturing facility would have an annual production level of perhaps 200 MWp.

TABLE 6-12
Amorphous Silicon (a-Si) PV Technology Chemical & Component Material Use

Component or Chemical Name	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Glass	49,500,000	S
Silane	200,000	G

Component or Chemical Name	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Phosphine (0.5% in Hydrogen)	800	G
Trimethyl Borate (0.5% in Hydrogen)	200	G
Nitrogen Trifluoride	260,000	G
Nitrogen	36,600,000	G
Argon	130,000	G
Hydrogen	720,000	G
Helium	36,000	G
Methane	1,200	G
Silver	6,500	S
Zinc Oxide	1,400	S
Nickel/Vanadium	2,700	S
Polyvinyl Butyl (PVB)	3,800,000	S
Epoxy/Sealant	33,000	S
Solvent	70	L
Solder Flux	90	L
Bus Bar (Copper Core)	18,000	S
Junction Box (Plastic)	110,000	S
Mounting Rail (Galvanized Steel)	3,300,000	S
Water-based Glass Cleaning Agents	510,000	L

Chemical and component material annual consumption rates are estimated based on a 140 MWp production level which would be typical of a large a-Si facility.

TABLE 6-13
Cadmium Telluride (CdTe) PV Technology Chemical & Component Material Use

Component or Chemical Name	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Glass	62,000,000	S
Zinc/Tin Alloy	34,000	S
Cadmium Sulfide	28,000	S
Cadmium Telluride	140,000	S
Cadmium Chloride	55,000	S
Ethylenediamine	990,000	L
Copper (II) Acetate	1,700	L
Methanol	800,000	L

Component or Chemical Name	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Negative Photo Resist	400,000	L
Propylene Glycol Mono Methyl Ether Acetate	190,000	L
Sodium Carbonate	220,000	L
Graphite conductor paste	220,000	S
Nickel Vanadium Alloy	44,000	S
Aluminum	66,000	S
Vinyl Tape	420,000	S
Aluminum Foil	17,000	S
Ethyl Vinyl Acetate	3,600,000	S
Copper wire & polymer	1,700,000	S
Nitrogen	27,400,000	G
Oxygen	1,900,000	G
Argon	4,800,000	G
Helium	1,800,000	G

Chemical and component material annual consumption rates are estimated based on a 280 MWp production level. A typical large CdTe facility would have a production level of perhaps 140 MWp.

TABLE 6-14
CIGS PV Technology Chemical & Component Material Use

Component	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Ammonium Hydroxide (28%)	5,100,000	L
Thiourea	9,700	S
Cadmium Sulfate	26,000	S
Hydrochloric Acid (37%)	9,500,000	L
Water Based Detergents	99,000	L
Copper	59,000	S
Indium	100,000	S
Gallium	17,000	S
Selenium	130,000	S
Molybdenum	150,000	S
Zinc/Indium	110,000	S
Nitrogen	66,700,000	G

Component	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Helium	190,000	G
Argon	4,300,000	G
Oxygen	1,600,000	G
Glass	43,300,000	S
Aluminum	28,300,000	S

The annual consumption amounts are estimated based on an annual production level of 690 MWp. A typical large CIGS manufacturing facility would have an annual production level of perhaps 200 MWp.

TABLE 6-15
Flat Panel Display (FPD) Technology Chemical & Component Material Use

Component	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
Nitrogen	24,000,000	G
Oxygen	520,000	G
Argon	25,000	G
Hydrogen	3,400	G
Helium	1,100	G
1% Phosphine in Hydrogen	700	G
Chlorine	2,800	G
Nitrogen Trifluoride	4,300	G
Ammonia	4,300	G
Sulfur Hexafluoride	2,000	G
Hydrofluoric Acid (25%)	940,000	L
Hydrofluoric Acid (49%)	100,000	L
Silane	1,600	G
Phosphoric/Acetic/Nitric Etch	1,100,000	L
Acetic Acid	23,000	L
Nitric Acid	33,000	L
Ferric Chloride (25%)/HCl(5%) Etchant	760,000	L
N-Methyl-2-pyrrolidone	1,000,000	L
PGME (30%)/PGMEA (70%)	1,600,000	L

Component	Approximate Annual Use (Pounds)	Physical State (G=Gas, L=Liquid, S=Solid)
TMAH (0.4 - 25%)	4,500,000	L
Potassium Hydroxide (10-20%)	2,000,000	L
Potassium Hydroxide (0.05%)	5,800,000	L
Detergent	40,000	L

TABLE 6-16
Nanotechnology Chemical & Component Material Use

Component	Approximate Usage Per Year (Gallons)	Physical State (G=Gas, L=Liquid, S=Solid)
Acids		
Sulfuric acid	64,000	L
Hydrochloric acid	19,000	L
Phosphoric acid	8,400	L
Hydrofluoric acid	6,500	L
Copper plating bath	2,900	L
Sulfuric acid (8%)/hydrogen peroxide (8%)	2,200	L
2-propenoic acid	600	L
Ammonium fluoride	62,000	L
Methane sulfonic acid	1,100	L
Caustics		
Ammonium hydroxide	24,000	L
Tetramethyl ammonium hydroxide (1 - 3.5%)	170,000	L
Potassium Hydroxide (5%)	1,700	L
STI CMP slurry	3,300	L
Copper CMP slurry	11,000	L
Solvents		
2-Methylaminoethanol	500	L
Isopropyl alcohol	7,500	L
Tetraethyl orthosilicate	1,200	L
Ethyl lactate	44,000	L

Component	Approximate Usage Per Year (Gallons)	Physical State (G=Gas, L=Liquid, S=Solid)
Acetone	900	L
Dimethyl sulfoxide (95%)	3,700	L
Normal methylpyrrolidone	2,100	L
Hexamethyl disilazane	200	L
Octamethylcyclotetrasiloxane	300	L
Cyclopentanone	22,000	L
Chemical Mechanical Polish (CMP) Slurries		
Tungsten polish	6,200	L
Copper polish	88,000	L
Barrier polish	60,000	L
Dielectric polish	10,000	L
Oxide polish	28,000	L
Oxidizers		
Hydrogen peroxide	110,000	L
Nitric acid	4,800	L
Ammonium peroxy disulfate	300	L
Specialty Gases		
Arsine	10 lbs	G
Diborane/Hydrogen Mix	20 lbs	G
Methyl Silane/Hydrogen Mix	90 lbs	G
Germane/Hydrogen Mix	30 lbs	G
Diborane/Nitrogen Mix	30 lbs	G
Phosphine/Hydrogen Mix	80 lbs	G
Boron Trichloride	300 lbs	G
Ethylene	40 lbs	G
Hexafluorobutadiene	300 lbs	G
Difluoromethane	200 lbs	G
Methyl Fluoride	100 lbs	G
Chlorine	500 lbs	G
Carbon Monoxide	600 lbs	G

Component	Approximate Usage Per Year (Gallons)	Physical State (G=Gas, L=Liquid, S=Solid)
Dichlorosilane	300 lbs	G
Fluorine/Argon/Neon	20 lbs	G
Fluorine/Krypton/Neon	40 lbs	G
Hydrogen Bromide	700 lbs	G
Hydrogen Chloride	4,100 lbs	G
Nitrogen Trifluoride	900 lbs	G
Ammonia	2,500 lbs	G
Silicon Tetrachloride	100 lbs	G
Silicon Tetrafluoride	700 lbs	G
Silane	900 lbs	G
Trimethylsilane	400 lbs	G
Tungsten Hexafluoride	1,300 lbs	G
Helium/Nitrogen Mix	300 lbs	G
Argon/Xenon/Neon Mix	400 lbs	G
Perfluorocyclobutane	300 lbs	G
Tetrafluoromethane	3,300 lbs	G
Fluoroform	900 lbs	G
Krypton/Neon Mix	10 lbs	G
Sulfur Hexafluoride	100 lbs	G
Sulfur Dioxide	200 lbs	G
Carbon Dioxide	1,200 lbs	G

Hazardous Materials Management - Engineering

All three of the manufacturing technologies considered typically have similar commercially-proven engineering control systems to allow for the management of hazardous materials in a manner that is protective of human health and the environment. The storage, use, and management of hazardous materials described below typically applies to all three of the manufacturing technologies under consideration.

Hazardous process chemicals will be stored and/or used at several locations at a typical facility including outdoor areas, the chemical storage rooms, manufacturing process areas, and other indoor areas. The types and quantities of chemicals stored or used in each of these areas are typically documented in a Hazardous Materials Inventory Statement (HMIS), which would be provided to the local fire and other

emergency services agencies as part of any safety and emergency planning efforts for the Project. The following narrative describes the hazardous materials management practices and engineering controls typically provided for the advanced technology manufacturing facilities considered for the Project Site.

Outdoor areas

Hazardous process chemicals are typically delivered and stored and/or used in the following outdoor areas:

Bulk Gas Yard: The bulk gas yard would consist of steel tanks designed for storing cryogenic gases including argon, nitrogen, hydrogen, and oxygen. The tanks are typically located within a fenced area on a concrete pad. A truck offloading station is typically located adjacent to the tank pad on a concrete apron. The cryogenic gases stored at the bulk gas pad are non-hazardous with respect to surface or groundwater contamination, and do not pose a risk to waters in terms of spill control and containment. A majority of the bulk gases used at these facilities are inert and do not pose a threat of a toxic release to the atmosphere. Silane gas, while not toxic, is pyrophoric and a source of silicon for thin film PV manufacturers. There are international, national and state codes and standards with respect to the design, construction, storage and use of silane. These include pressure regulation and emergency relief valves; separation distances to protect people and structures from an inadvertent release; and flame and gas detection and fire protection deluge systems.

Emergency Generator Area: Emergency standby back-up power is typically provided by several diesel fired emergency engine generators also located in an outdoor yard area. Each generator typically involves several thousand gallons of diesel fuel with secondary containment that consists of a rupture basin sized for 125% of the primary storage tank. The generator, tank and rupture basin is normally totally enclosed to prevent rainwater intrusion. Diesel deliveries typically occur over a concrete apron sloped to a catch basin to collect drips or spills that could occur during filling operations. The storage and use of this volume of oil is regulated by the Federal Spill Prevention Control and Countermeasures (SPCC) rules and NYSDEC regulations for the bulk storage of petroleum. These rules require oil storage to have secondary containment and facility owners to prepare, implement and have certified an SPCC Plan.

Bulk Fuel Oil Storage Area: Depending on the findings of a natural gas supply reliability evaluation, some potential industry tenants at the Project Site may require bulk storage of fuel oil as a back-up fuel supply for the boiler systems. A typical bulk fuel oil storage and delivery system would include the following features:

- Full passive secondary containment for the tanks
- Double-contained transfer piping
- Leak detection
- Visual and audible alarms triggered by low and high fuel level indicators

Air Pollution Control and Wastewater Treatment Areas

Air pollution control systems typically include wet fume scrubbers to control acidic or alkaline vapors, ammonia or oxides of nitrogen, thermal oxidizers to control VOCs and baghouses or other filters to control particulates. Wastewater treatment systems typically involve heavy metal filtration and/or ion exchange, fluoride treatment (precipitation) and pH adjustment (neutralization).

The wet fume scrubbers are typically located in a secondary containment basin sized for 110% of the primary sump capacity plus 24 hours of rainfall from a 2-year storm event and equipped with a sump, sump pump, and level sensors. Any leak from the scrubber system to the containment area could be pumped to the wastewater treatment system. The containment area is typically coated with chemically resistant coatings to seal and protect the concrete and prevent leaks or spills from migrating through cracks and into the soil or groundwater below. Chemical piping to the scrubbers and drain piping from the scrubbers is normally double contained and equipped with low point leak detection. Mechanical connections on the piping are located inside a valve box enclosure also equipped with leak detection.

Wastewater treatment tanks are typically located inside a concrete containment area sized for 110% of the largest tank plus 24 hours of rainfall from a 2-year storm event. The containment area is typically coated with chemically resistant coatings to seal and protect the concrete and prevent leaks or spills from migrating through cracks and into the soil or groundwater below. Chemical or drain piping into or from these areas are typically in welded steel or chemically resistant tubing routed inside clear PVC secondary containment piping. Mechanical connections on chemical piping are located inside containment areas and/or valve boxes equipped with leak detection.

Bulk Chemical Storage Area

Bulk chemical storage may include raw acids or concentrated acid waste. The material would be stored in lined steel tanks and equipped with high level sensors and vented to the air pollution control systems. The tanks would be provided with a containment basin coated with chemically resistant coatings and equipped with sumps, sump pumps, and leak detection. Chemical piping to and from the tanks could be either lined steel or chemically resistant tubing inside of secondary containment piping equipped with low point leak detection. Mechanical fittings in the piping systems are typically located inside ventilated valve box enclosures equipped with leak detection.

Chemical Storage Rooms

Hazardous chemicals used in these facilities are typically delivered to a central chemical storage and distribution room through a dock facility. These docks are typically designed such that delivery trucks back into the dock below a covered awning so that the material transfer operation is protected from the weather. The dock itself is normally surrounded by curbs and trenches and sloped towards the

central chemical storage room such that firewater and/or leaks or spills drain into the central chemical storage room containment area.

The truck apron adjacent to the dock is often equipped with a trench that drains to a concrete containment sump or dedicated containment tank. The containment sump and surrounding area would be coated with chemically resistant coating to protect the concrete and prevent migration of leaks or spills. Either the sump or containment tank arrangement is typically designed to contain 125% of the largest container handled plus rainwater from a 2-year, 24-hour storm and, if necessary, 20 minutes of fire water flow. A sump would also be installed and equipped with a normally closed valve. Material collected in the sump and/or trench would be sampled and analyzed to determine appropriate disposition. If rainwater only is collected in the sump, operators would open the valve to allow drainage to the storm water collection system. If a spill occurs or analysis indicates the presence of hazardous material, operators could manually initiate sump pump operation to pump the material to the appropriate wastewater treatment system.

Other chemical storage rooms are designed to store all hazardous chemicals not in use or ready for use in the manufacturing or facilities areas. The rooms are typically designed with sloped concrete trenches and sumps to contain spills and firewater. The concrete is coated with chemically resistant coating to prevent leaks or spills from damaging the concrete or migrating through it. The trenches and sumps are sized to contain 110% of the largest container plus 30 minutes of firewater. Each area includes a low point sump and sump pump. Sumps are designed with level sensors to initiate sump pump operations and notify personnel of spills. Sump pumps can be piped to the appropriate wastewater treatment system. Typically there would be no floor drains in the chemical storage room that lead to either the sanitary or storm water systems.

Manufacturing Process Areas

Certain areas of the manufacturing process may rely on bulk chemical delivery systems as opposed to container (i.e., totes, 55-gallon drum, and bottles) transport and delivery of chemicals. For example, a majority of the hazardous process chemicals used in PV manufacturing occurs at the texturization process. From the chemical storage rooms, bulk chemicals are pumped to the process areas through chemically-resistant tubing inside clear secondary containment PVC piping. The secondary containment piping is equipped with low point drains and leak detection. Mechanical connections (valves) are located inside exhausted valve box enclosures equipped with leak detection.

Lower use hazardous process chemicals may be delivered in containers by carts and/or pallets designed with containment for 110% of the largest container being delivered. The containers are then transferred from the carts to bulk chemical delivery units (pumping stations) located inside the process areas where the chemicals are then pumped to the production tools through chemically-resistant tubing inside clear secondary containment PVC piping. The pumping stations and mechanical fittings (valves) are located inside exhausted enclosures equipped with leak detection.

Chemicals are normally contained inside the production tools in holding vessels and/or processing tanks (wet benches). The production tools are ventilated to either point of use abatement systems or central air pollution control systems. The holding vessels and processing tanks are located inside enclosures designed to contain leaks or spills. Spent chemicals are pumped from the processing tanks on the wet benches to lift stations through chemically-resistant tubing or piping inside clear secondary containment PVC piping. Lift stations consist of lined and unlined fiberglass reinforced plastic tanks and dual diaphragm pumps located in a coated secondary containment pan designed to contain 110% of the tank volume plus 30 minutes of firewater. Wastewater collected in the lift stations is pumped to the appropriate wastewater treatment system through chemically-resistant piping or chemically resistant tubing or piping inside clear secondary containment PVC piping. The secondary containment piping is equipped with low point leak detection.

Other Indoor Areas

Hazardous process chemicals used in other indoor areas may include low volumes of acids, bases, solvents, and miscellaneous production and facilities chemicals. Locations where these materials are used may include manufacturing support areas, such as laboratories and the central utilities building.

Manufacturing Support Areas:

Typical features of the containment systems for these areas include storage of small quantities of solvent in cabinets designed for solvent storage and the absence of floor drains in the manufacturing or nearby support areas.

Central Utilities Building: Chemicals are used for water and wastewater treatment in the central utilities building. Higher consumption utility chemicals are normally stored in the chemical storage room and pumped to the wastewater treatment systems. These utility chemicals would be routed through welded steel piping or chemical resistant tubing. Mechanical connections are located in valve box enclosures equipped with leak detection or in containment areas.

Lower volume chemicals used for water and wastewater treatment are typically delivered to the usage area in their original containers. Areas where these chemicals will be used are equipped with containment (curbs and/or trenches) and/or area sumps for collection of spills or leaks.

Wastewater treatment systems are located in concrete containment areas equipped with curbs or perimeter trenches designed to contain 110% of the largest tank. Containment area concrete is normally coated with chemically-resistant coatings. Sumps in the wastewater treatment area are also designed with level sensors to initiate pump operations and notify personnel of spills. Sump pumps are piped to the appropriate collection, containment, or treatment tank for appropriate disposition. There are usually no floor drains in the wastewater treatment areas.

Hazardous Materials Management – Administrative and Regulatory

A wide variety of environmental, health and safety laws and regulations and corporate standards or governance guide the design, construction, and operation of

these facilities in a manner that minimizes potential adverse impacts to human health and the environment. This section describes the types of areas that may include the storage and use of hazardous materials and petroleum products and associated typical engineering controls. In New York State, several regulatory programs are applicable to bulk chemical storage, bulk petroleum storage, and waste management. These regulatory programs are as follows:

- Hazardous Substance Bulk Storage Program (6 N.Y.C.R.R. Parts 595-599)
- Regulation of Petroleum Tanks (6 N.Y.C.R.R. Parts 612-614)

Fundamentally, these two regulatory programs establish standards to mitigate potential adverse impacts to human health and the environment including groundwater and surface water resources. In general, the regulatory standards address:

- Tank registration
- Secondary containment
- Integrity testing
- Leak Detection
- Inspections
- Material compatibility
- Monitoring and recordkeeping

Daily operations at the Project Site may involve the storage, handling and transporting of hazardous materials. The risk to public health and safety is greatly reduced through the use of a variety of regulated hazardous materials storage and use practices, as well as engineering controls and compliance with applicable building, safety and environmental laws and regulations. All hazardous materials would be transferred to and from the Project Site in Department of Transportation (DOT) approved containers by licensed chemical transporters. Facility system design and daily operations at the Project Site will comply with the Uniform Fire Code, Uniform Building Code, and a site- specific Hazardous Material Management Plan approved by the Town of Alabama Fire Department. Employees handling hazardous materials or waste will be trained in accordance with applicable Occupational Safety and Health Act (OSHA) and Resource Conservation and Recovery Act (RCRA) regulations, as well as supplemental corporate requirements.

Multiple environmental, health & safety programs will be implemented at the Project Site in order to comply with applicable provisions of the Town of Alabama Zoning Law, RCRA, New York State Department of Labor regulations, the Emergency Planning and Community Right-to-Know Act (EPCRTKA), and OHSA. Some of these provisions are briefly described below.

- OSHA Hazard Communication (HAZCOM) – hazard communication in accordance with 29 CFR 1910.
- Flammable Liquid & Hazardous Chemicals – storage in Underwriters Laboratory (UL) approved flammable containers; compliance with state hazardous substance bulk storage program as applicable.
- Hazardous/Flammable Vapors – ventilation to achieve safe occupational exposure limits
- Compressed Gas Cylinders – secured storage and appropriate valve protection caps.
- Confined Space Entry – defining confined space and entry/retrieval protocols.
- Control of Hazardous Energies – lockout/tagout program for servicing energized equipment
- Personal Protective Equipment – applicable to energized electrical work and hazardous materials handling.
- Emergency Response/Evacuation – safe evacuation procedures and arrangements with local emergency response agencies.
- Ergonomics – work procedures to minimize musculoskeletal disorders (MSD)
- Fall Protection
- Forklift Operation – operator training and safety inspection checks.
- Incident/Injury Investigation Prevention & Reporting
- Labeling – labeling of chemical containers with OSHA approved labels.
- Ladders & Scaffolding – OSHA approved ladders and scaffolding
- Non-Electrical Hotwork – protocols involving any open flame or spark producing equipment.
- Safety Showers & Eye Washes – located during facility design.
- Hazardous Waste – employee training, implement contingency plan, waste manifesting and recordkeeping.
- Wastewater – wastewater monitoring, sampling and submission of a monthly discharge monitoring report.

Nanotechnology – Specific Considerations

Because the properties of nanoscale materials differ not only based on molecular identity, but also based on size and shape, a comprehensive understanding of nanomaterial risks and control strategies is still being developed. As such, margins of caution and safety are typically used when potential exposures to nanoparticles may occur.

Below is a brief summary of considerations provided by the regulatory agencies and institutes evaluating the environmental health and safety aspects of nanoscale particles.

USEPA

Nanoscale materials can qualify as fundamentally-new chemical substances, and USEPA requires manufacturers to determine if their materials are new or previously classified based on molecular identity.

If the nanoscale materials are determined to be new, a review is required to determine what action, if any, is required to ensure that the material does not pose unreasonable risk to human health or the environment. Since 2005, USEPA has received and reviewed around 100 new chemical notices under the Toxic Chemical Substances Act (TSCA) for nanoscale materials, including carbon nanotubes. USEPA has taken a number of actions to control and limit exposures to these chemicals, including limiting the uses of the nanoscale materials; requiring the use of personal protective equipment, limiting environmental releases; and requiring testing to generate health and environmental effects data.

If the nanoscale material is determined to be existing, regulatory review by USEPA may still be required, specifically if the use of the material qualifies as a significant new use. Under this case, USEPA may require Significant New Use Notice to provide detailed data on the nanoscale material and its role in production.

OSHA

OSHA's treatment of nanomaterials is generally covered under their General Duty Clause (*See* 29 § 5(a)(1)). A few key OSHA standards that might apply to production situations involving nanomaterials include, but are not limited to, the following:

- Section1904- Recording and reporting occupational injuries and illness
- Section 1910.132- Personal protective equipment, general requirements
- Section 1910.133- Eye and face protection
- Section 1910.134- Respiratory protection
- Section 1910.138- Hand protection
- Section 1910.141- Sanitation
- Section 1910.1200- Hazard communication
- Section 1910.1450- Occupational exposure to hazardous chemicals in laboratories
- Certain substance-specific standards (e.g., Section 1910.1027- Cadmium)

NIOSH

The National Institute for Occupational Safety and Health (NIOSH) provides guidance on the occupational safety and health implications and applications of nanotechnology.

NIOSH generally regards nanomaterial enabled bulk products that incorporate nanoparticles or nanoscale features to have a low risk due to their non-inhalable size (e.g. composites, integrated circuits). NIOSH offers precautionary measures to mitigate potential environmental, health and safety risk associated with nanomaterial processing and it is anticipated these and other measures would be evaluated by STAMP tenants at a minimum. NIOSH precautionary measures include the following:

- The control of airborne exposure to nano-aerosols can be accomplished with standard engineering controls similar to those used to control general aerosols.
- Implement a risk management program to mitigate nanomaterial exposure. Program elements would include the following:
    - Evaluate hazards based on available physical, chemical, toxicological and health-effects data.
    - Assess worker job task to identify potential exposures
    - Educate and train workers in the proper handling of nanomaterials
    - Establish criteria for evaluating engineering controls (exhaust ventilation and control) at areas where exposure potential exists
    - Develop procedures for selecting proper personal protective equipment
- Well designed exhaust ventilation systems with high-efficiency particulate air (HEPA) filters can effectively remove nanomaterials.
- Implement good work practices include the use of HEPA vacuum pickup and wet wiping methods.
- Evaluate the use of respirators in additions to engineering and administrative controls.

With implementation of the industry health and safety requirements outlined above, as well as compliance with the applicable local, federal and state regulatory requirements, the future uses at the Project Site will not present a potential significant adverse impact to the public and Project Site workers' health and safety.

6.6 Traffic and Transportation

This section addresses the existing conditions, potential impacts and proposed mitigation measures associated with traffic and transportation.

This section was prepared using data available from the New York State Department of Transportation (NYSDOT) and the New York State Thruway Authority (NYSTA), as well as field data collected in the area of the Project Site. The specific analysis and findings are set forth in the *Traffic Impact Study* (TIS) (Appendix I).

The Project shall consist of a mixed use development that primarily includes technology manufacturing uses and ancillary development totaling 6,130,000 square-feet (SF) of floor space with over 9,000 employees as shown in the following list. Not all of the employees will be on the Project Site at once, as there are various work schedules and shifts.

- Tech Manufacturing 4,400 employees (1,100 per shift)
- Tech Management 300 employees
- Sustainable Construction 400 employees
- Industrial Flex Space 2,333 employees
- Office 1,667 employees
- Retail 180 employees
- Research & Development 50 employees

The Project will be constructed in phases over a 20-year planning horizon with Phase 1 consisting of the construction of 1,000,000 SF of floor space with 1,282 employees for a technology manufacturing use. Phase 1 of the development is assumed to be completed by 2015, while it is assumed that full build-out will be completed by 2035. A threshold analysis equal to 70 percent of the Project Site's trip generation was also evaluated to facilitate the phasing of transportation improvements.

6.6.1 Existing Conditions

The Project Site is bounded by three roads with NY Route 77 to the north, NY Route 77/63 Overlap to the east, and Judge Road to the south. A fourth road (Crosby Road) extends north-south through the Project Site. Functional classification is a method of grouping roadways by the character of service they provide. These roadways are functionally classified as follows:

- NY Route 77 – Rural Minor Arterial/Major Collector
- NY Route 77/63 Overlap - Rural Minor Arterial
- Judge Road – Local Street
- Crosby Road – Local Street

In addition, NY Route 77 and NY Route 63 are both designated as qualifying or access highways for larger dimension vehicles in the State of New York. Information provided in NYSDOT's *2009 Pavement Data Report* indicates that there is an average of 8% heavy vehicles on NY Route 77 and NY Route 63. Detailed

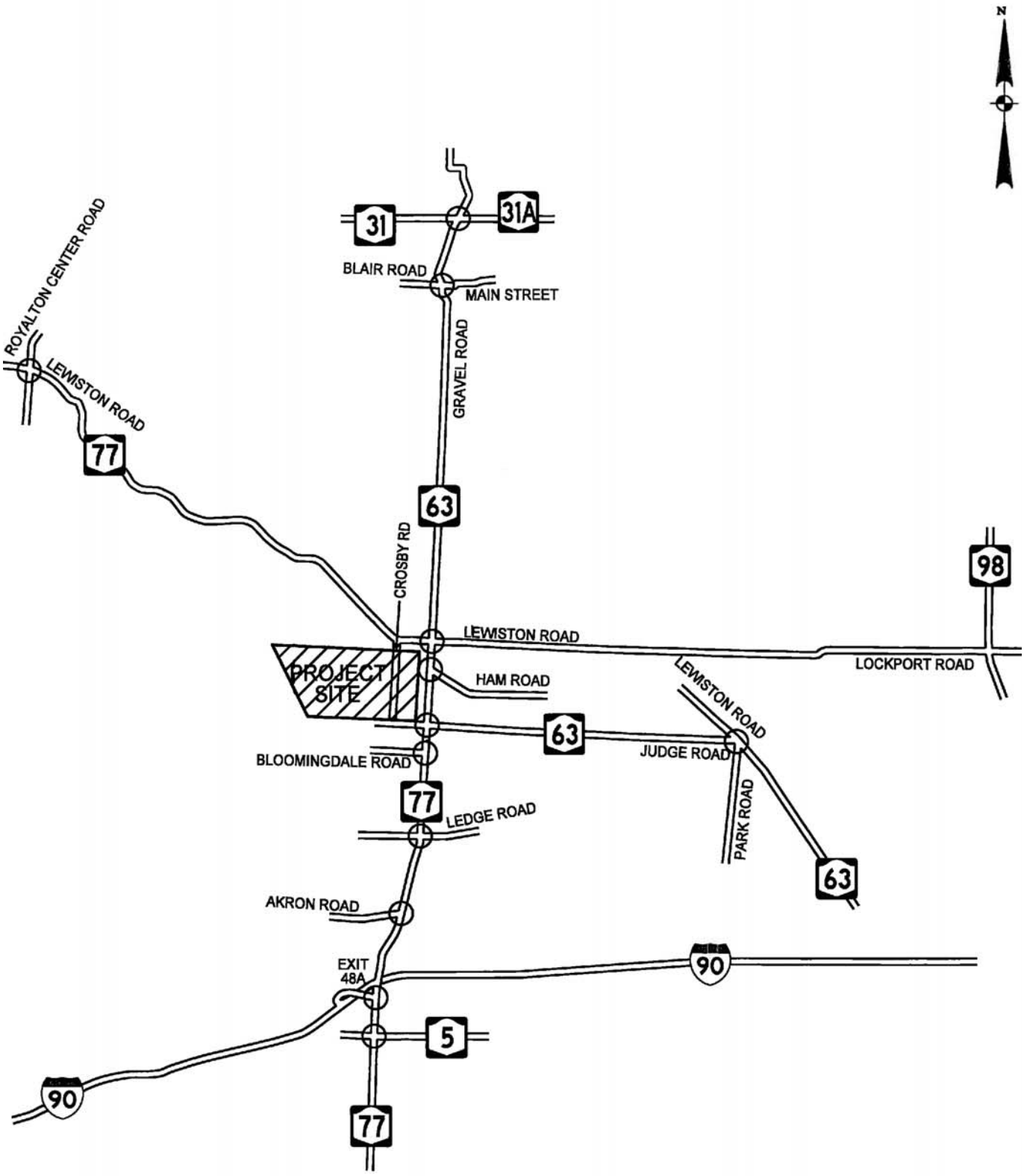
descriptions of these roadways and the following study area intersections (Figure 6-10) are included in the *TIS* (Appendix I):

- NY Route 63/NY Route 31/NY Route 31A
- NY Route 63/Blair Road/Main Street
- NY Route 77/NY Route 63/Lewiston Road
- NY Route 77/63 Overlap/Ham Road
- NY Route 77/NY Route 63/Judge Road
- NY Route 77/Bloomingdale Road
- NY Route 77/Ledge Road
- NY Route 77/Akron Road
- NY Route 77/I-90 Exit 48A
- NY Route 77/NY Route 5
- NY Route 77 /Royalton Center Road
- NY Route 98/Lockport Road
- NY Route 63/Lewiston Road/Park Avenue

Intersection turning movement traffic counts were conducted at the study area intersections during February 2010 and during November 2010. The traffic counts were done during the AM commuter peak from 7:00 to 9:00 AM and during the PM commuter peak from 4:00 to 6:00 PM. These time periods represent the peak morning and afternoon commuter periods for adjacent street traffic and the Project Site. A review of the seasonal variations of traffic in the area indicates that there are generally higher traffic volumes during the summer months due primarily to the Project Site's proximity to recreation centers such as the Darien Lake Amusement Park located south on NY Route 77-63. Therefore, the AM and PM peak hour turning movement counts conducted in February and November were factored to represent average August conditions. The resulting peak hour traffic volumes form the basis for all traffic forecasts.

An automatic traffic recorder (ATR) was installed by the NYSDOT on NY Route 77 just south of the NY Route 77/NY Route 63/Judge Road intersection to record hourly traffic volumes from Tuesday, August 10, 2010 through Wednesday, August 18, 2010. The following observations are evident based on the existing traffic volume data:

- The AM peak hour generally occurred from 7:00 to 8:00 a.m. while the PM peak hour generally occurred from 4:00 to 5:00 p.m.



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Figure 6-10
Study Area Intersections

Town of Alabama, New York

- The two-way traffic volume on NY Route 77 adjacent to the Project Site is approximately 150 vehicles during the AM peak hour and 200 vehicles during the PM peak hour. The two-way traffic volume on the NY Route 77/63 Overlap adjacent to the Project Site is approximately 360 vehicles during the AM peak hour and 530 vehicles during the PM peak hour. The two-way traffic volume on Judge Road adjacent to the project site is approximately 45 vehicles during the AM peak hour and 105 vehicles during the PM peak hour.
- Heavy vehicle percentages on the NY Route 77/63 Overlap generally range from 5% to 13% by approach during the AM and PM peak hours. Buses account for less than 1% of the traffic.

Regional transit service available in the Project's vicinity is provided by B-Line – Batavia Bus Service (BBS) which is an operating subsidiary of the Rochester Genesee Regional Transit Authority (RGRTA). BBS provides curb-to-curb service within Genesee County, however service is limited to three days per week with each day restricted to a specific regional area. For example, service is only provided to the Town of Alabama on Tuesdays and a rider can only travel to the Towns of Oakfield, Darien, Pembroke, and Corfu or back to the City of Batavia. Several daily bus routes are also provided within the City of Batavia.

A review of the existing road network indicates that sidewalks and crosswalks are not provided at any of the study area intersections and that the pedestrians observed during the turning movement counts used the available shoulders. Bicycles either share the road with vehicles or utilize the shoulders.

6.6.2 Potential Impacts and Mitigation Measures

The typical AM and PM commuter hours represent the most conservative, "worst case" time periods to calculate potential Project traffic. The trip generation evaluation contained in the TIS indicates that Phase 1 of the Project will generate 403 and 402 new AM and PM peak hour trips, respectively, while full build-out of the Project (assumed in Year 2035) will generate approximately 2,034 and 2,749 new AM and PM peak hour trips, respectively. The 70 percent threshold will generate 1,424 and 1,924 new AM and PM peak hour trips.

Various improvements are identified to mitigate the Project's potential transportation impacts. It is noted that the improvements typically include traffic signals and turn lanes at intersections. Based on conversations with NYSDOT, alternative traffic control such as roundabouts shall be considered, and the intersections shall be monitored to determine when the improvements should be installed.

Access to the Project Site will be provided via Crosby Road during Phase 1. It is recommended that the NY Route 77/NY Route 63/Judge Road intersection and the NY Route 77/Ledge Road intersection be monitored for the potential installation of traffic signals during this phase of the Project's development (Figure 6-11).

After Phase 1 and before the 70 percent threshold for Project build-out is reached, it is recommended that a bypass road be constructed through the Project Site from NY Route 77/63 Overlap just north of Ham Road to NY Route 77 at the existing location

of the intersection of Crosby Road. This connector road will provide access to the Project Site, and will allow through traffic on NY Route 77 to bypass the Hamlet of Alabama, reducing potential traffic impacts in the Hamlet (Figure 6-12). Designating the bypass road as Route 77 and de-designating existing NY Route 77 though the Hamlet of Alabama will be considered. In addition to the connector road, several new site driveways will be constructed as needed and in correlation to the phased development of the Project Site. These site access improvements include two driveways on NY Route 77, two driveways on Judge Road, and two driveways on NY Route 77/63 Overlap (in addition to the bypass road curb cut).

Capacity improvements (Figure 6-13) may be needed at several off-site intersections including:

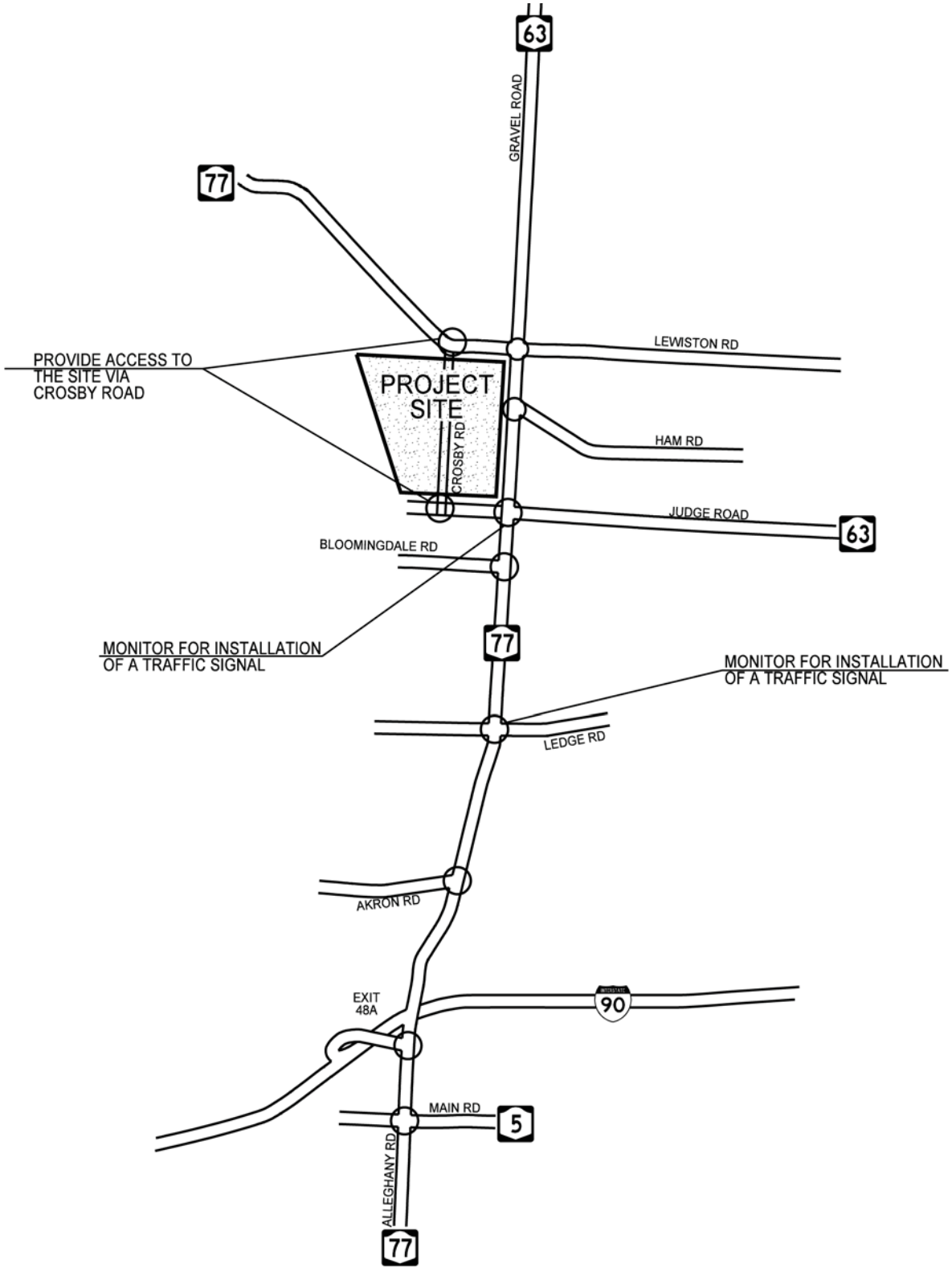
- NY Route 77/NY Route 63/Judge Road
- NY Route 77/Bloomingdale Road
- NY Route 77/Ledge Road
- NY Route 77/Akron Road
- NY Route 77/I-90 Exit 48A

The timing and necessity of these improvements will be confirmed after completion of Phase 1 of the Project Site development based on future monitoring of the specific traffic needs for future phases of development.

The full build-out analysis of the Preferred Alternative indicates that a majority of the study area intersections will continue to operate adequately. A two-lane capacity analysis of NY Route 77 shows that only the Judge Road to Bloomingdale Road segment could become congested during full build-out conditions. Since additional mitigation above and beyond the improvements identified for the 70% threshold may be necessary to provide adequate operations at a few locations, it is recommended that a supplemental traffic analysis be conducted after the 70% threshold is reached or when the Project Site generates 1,925 trips during the PM peak hour. The supplemental analysis should focus on the intersections below:

- NY Route 77/NY Route 63/Judge Road
- NY Route 77/Bloomingdale Road
- NY Route 77/Ledge Road
- Route 77/Route 63/Lewiston Road

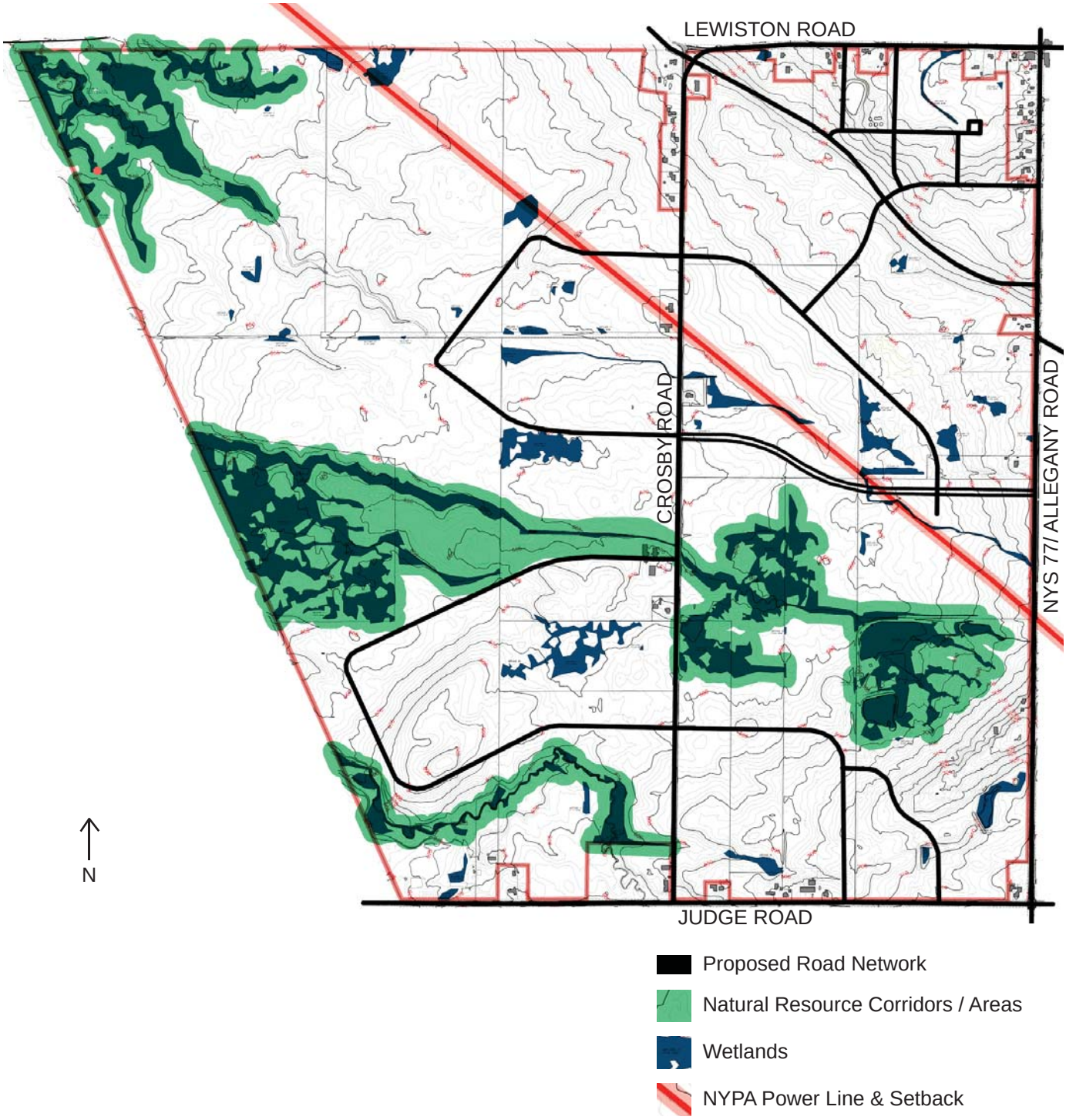
There are a number of potential LOS degradations (increases in delay at area intersections) that may result from the full build out of the Project and, in order to view those potential impacts in a conservative manner, they are being considered potential unavoidable impacts associated with the Project Site's traffic generation. Nevertheless, with implementation of the proposed traffic improvements set forth in



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Figure 6-11
Phase 1 Traffic Improvements

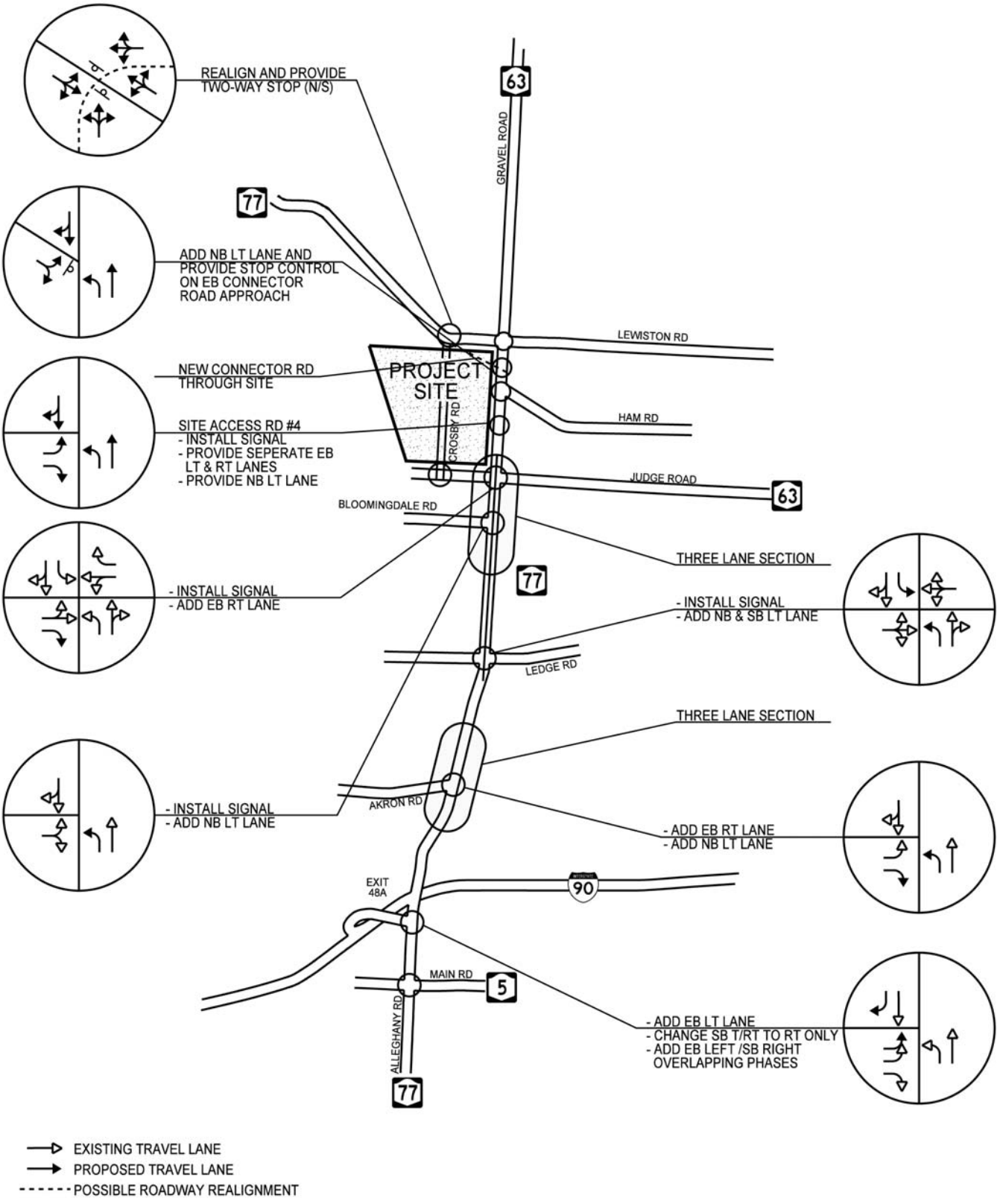
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Figure 6-12
Preferred Alternative - Road Network

Town of Alabama, New York



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Figure 6-13
70% Traffic Improvements

Town of Alabama, New York

the *TIS*, these potential impacts do not constitute potential significant adverse impacts to the existing traffic levels and/or patterns.

Coordination with the NYSTA and evaluation of the available capacity at the I-90 Exit 48A Interchange, as well as queuing at the adjacent signal indicates that the Interchange is capable of accommodating the build-out of the Project by managing the existing lanes, constructing an additional toll lane, or through an employer incentive that encourages EZ-Pass use.

In sum, the analysis set forth in the *TIS* indicates that the proposed improvements for the Project will provide adequate operations at the study area intersections and on the existing road network for the levels of traffic anticipated.

6.7 Land Use and Zoning

This section examines the existing land use patterns, zoning, and planning guidelines and requirements applicable to the Project Site, as well as assesses the compatibility of the Project relative to the existing land use conditions. This section will further summarize the proposed land use measures to be completed in conjunction with the Project which will minimize to the maximum extent practicable the potential impacts the Project may pose to existing land use patterns and plans.

6.7.1 Existing Land Uses and Zoning Requirements

The Project Site and surrounding areas largely consist of agricultural lands, recreational and open spaces, and a limited amount of large lot residential development. The southeast corner of the Project Site is part of the John White WMA and the Seneca Nation of Indians Reservation borders the Project Site to the west.

The Town of Alabama is located in the northwest part of Genesee County in Western New York. The Town encompasses 42.8 square miles and is bounded by Orleans County to the north and Erie and Niagara Counties to the west. There are currently approximately 642 households in the Town. Existing conditions, as described in the Oakfield-Alabama Comprehensive Plan, have not changed substantially since the plan was finalized in 2005. According to 2010 US Census figures, the current Town population is 1,869 people, a decline of 12 persons since 2000. The median age of a Town resident is slightly younger (36.3) than the remainder of Genesee County (37.9).

Median household income has risen in both the Town and the County since 2005, but lags behind surrounding communities. Current median income in the Town is estimated at $49,505 as compared to Genesee County, which is estimated at $51,586. Over the past few years, the median household income in the Town has grown at a compound annual growth rate of 2.33% and in the County at a rate of 2.72%. By comparison, the growth rate in the eastern part of Niagara County has been 2.82%, Orleans County has been 2.97%, and the eastern part of Erie County has been 3.21%.Current Zoning

The majority of the Project Site is zoned A-R. The southeast corner of the Project Site is part of the John White WMA and is zoned L-C (Figure 6-14).

Genesee County Smart Growth Plan

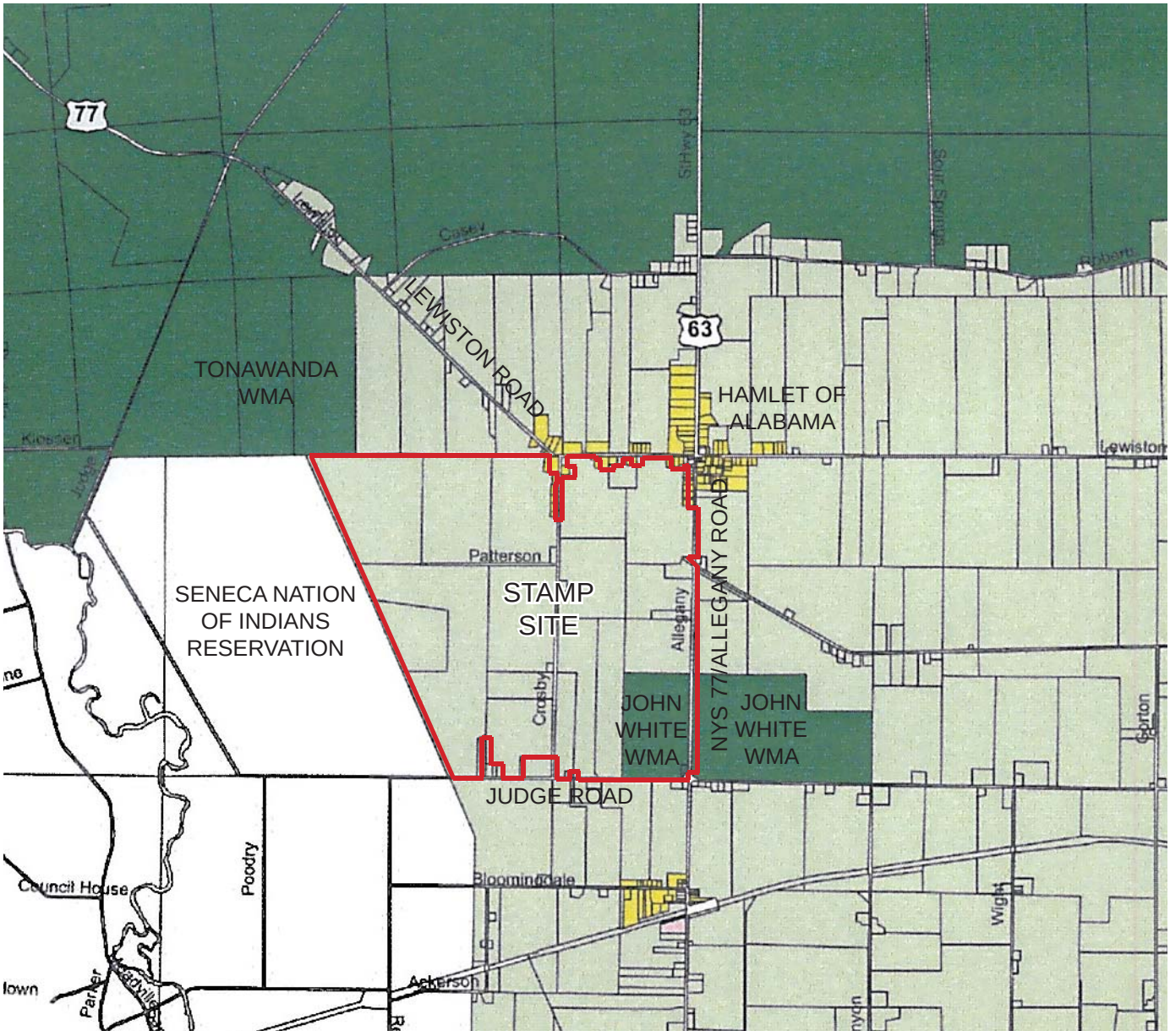
On May 9, 2001, the Genesee County Legislature adopted the Genesee County Smart Growth Plan (the "Smart Growth Plan") as a mitigation measure associated with the Genesee County Water Supply Project. The purpose of the Smart Growth Plan is to minimize the impacts from additional growth and development that would otherwise occur as a result of the extension of water service. In particular, the Smart Growth Plan is designed to limit the conversion of agricultural lands to non-agricultural uses. Over the decade or so since the Smart Growth Plan was originally adopted, the document has become a guiding force in Genesee County for farmland protection and discouraging development that is not consistent with the general principles of "smart growth."

Specifically, the Smart Growth Plan helps control growth by limiting the ability of landowners to connect to public water supplies outside of designated development areas. Within designated development areas, development and re-development is encouraged and there are no restrictions on water hook ups. Outside of designated development areas, access to the water system is limited to pre-existing structures and agricultural uses. All other proposed development requires a case-by-case review based upon agricultural impacts, consistency with economic development goals, other available infrastructure, and local comprehensive plans and zoning laws. Genesee County also evaluates the impact upon city/village revitalization programs and public health or other community needs.

The Smart Growth Plan designates three (3) Smart Growth development areas within the Town of Alabama. They are identified as follows:

- Hamlet of South Alabama: Route 63 and Maple Street Road.
- Hamlet of Basom: Route 77 at Bloomingdale Road.
- Hamlet of Alabama: Route 77 at Lewiston Road.

In 2007, the designated development area at the hamlet of South Alabama was expanded by 24 acres along the west side of Knowlesville Road, north of Judge Road. The Smart Growth Plan now requires a review of the Smart Growth Development boundaries every three (3) years (originally it was a two-year cycle). However, revisions can take place prior to a review year (the next review will be in 2013) if a municipality requests a change. After the local legislative body of a municipality indicates in writing that a change to its Smart Growth Development Area boundaries is desired and submits it to the County Legislature, the County Department of Planning evaluates the request and makes a recommendation to the County Legislature. The County Legislature then chooses to amend the Smart Growth Development Areas or take no action. As part of the review process, the County evaluates the impact upon City/Village revitalization programs and public health or other community needs. If the requested amendment is approved, the Smart Growth Plan is then amended.



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Figure 6-14
Existing Town of Alabama Zoning

(Source: Oakfield Alabama Comprehensive Plan)

Oakfield Alabama Comprehensive Plan

In 2004/2005, the Town of Alabama, the Town of Oakfield and the Village of Oakfield undertook a joint planning effort which culminated in the Oakfield- Alabama Comprehensive Plan (the "Comprehensive Plan"). The Comprehensive Plan was prepared in conformance with NYS Town Law Section 272-a and was designed to be consistent with the principles of the Genesee County Smart Growth Plan. Along these lines, the Comprehensive Plan designates development areas within which development would be encouraged.

Although the Comprehensive Plan was a joint planning effort designed to formulate a common vision for managing future growth and development, the Town of Alabama was individually responsible for adopting the relevant portion of the Comprehensive Plan and is individually responsible for its implementation. While the Town has officially adopted the Oakfield-Alabama Comprehensive Plan, the Village of Oakfield has not done so yet.

The Comprehensive Plan identified seven (7) specific goals and objectives for the Town of Alabama which represents a consensus of the community's values and vision:

- Protect, promote and preserve agriculture
- Maintain and enhance community character
- Provide potable water to appropriate areas of the Town
- Protect the environmental features and resources
- Provide for economic development
- Maintain and promote efficiency of government
- Encourage a diversity of housing types

In order to achieve these goals and objectives, the Comprehensive Plan outlines a number of implementation strategies for the Town including:

- Revise the Agricultural-Residential zoning district to build upon the intent that agricultural uses are primary uses in the district.
- Work with Genesee County to expand the designated development areas within the Smart Growth Plan in a manner that does not impact agriculture and fully utilizes the existing infrastructure located in the Town of Alabama. The Vision Map depicts larger, long-term planning areas. The development areas delineated in the existing Smart Growth Plan closely follow the existing pattern of hamlet development, and represent appropriate limits for sustaining short term growth (Figure 6-15). As future demand for growth may dictate, the development area boundaries should be expanded to correspond with the Vision Map.

- Draft a set of rural development guidelines that provide written standards and graphic examples to ensure that the vision for growth and development set forth in this document is achieved.
- During future reviews of the County's Agricultural District, recommend to Genesee County that non-agricultural lands be removed from the district. This is primarily the case in Basom and South Alabama.
- Investigate residents' requests/needs for public water due to public health and safety concerns.
- Relocate existing Town Hall, along with other Town facilities, to the hamlet of Alabama.
- Work with Genesee County and the Town of Oakfield to investigate the feasibility and potential funding for a rails-to-trails project on the abandoned Penn Central rail corridor.

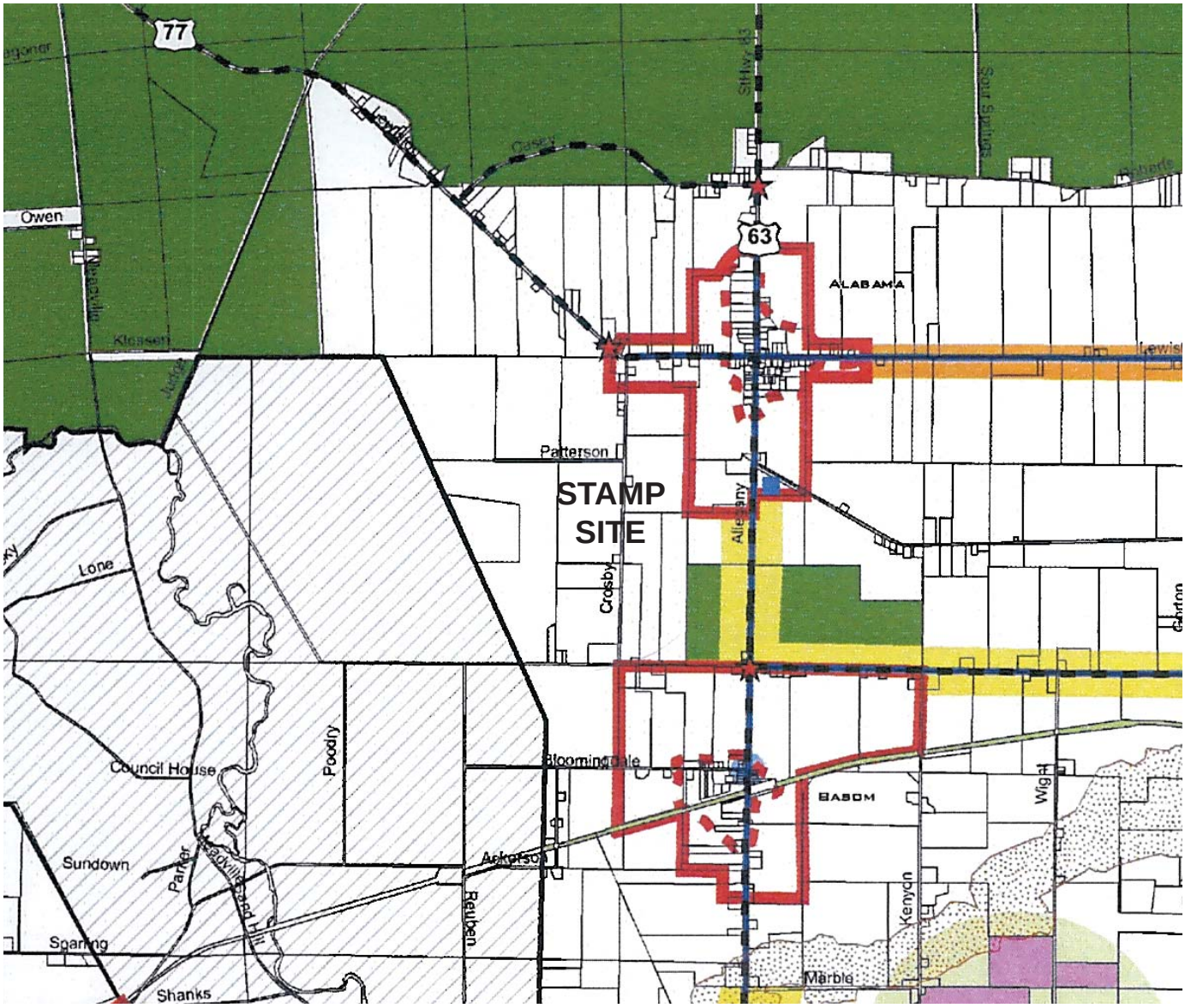
Town of Alabama Water Supply Project

In March 2010, Chatfield Engineers prepared a preliminary engineering report for the Town of Alabama examining the cost and feasibility of providing public water supply and protection to as many as 411 additional homes in the Town of Alabama (*Preliminary Engineering Report for the Town of Alabama Water District #2;* Appendix M). This project, which generally consists of installing approximately 103,720 linear feet of 6-12 inch diameter PVC water mains, valves, fire hydrants, water services, and appurtenances throughout various portions of the Town of Alabama, including the Project Site, would increase the number of residential homes in the Town of Alabama served by public water to 455 or approximately 70% of the Town's households. The estimated capital cost of this water system is $5,208,930. Of this amount, the Town of Alabama is pursuing a United States Department of Agriculture ("USDA") grant of $1,540,000, leaving a net local share of $3,668,930. Unfortunately, availability of USDA grants is currently very limited.

The primary impetus for the water supply expansion in the Town of Alabama is to protect public health and safety. According to the Town's preliminary engineering report, residents in the Town not served by public water have experienced problems with poor water quality, insufficient water quantity, and contamination of existing well supplies by failing septic systems. In addition, residents face high costs to operate and maintain existing well supplies, and most of the Town lacks access to water for fire protection. Providing public water would resolve these important public health and safety needs for a large portion of the Town.

County Farmland Protection Plan

Farming is a major industry in Genesee County and within the Town. In 2008, Genesee County was ranked fourth in New York State for economic activity generated from farming ($179 million). There are approximately 183,983 acres located in designated Agricultural Districts within the County. Within the Town, agriculture is the single most prevalent economic activity, making up almost 50% of the land use therein. Wildlife conservation areas (25.94%) and Native American



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Figure 6-15
Oakfield-Alabama Comprehensive Plan
Vision Map
(Source: Oakfield Alabama Comprehensive Plan)

uses (17.52%) represent the second- and third-largest types of land uses in the Town. According to the Town's Comprehensive Plan, single-family residential use is the fourth-largest use, encompassing a mere 4.19% of the Town's total land use.

The farms in Genesee County are primarily vegetable or dairy farms. From the late 1980's until the Genesee County Farmland Protection Plan was completed in 2001, there was a trend in Genesee County whereby the amount of dairy farming business decreased, while farms dedicated to vegetable production increased. According to Agricultural & Community Development Services, Inc., from 1987 to 1997, vegetable acreage increased by 40% in Genesee County. This is significant because in addition to offering increased profits, vegetable farms spend more money locally than other types of farms. Agricultural & Community Development Services, Inc. found that 44 cents of every dollar spent by the Genesee County vegetable farming sector remains in the County, while 23 cents of every dollar spent by the dairy farmer sector remains in Genesee County. Clearly, farming is currently the most important and prevalent land use in the Town of Alabama.

In 2001, Genesee County issued the County Farmland Protection Plan which was designed to collect data and develop an understanding of public opinion regarding farming. The County Farmland Protection Plan documented interviews with local community members on topics such as taxes, zoning, purchase development rights ("PDRs") and the best way to organize and determine preservation priorities. In general, there is consensus concerning the need for farm land preservation, and the community seems to be familiar with the tools available to achieve it. Nonetheless, competing interests and concerns often make farmland protection strategies difficult to implement. As such, the Comprehensive Plan recommends several farmland protection strategies including agricultural-only zoning and the creation of a subdivision law that have yet to be implemented.

6.7.2 Potential Impacts and Mitigation Measures

The pattern of land use will be altered through the full build-out of the Project. As stated above in Section 6.7.1.1, the Project Site and surrounding areas largely consist of agricultural lands, recreational and open spaces, and a limited amount of large lot residential development. The southeast corner of the Project Site is part of the John White WMA and the Seneca Nation of Indians Reservation borders the Project Site to the west. The Project proposes modern, high-technology manufacturing and ancillary uses utilizing approximately 46% of the 1,337.20-acre Project Site. The other half will be preserved for open space and the protection of environmentally-sensitive resources.

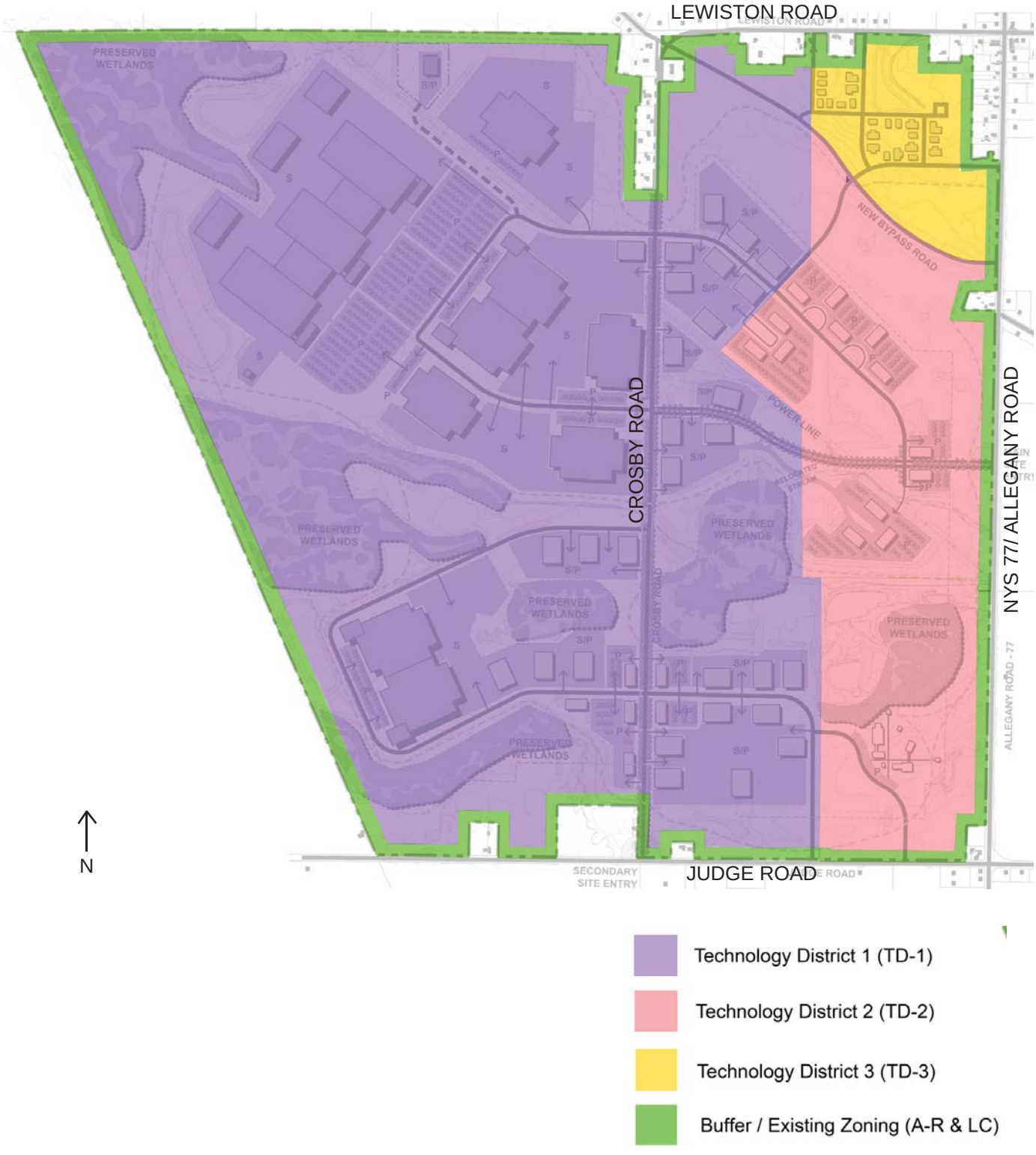
Implementation of the Project will alter the pattern of existing land uses, transforming primarily vacant, sub-prime agricultural lands into a modern, advanced technology manufacturing campus. The existing zoning ordinances do not accommodate the development of the Project. The majority of the Project Site is zoned A-R (Agricultural-Residential), with the southeast corner of the Project Site being part of the John White WMA and zoned as L-C (Land Conservation).

In order to accommodate the Project, the Town of Alabama is considering implementing the following three (3) land use measures to avoid and minimize the potential adverse impacts the Project may have on existing land uses and zoning/planning goals:

- Negotiation of an Incentive Zoning Agreement pursuant to which the Project Sponsor, in exchange for providing certain public amenities to the Town (which will inure to the benefit of the community as a whole), will receive a re-zoning of the Project Site into a newly-created Technology District in order to address the Project's unique needs.
- Amending the Comprehensive Plan to provide for the development of the Project consistent with the other planning goals of the Town and Village, but accepting the vision of the Project's goal of developing a world-class high technology manufacturing center with a focus on renewable energy.
- Considering the adoption of one or more strategies found in the *Farmland Protection Strategies Report for the Town of Alabama, New York* (Appendix K), which was prepared with the goal of describing and consolidating the potential strategies for the Town of Alabama to evaluate and consider in preserving farm land. The *Farmland Protection Strategies Report* (Appendix K) is provided as a mitigation measure for the loss of farm land associated with the development of the Project Site.

Incentive Zoning Agreement

Pursuant to the authority conferred by Article 16 of the Town Law of the State of New York ("Town Law") and, in particular, Section 261-b of the Town Law and Article XI of the Town of Alabama Zoning Law ("Zoning Law"), in exchange for certain public amenities which shall be provided to the Town of Alabama that will inure to the benefit of the community as a whole, the Town of Alabama shall provide certain zoning incentives to the Project Sponsor. A copy of the Incentive Zoning Application made by GCEDC is attached to this DGEIS (Appendix J). Specifically, the Project Sponsor made an application requesting the Town to create a special Technology Zoning District for the Project which will govern all development on the Project Site. Copies of the proposed Zoning Map (Figure 6-16) and proposed Technology Zoning District Regulations are also attached to this DGEIS (Appendix J). The purpose of the newly-created Technology Zoning District is to accommodate the development of the kind of advanced, technology manufacturing to be located at the Project Site.



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Figure 6-16
Proposed Zoning Map

The Technology Zoning District will be divided into three (3) sub-districts:

- Technology District 3 – TD3 will include the northeast corner of the Project Site and, which is in close proximity to the Hamlet of Alabama's commercial/residential corridor, shall be limited to smaller buildings which would accommodate retail and professional office- related uses.
- Technology District 2 – TD2 will allow all uses permitted within TD3 plus light industrial uses, warehousing and distribution, community and cultural facilities, and technology demonstration facilities.
- Technology District 1 – TD1 will allow all uses permitted within TD2 and TD3 plus large-scale advanced technology use, research, development, demonstration and manufacturing.

The proposed Technology District was designed to mitigate off-site impacts. The layout of the proposed Technology District maximizes the benefits of the Project Site layout and incorporates smart design techniques to minimize the potential impacts of the Project. For example, the TD1, TD2, and TD3 zones are situated such that the most intensive uses (i.e., TD1) are located towards the center of the Project Site at the greatest distance from the population centers along Route 77 and the hamlet of Alabama. Along the western edge of the Project Site there are multiple preserved wetland areas that limit the developable areas. These wetland preservation areas buffer much of the western property border placing most of the TD1 uses within the interior portion of the 1,337.20-acre Project Site. TD1 uses are then bordered by less intensive uses (TD2 or TD3) along the eastern edge of the Project Site, which will act to insulate the TD1 uses from residential centers.

The proposed Technology Zoning District also includes a 100-foot wide buffer around the entire perimeter of the 1,337.20-acre Project Site. The 100-foot wide buffer zone, while part of the Project Site, will remain under its current zoning designation to serve as a buffer to all surrounding uses that abut the Project Site. The Project will also provide an additional 300-foot open space buffer along the edges of STAMP TD1 and TD2 Districts that abut Residential and/or Agricultural-Residential Districts to further insulate these properties. The STAMP TD3 District will not be subject to the 300-foot buffer requirement, as the intent of the TD3 area is to integrate into the existing hamlet of Alabama. The overall layout and design of the proposed Technology District with its built-in buffering techniques minimizes the potential impacts of the re-zoning.

In exchange for granting the zoning incentives set forth in the proposed Technology Zoning District, the Project Sponsor (or its affiliate) will provide certain amenities identified as priorities by the citizens of the Town of Alabama. The Project Sponsor's mitigation measures will include potable water, funding and real property for a Town Hall, and assisting in delivering broadband services to the Town.

Providing potable water has been a goal of the Town of Alabama for many years. In fact, the *Preliminary Engineering Report for the Town of Alabama Water District No. 2* (Appendix M) concluded that the Town is in "dire need of a public water supply

system for daily usage and fire protection." Most residences in the Town are supplied water by private wells. Many of these homes experience problems due to insufficient quality of water, poor water quality and contamination of their wells (Appendix M). Pursuant to an Incentive Zoning Agreement, the Project Sponsor will contribute specific funds towards the Town's currently proposed water infrastructure plans. This mitigation measure will enable the Town to provide water to a majority of the Town's households. This mitigation measure will enable the Town to install public infrastructure and provide clean and safe public water to approximately 411 of the Town's households. In addition to providing safe drinking water, the public water system will also address public health concerns related to fire suppression activities.

The Comprehensive Plan identified the relocation and construction of a new town hall in the area of the hamlet of Alabama as a planning goal. The Incentive Zoning Agreement will also provide mitigation to address this need. Pursuant to the Incentive Zoning Agreement, the Project Sponsor will dedicate up to 3 acres at the Project Site to the Town for the construction of a new town hall. In addition to the land donation, the Project Sponsor will provide specific funding opportunities to the Town as a mitigation measure. The funding portion of the mitigation measure will be provided regardless of whether the Town chooses to locate the new town hall at the Project Site or at other Town-owned property.

In addition, many residents feel that the Town is underserved by broadband services. Broadband will be required for development of the Project Site. As a mitigation measure, the Project Sponsor will work with broadband service providers to expand broadband service in the Town. The Project Sponsor will work with broadband provider(s) to encourage the installation of service lines in manner to provide the most coverage to the Town while accessing the Project Site, in conjunction with Phase 1 of the development.

These mitigation measures (provided as amenities under the Incentive Zoning Agreement and identified in response to the needs of the Town and community), coupled with the potential significant financial benefit to the Town in the form of an increased tax base, will greatly outweigh any potential impact the Project may have on the current zoning restrictions applicable to the Project Site.

Amendment of Oakfield-Alabama Comprehensive Plan

The Project is a new opportunity that was not anticipated at the time the Comprehensive Plan was originally prepared and most recently amended in 2005. However, it is appropriate to reconsider aspects of a comprehensive master plan, and make necessary amendments to accommodate unique and unanticipated development projects which have the potential to provide significant employment and financial benefits to a community.

As part of the re-zoning process necessary for the Project, the Town must consider the Project's consistency with the Comprehensive Plan. The Project, as currently proposed, is very consistent with a number of the community's values and visions as articulated in the Comprehensive Plan, including providing for economic

development, protecting environmental resources and features, and providing potable water to appropriate areas of the Town.

In terms of economic development, the Comprehensive Plan states that "[t]he expansion of commercial and industrial growth, and other economic development activities, helps provide jobs and build a stronger tax base." (Comp. Plan p. 5-12). The Comprehensive Plan further states that "[a] majority of the respondents believe that commercial and industrial growth is needed in Alabama." (Comp. Plan. p. 5-2). The Project will undoubtedly assist the Town by increasing needed commercial and industrial growth and development in the Town. The Project will also provide employment opportunities and will improve the community's tax base. The Comprehensive Plan actually recommends targeting locations for these industrial and commercial ventures along Route 77. The Project will conform to the preferences of the Town in this respect, as well, because it will be located along Route 77.

With respect to protecting the Town's environmental features and resources, the Project has been designed in an environmentally-sensitive manner to protect wetlands and stream corridors across the Project Site. Thus, the development of the Project, as envisioned, will ensure long-term protection of hundreds of acres of important environmental features and resources.

The Comprehensive Plan states that "[t]his Plan is an active document and over time, as local situations change, so may the priorities of each community." Taking into consideration this important planning edict, the following formal amendments to the Comprehensive Plan have been formulated as necessary to accommodate development of the Project:

- The Project as described in the DGEIS shall be incorporated into the Comprehensive Plan, and the implementation of the Project in a manner consistent with the FGEIS and the findings statement to be issued as part of this SEQRA process, shall be a stated planning goal of the Town of Alabama.
- The Project Site shall be re-zoned to Technology District pursuant to and consistent with the terms of an Incentive Zoning Agreement executed between the Project Sponsor (and/or its affiliates) and the Town of Alabama.

The Project proposes a world-class high technology manufacturing center, with a focus on renewable energy, which if approved, will serve as an economic development engine central to the economic sustainability and well-being of the western portion of New York State. While the Project is consistent with the Comprehensive Plan in a number of important ways, an opportunity the size and scope of the Project was simply not envisioned at the time the Comprehensive Plan was adopted. Thus, the Town must formally amend its Comprehensive Plan in order for the Project to proceed

Section 8 of the Comprehensive Plan, entitled "Annual Review", sets out the process that is to be used to periodically evaluate and amend the Comprehensive Plan. The Comprehensive Plan suggests that the Planning Board (or other committee

designated by the Town to handle comprehensive planning issues) should annually update the Implementation Plan found in Section 6.0 of the Comprehensive Plan. Annual changes to the Implementation Plan are to be incorporated into the Town's planning files through a formal acceptance by the appropriate legislative board (i.e., the Town Board).

The formal acceptance of an amendment to the Comprehensive Plan is outlined in Section 272-1 of NYS Town Law. Amendments to comprehensive plans are adopted by the process outlined in Section 272-a of NYS Town. The process begins by the preparation of a comprehensive plan amendment. In general, a comprehensive plan amendment is usually prepared by the Town Board and then adopted.

In this matter, the Project Sponsor, in conjunction with this DGEIS process, has prepared the draft of a proposed amendment to the Comprehensive Plan which will be utilized for purposes of completing the SEQRA process for the Project. In the event that the Town Board (as an Involved Agency) issues favorable written findings at the conclusion of this SEQRA process, the Town Board would utilize the proposed Comprehensive Plan amendment as the basis to initiate a separate Comprehensive Plan amendment process. The Town Board would also refer the proposed amendment to the NYS Department of Agriculture for review pursuant to Section 305-a of the NYS Agriculture and Markets Law and to the County Planning Board review pursuant to Section 239-m of NYS General Municipal Law. The Town Board may also refer the amendment to the Planning Board for its review and recommendation.

Following the Planning Board's review, pursuant to Section 272-a(6)(b) of NYS Town Law, the Town Board will hold one or more public hearings to provide for an additional opportunity for citizen input and participation. After the public hearing, the Town Board may adopt the amendment by resolution. The adopted amendment must then be filed with the Town Clerk and the County Planning Board.

Farmland Protection Strategies

This DGEIS acknowledges that as a result of the Project, there will be a loss of agricultural use at the Project Site. As an important tool in mitigating this loss, a *Farmland Protection Strategies Report* ("FPSR"; Appendix K), is provided as a proposed mitigation measure. It is intended to describe and consolidate potential strategies for the Town of Alabama to evaluate and consider in preserving farmland elsewhere in the Town.

The FPSR mitigates the loss of farmland associated with Project, by providing the Town with a comprehensive framework for developing and implementing a town-wide farmland protection strategy. The FPSR is a working document, which provides proposed options for the Town to ensure that notwithstanding some development (such as the Project) the Town will continue to maintain its agricultural roots. Ideally, this FPSR can serve as a foundation for the Town to create a broad-based Farmland Protection Plan for the Town of Alabama that will protect farmland throughout the Town for years to come. Because this FPSR goes so far beyond

mitigation of the Project Site, responsibility for selecting and implementing appropriate farmland protection strategies must necessarily be left to the sound discretion of the Town Board.

The FPSR compiles a list and description of various farmland protection strategies that are available for the Town to implement. The Town has the option to adopt and/or implement as many or as few strategies as desired. In addition, all of the strategies have the potential to be adopted in whole or in part and in connection with any other strategy.

The strategies listed below are the strategies the FPSR suggests the Town may want to consider adopting, where applicable:

- Enhance Zoning Protection For Agricultural Lands: Enhancing zoning protection for agricultural lands would include the creation of agricultural districts; the creation of a subdivision law to manage residential development; increase minimum lot sizes; adjust supplementary yard regulations; and appoint an "Agricultural Member" of the Planning Board.
- Create a Town-Based Purchased Development Rights Program
- Create an Advisory Town Farmland Protection Committee
- Identify/Refine Priority Farmland List
- Promote Agriculture and Focus on Improving Agribusiness
- Assist Farmers in Identifying or Developing Direct Marketing Options
- Provide Public Education on the Value of Farms
- Provide Public Education on Existing Programs/Assistance
- Organize/Provide Farm Generational Planning/Estate Planning
- Organize/Assist in Identifying Farm Worker Pool
- Implement Additional or Strengthen Existing Right-To-Farm Laws

The FSPR is designed to collect and present a wide selection of potential strategies that the Town Board may choose to employ to improve farmland protection (Appendix K).

6.8 Utilities

The Project Site will be served by or have access to all major utility facilities, including water, sewer, electric, natural gas, and telecommunications. While the provision of water and sewer is administered by public authorities, all other utility services are provided by private companies.

Table 6-17 below summarizes Project utility needs at full build-out.

TABLE 6-17
Project Utility Needs at Full Build-Out

Utility Loads at Build-out	Quantity	Unit
Water	3,000,000	GPD
Sewer	3,000,000	GPD
Electric Power	185	MW
Natural Gas	318,600	CFH

6.8.1 Water

The purpose of this section is to discuss the potential water supply needs for the Project Site, the potential impact to existing water supply resources, and what mitigation measures, if any, are needed to mitigate such potential impacts to the maximum extent practicable. A *Water Service Preliminary Report* (Appendix N) has been prepared to evaluate the potential water supply impacts, as well as to evaluate the necessary improvements required to provide adequate water service to the Project Site.

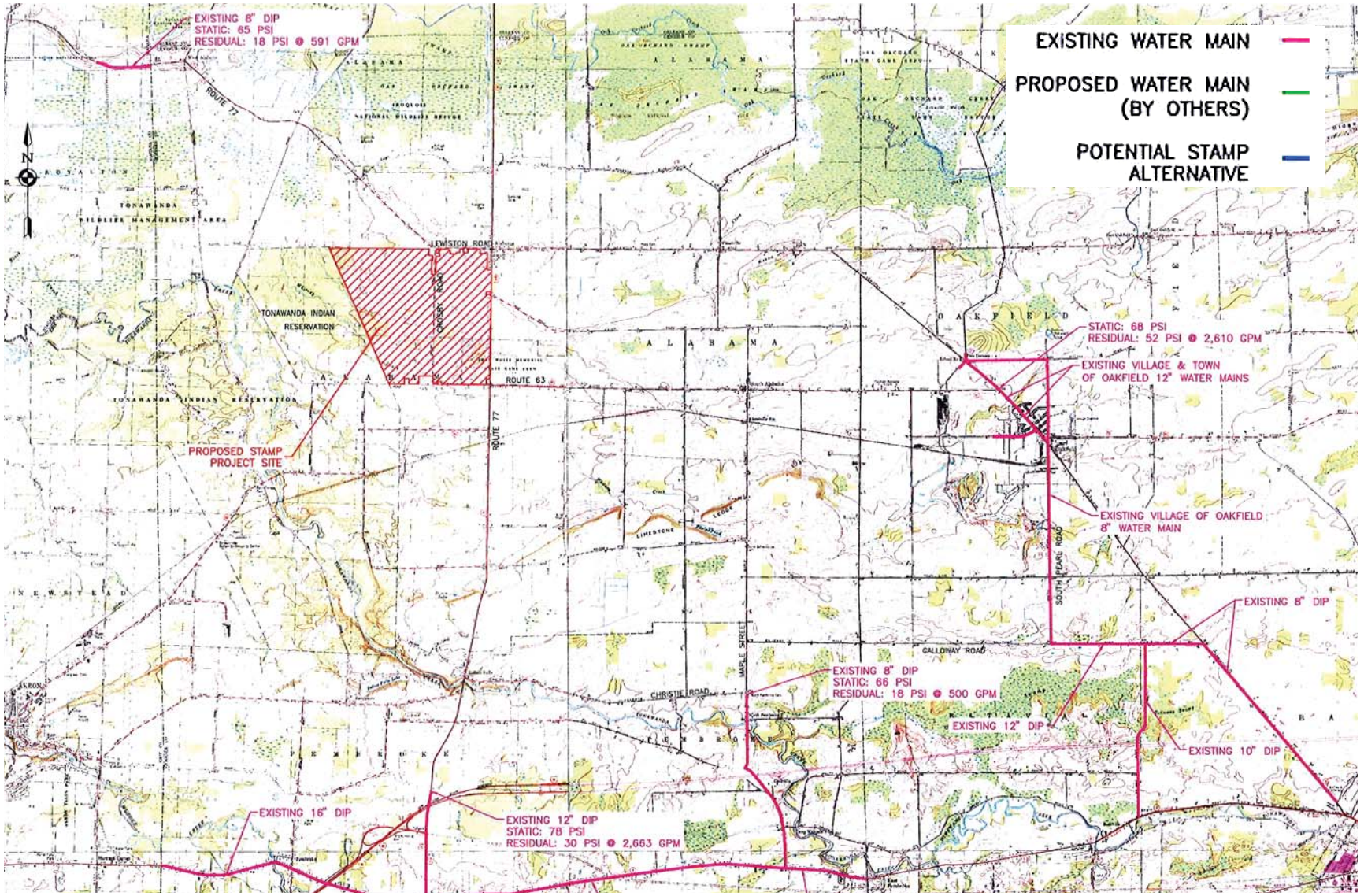
Existing Conditions

The majority of the Project Site consists of agricultural land and a few residential houses that are served by private wells, and are not served by municipal water service or fire protection. The nearest municipal water supply sources are located in the Village of Oakfield, approximately 5.7 miles to the east of the Project Site, and in the Town of Pembroke, approximately 4.7 miles to the south of the Project Site (Figure 6-17).

There are a number of water supply improvement projects scheduled for the areas surrounding the Project Site which will enhance the supply of water irrespective of the Project. The Towns of Alabama and Pembroke, as well as the Village of Oakfield, are planning water main projects in the vicinity of the Project Site.

The Town of Alabama is proposing an 8-inch water main along Route 77, from the intersection of Lewiston Road south the intersection of Route 63; a 12-inch water main along Route 63, from Route 77 to Maple Street; and a 12-inch water main along Route 63, from Maple Street east to the Village of Oakfield water system.

The Village of Oakfield is planning replacement of an existing 8-inch transmission water main with a new 12-inch transmission water main along South Pearl Street, from Route 63 in the Village south to Galloway Road. The Village is also planning the replacement of its existing 150,000 gallon water storage tank with a 400,000 gallon tank near the intersection of Lewiston Road and Route 63. This storage tank is expected to be constructed in 2011.



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Figure 6-17
Existing Water Service Map

The Town of Pembroke is also planning on installing a new 12-inch water main along Route 77 from the NYS Thruway north to Indian Falls Road and along Indian Falls Road from Route 77 to Maple Street.

Potential Impacts and Mitigation Measures

The *Water Service Preliminary Report* (Appendix N) evaluates the necessary improvements required to supply the necessary water service to the Project Site. The analysis considers two construction phases- an initial construction phase (Phase 1) and a full build-out scenario (Full Build-out) as summarized in Table 6-18.

TABLE 6-18
Project Water Demands

Construction Phase	Assumed Building Development	Assumed Employee $	Water Demand (Gallons per Day)	Design Demand (Gallons per Day)
Phase 1	1,000,000	1,280	1,000,000	1,000,000
Full Build-out	4,000,000	9,330	2,990,000	3,000,000

There are a wide range of potential flow demands at the Project Site over an extended period of time. Full build-out of the Project Site may take ten (10) to twenty-five (25) years. The first phase of construction may take place in the next few years. For these reasons, a phased approach is required to evaluate the potential water service alternatives designed to mitigate impacts to existing water supplies.

The availability of water resources and large diameter water mains is very limited in the vicinity of the Project Site. Therefore, providing the high water demand necessary for the Project Site requires development of a network with multiple water sources, rather than one or two simple high volume connections.

Several alternatives were considered to provide a water service system that would meet the needs of the Project, while minimizing the impact to existing water supply systems. The alternatives consist of providing a supply system including new water mains and connections to existing water mains in the surrounding area, as well as on-site storage tanks.

Table 6-19 summarizes the water supply alternatives considered.

TABLE 6-19
Water System Alternatives

Alternative	Alternative Description	Total Capital Cost	Initial Water Supply (gpd)	Water Storage (Gallons)
1	Route 77 Water Main	$5,330,000	720,000	0
2	Water Storage	$8,100,000	0	2,000,000
2A	Water Storage Tank	$7,800,000	0	2,000,000

Alternative	Alternative Description	Total Capital Cost	Initial Water Supply (gpd)	Water Storage (Gallons)
3	Route 63 and Pearl Road Water	$3,817,000	360,000	0
4	Maple Street and Galloway Road Water	$3,605,000	360,000	0
5	Route 77 Water Main	$2,200,000	100,000	0
6	Medina	$5,629,000	360,000	0
7	Lyndonville WTF Expansion	$56,875,000	3,000,000	0

From the water systems analysis outlined above in Table 6-19, it appears that a phased network approach will be required to satisfy the water supply needs of the Project Site, while maintaining the current levels of water service to the various communities. The most practical sources of supply appear to be located to the south and west of the Project Site in the Town of Pembroke and Village of Oakfield, and through Genesee County.

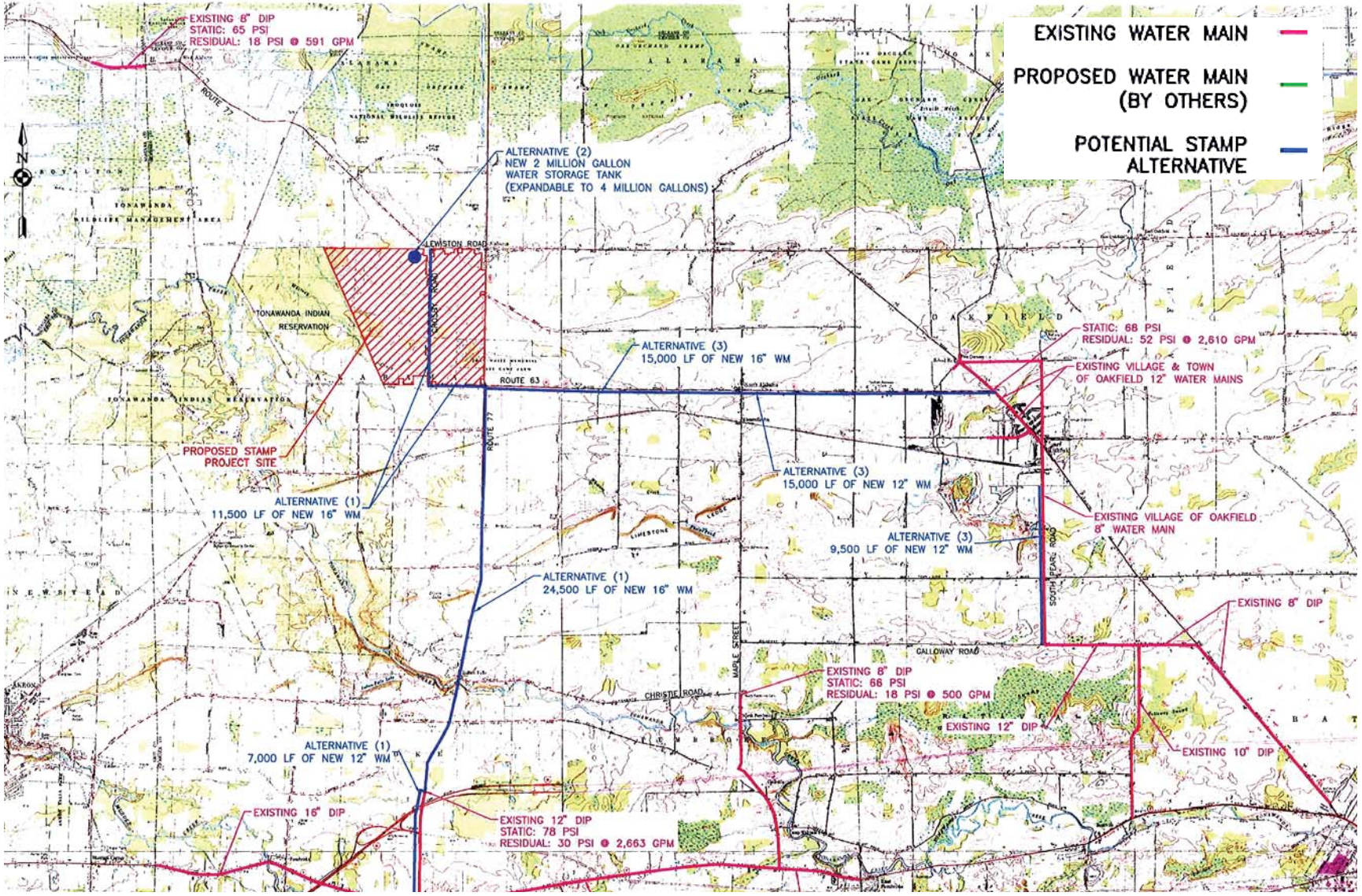
Phase 1 Water Project

Alternative 1 (Route 77 Water Main, Pembroke Connection) and Alternative 3 (Route 63 and South Pearl Road Water Main) will be required to meet the demand of 1.0 GPD required for Phase 1 development. Alternative 2 (Water Storage Tank) would provide the required on-site storage for fire flow (fire protection) and peak demands (Figure 6-18).

The estimated total capital costs associated with Phase 1 are shown in Table 6-20.

TABLE 6-20
Water System Capital Costs - Phase 1

Alternative	Alternative Description	Total Capital Cost
1	Route 77 Water Main, Pembroke Connection	$5,330,000
2	Water Storage Tank	$8,100,000
3	Route 63 and South Pearl	$3,817,00
Total Capital Cost		**$17,247,000**



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Figure 6-18
Water System - Phase 1

Phase 1A Project

The Town of Alabama and Village of Oakfield are planning water projects that are similar to Alternative 3 (as described above in Tables 6-19 & 6-20). If these municipal projects are completed in advance of the Project Site, and the proposed water main materials and sizes were upgraded, the total capital costs associated with Phase 1 of Project Site development could be reduced to $14,484,000 as summarized below in Table 6-21.

TABLE 6-21
Water System Capital Costs - Phase 1A

Alternative	Alternative Description	Total Capital Cost
1	Route 77 Water Main, Pembroke Connection	$5,330,000
2	Water Storage Tank	$8,100,000
3A	Route 63 and South Pearl	$518,000
Total Capital Cost		**$13,948,000**

Full Build-Out of Project

In addition to the required alternatives constructed for Phase 1 Project development, additional improvements will be required in order to service the Full Build-out of the Project Site. Alternative 4 (Maple Street and Galloway Road Water Main) would be required for the Full Build- out water system (Figure 6-19).

To provide the full 3.0 million GPD to the Project Site, significant upgrades will also be required in the Genesee County, Monroe County Water Authority, and Erie County water systems. More extensive studies will be required to determine specific upgrades that would be needed. For the purpose of this report, order of magnitude costs have been estimated for these upgrades.

The estimated total capital costs associated with Full Build-out Expansion are shown in Table 6-22.

TABLE 6-22
Water System – Full Build-out Expansion Costs

Alternative	Alternative Description	Total Capital Cost
4	Maple Street and Galloway	$3,605,000
2A	Water Storage Tank	$7,800,000
Upgrades of Other Systems	Genesee County, Monroe County Water Authority Systems	$10,000,000
Total Capital Cost		**$21,405,000**

To arrive at the Full Build-out total capital costs, the Phase 1 costs must be added to the Full Build-out Expansion Costs. The Full Build-out total capital costs are summarized in Table 6-23.

TABLE 6-23
Water System – Full Build-out Capital Costs

	Phase 1	Phase 1A
Phase 1	$17,247,000	$13,948,000
Full Build-out Expansion	$21,405,000	$21,405,000
Full Build-out Total Capital	**$38,652,000**	**$35,353,000**

6.8.2 Wastewater

The purpose of this section is to discuss the potential wastewater treatment and sewer needs for the Project Site, the potential impact to existing wastewater services, and what mitigation measures, if any, are needed to mitigate such potential impacts to the maximum extent practicable. A more detailed analysis is set forth in the *Sewer Service & Wastewater Treatment Facility Preliminary Report* (Appendix O).

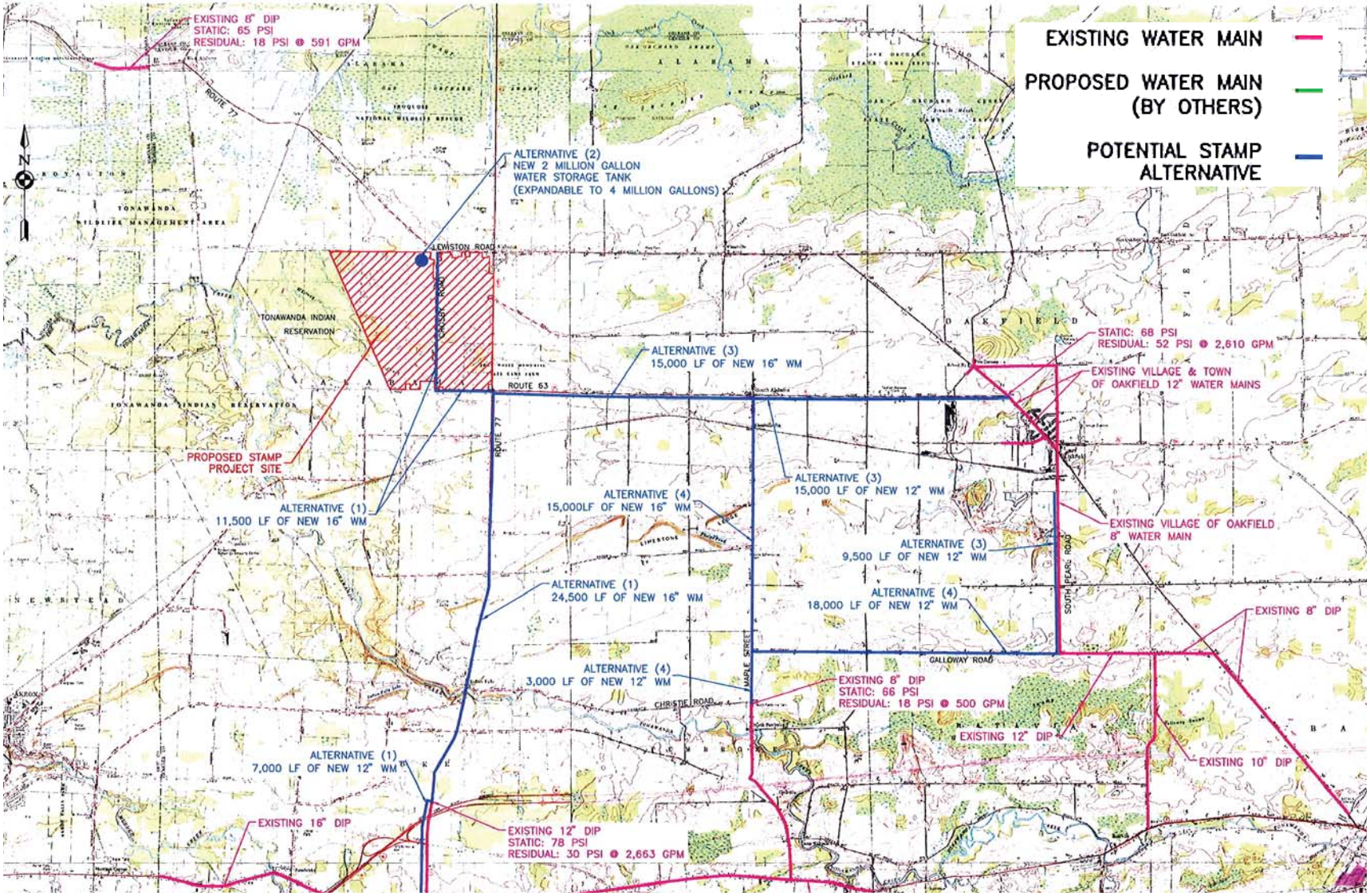
Existing Conditions

The majority of the Project Site consists of agricultural land and a few residential houses that do not have access to municipal sanitary sewer service. The nearest municipal wastewater treatment facilities (WWTF) are located in the Villages of Oakfield and Corfu.

The Village of Corfu WWTF is located in the northwestern quadrant of the Village of Corfu, approximately 9 miles south of the Project Site, along Route 77. The Corfu WWTF has a permitted treatment capacity of 135,000 GPD, and discharges to Murder Creek. This facility currently operates at approximately 65,000 GPD. There is approximately 70,000 GPD in excess of permitted capacity. However, upgrades at the WWTF are required to restore its original operating capacity to 135,000 GPD, and allow the WWTF to accept flows beyond the 65,000 GPD generated by Village users. For purposes of completing the impact assessment in this GEIS, it is assumed that the Corfu WWTF would not be a feasible or economical alternative for Project sewer service due to its distance from the Project Site and the upgrades required at the WWTF. There is also a potential that the Town of Pembroke will use this additional capacity in the near future.

The Village of Oakfield WWTF is located in the northeastern quadrant of the Village of Oakfield, approximately 6.5 miles east of the STAMP Project site. The Oakfield WWTF has a permitted treatment capacity of 500,000 GPD and discharges by a single outfall to Dry Brook, a tributary of Oak Orchard Creek. The WWTF currently operates at approximately 156,000 GPD. There is approximately 344,000 GPD of excess permitted capacity.

There are existing businesses to the south of the Project Site utilizing relatively small individual treatment systems, including the Flying J. Travel Plaza, the TA Travel center, and the Pembroke Junior and Senior High School. As part of the Buffalo East Technology Park analysis, studies have been completed that would propose an expansion of the Village of Corfu WWTF or a new WWTF located along NYS Route



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Figure 6-19
Water System - Full Build-out

5, just east of the I-90 overpass. This facility would discharge to Murder Creek, similar to the Corfu WWTF.

Potential Impacts and Mitigation Measures

The *Sewer Service and Wastewater Treatment Facility Preliminary Report* (Appendix O) has been prepared to evaluate the necessary improvements required to provide sanitary sewer service to the Project Site. STAMP will generate a combination of conventional domestic wastewater and wastewater from manufacturing process and process support systems.

All of the technology manufacturing industries to be located at the Project Site have the potential to generate wastewater from manufacturing process and process support systems. Wastewater generated will be collected prior to treatment and will be treated to meet the applicable NYSDEC, NYSDOH, County, and local requirements. Federal categorical pretreatment standards may also apply to certain dischargers. For example, PV or semiconductor manufacturing can involve wastewater discharges subject to 40 CFR Part 469 – Electrical and Electronic Components Point Source Category. STAMP industries will discharge to a POTW and Pretreatment Standards for New Sources (PSNS) would typically apply. These standards include limits on pH and total toxic organics. Wastewater generated by these industries requires relatively conventional and commercially proven treatment technologies (Appendix H).

The *Sewer Service and Wastewater Treatment Facility Preliminary Report* (Appendix O) evaluates several alternatives to provide sanitary service to the Project. Upon development of conceptual sewer layouts and preliminary budgetary cost estimates, it became apparent that a few alternatives emerged as most practical and cost effective.

The sewer service analysis considers two (2) construction phases: an initial construction phase (Phase 1) and a full build-out scenario (Full Build-out). The sewer demand for Phase 1 is estimated to be 1,000,000 GPD. The initial construction of the Project Site would include a WWTF and infrastructure to convey and treat this volume of flow. For the Full Build-out scenario, a sewer design demand of 3,000,000 GPD was evaluated. This phase will include upgrades to the WWTF and infrastructure previously constructed under the Phase 1 portion of the Project, as well as new infrastructure to meet the anticipated demand.

Several alternatives were considered to provide a conveyance and wastewater treatment system that would meet the needs of the Project. The alternatives consist of providing conveyance systems that utilize combinations of gravity sewers, pump stations, and force mains. Each alternative was evaluated using the two design capacities and incremental capacity upgrades over time.

Table 6-24 summarizes the alternatives and capital costs.

TABLE 6-24
Sewer Service – Evaluation of Alternatives

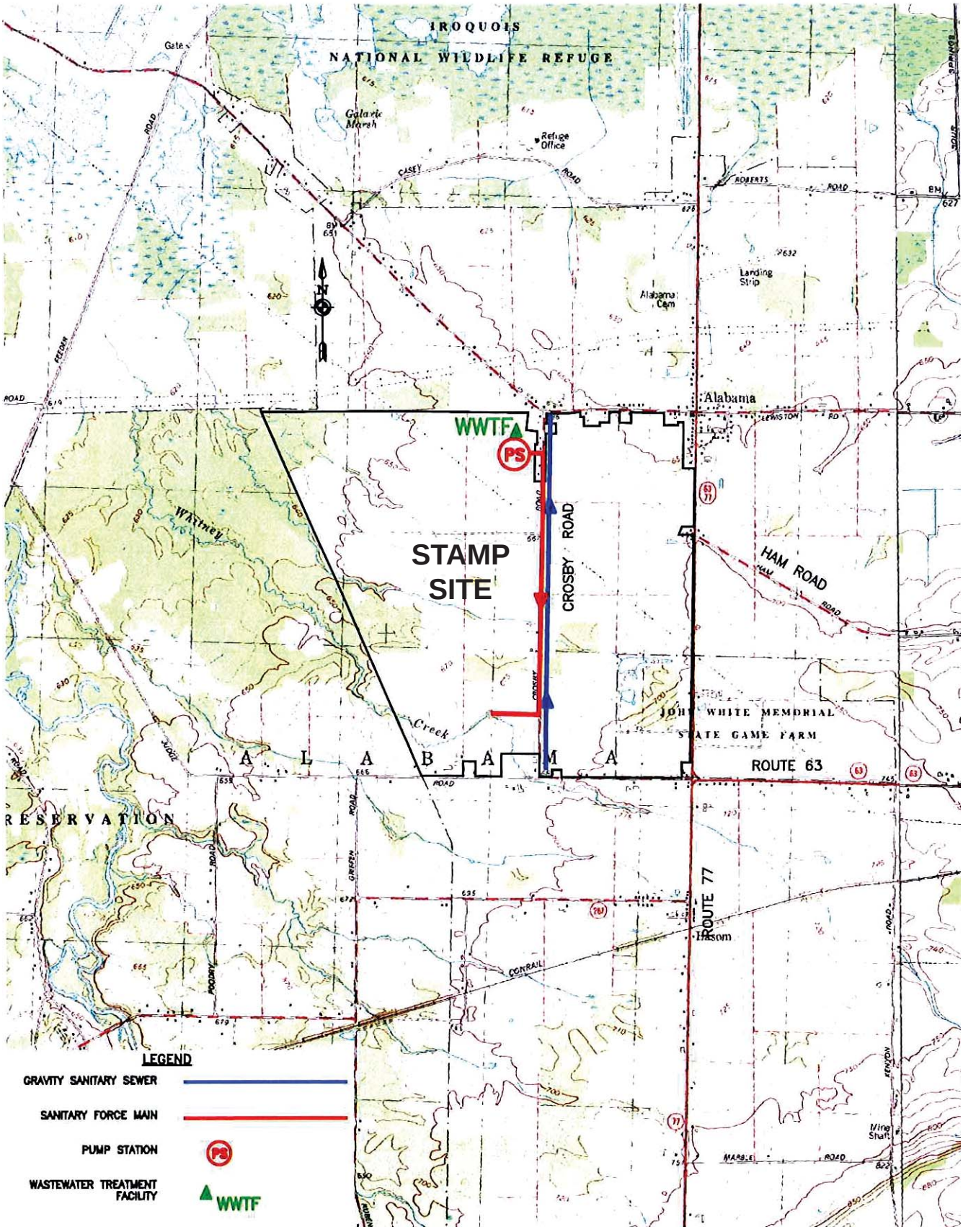
Alternative	Alternative Description	1.0 MGD	Expansion to 3.0 MGD	Total Capital Costs
1	On-Site WWTF, Indian Falls Discharge	$20,993,000	$19,614,000	$40,607,000
2	On-Site WWTF, Tonawanda Discharge	$20,230,000	$19,614,000	$39,844,000
3	Indian Falls WWTF	$20,993,000	$19,614,000	$40,607,000
4	Village of Oakfield Existing WWTF	$24,099,000	$19,614,000	$43,713,000
5	On-Site WWTF, Oak Orchard Creek Discharge	$18,130,000	$19,614,000	$37,744,000
6	On-Site WWTF Whitney Creek Discharge	$15,873,000	$19,614,000	$35,487,000

From the analysis compiled in Table 6-24 above, it appears that locating a WWTF on the Project Site would be the most economical and feasible approach for the following reasons:

- It eliminates the need for long sewer force mains filled with untreated sewage.
- It allows flexibility to upgrade the WWTF easily since it is incorporated into the Preferred Alternative.
- It has the lowest estimated capital cost.
- It eliminates the need for off-site land acquisition.
- It allows for feasible permitting for the WWTF.

Of those alternatives that proposed a WWTF within the Project site, Alternative 6 (On-Site WWTF with Whitney Creek Discharge) is the preferred sewer service alternative. This alternative would provide for a WWTF to be located on-site; has the lowest capital cost; the shortest discharge route; and is the preferred sewer service alternative with respect to permitting (Figure 6-20).

Any discharge from a WWTF would require a State Pollutant Discharge Elimination System (SPDES) permit from NYSDEC. A SPDES permit establishes stringent performance standards and operating conditions that are designed to protect the State's waters. The permit may incorporate water quality standards, sampling, analysis, and reporting to NYSDEC. Once a permit is issued, the owner or operator must comply with its specific conditions which may include requirements regarding chemical properties, temperature, and other biological properties, and the owner/operator will be monitored to assure compliance.



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Figure 6-20
Sewer Service - Preferred Alternative

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Sewer service for the Project will require permitting from NYSDEC and NYSDOH, as well as maybe the County and the Town of Alabama. Based on preliminary conversations with NYSDEC, a discharge to Whitney Creek would be feasible based on volume and constituent concentration levels for an Intermittent Stream. An Intermittent Stream classification, compared to a larger stream classification, requires more stringent controls. Typical constituent levels for an Intermittent Stream are as follows:

- 5-15 mg/L BOD level
- 10-20 mg/L Total Suspended Solids
- pH – 6.5 to 8.5
- Ammonia Limit – 1.2 – 8 mg/L
- Phosphorous Removal – 1.0 mg/L

The new WWTF would be required to meet these levels, as well as other restrictions as required by the NYSDEC. Once a permit is issued, the discharge point would be continuously monitored for compliance. Downstream impacts would also need to be considered and would be part of the permitting process.

6.8.3 Electric Power

The anticipated electrical loading requirement for the Project is 185 megawatts (MW). National Grid has completed a "Review of System Impact of Load Connection" for the Project Site which evaluated the ability of National Grid's Genesee regional power structure to provide this 185 MW electrical load on a 5-year horizon for the Project.

National Grid considers the findings and analysis contained in its report to be confidential information that, for both proprietary and security reasons, cannot be disclosed publicly. Nevertheless, in sum, several load levels for the Project Site were considered by National Grid. First, it was concluded that a 9 MW load without reactive compensation or a 30 MW load with reactive compensation could be supplied at the Project Site prior to thermal and voltage problems developing for the existing system. The review included all benefits created by several National Grid plans to reinforce the area to address existing outage concerns.

Any option pursued for the Project Site will be subject to extensive reviews by National Grid, Rochester Gas and Electric (RG&E), the New York Power Authority (NYPA), and the New York Independent System Operator. Upon analyzing the various options, National Grid has identified an interconnection alternative to be feasible that will not result in a potential significant adverse impact to existing electrical resources.

6.8.4 Natural Gas

The Project at full build-out is anticipated to consume natural gas for production purposes. Natural gas will be needed for the following facility systems:

- Boilers which provide both process and building heat.
- Hot water for sanitation and showers.
- Point of Use (POU) air pollution control systems.
- VOC abatement systems.

The estimated annual consumption of natural gas for the combined facilities is 2700 MMCF according to the *Gas Service Analysis* (Appendix P).

The feasibility of natural gas supply for the Project is a function of a number of variables. The timing and need for gas service will depend on the Project's schedule, related gas supply requirements, the feasibility of obtaining alternate rights-of-way (if necessary), and permits as the Project Site is developed over time.

The proposed gas distribution plan set forth in the *Gas Service Analysis* (Appendix P) contains the main components which appear necessary to satisfy the Project's ultimate service requirements in consideration of the operations parameters for the existing gas distribution system. The nearest natural gas distribution line is located at a distance of approximately 5 miles from the Project Site, near the intersection of Judge Road and Lewiston Road on the northwest side of the Village of Oakfield. Once the main gas main is extended to the boundary of the Project Site, the available gas pressure will be in the range of 30-80 PSIG. Based on the projected needs of the Project, this pressure will ensure an ample supply of natural gas for future uses without presenting a potential significant adverse impact to the existing natural gas resources.

6.8.5 Telecommunications

The Genesee County website indicates existing fiber optic lines running close to the STAMP site in two locations. One line is located at the Lewiston Road/Route 77/63 intersection near the northeast corner of the Project Site, and the other is located at the Judge Road/Route 77/63 intersection near the southeast corner of the Project Site.

As indicated in the *Telecommunications Correspondence* (Appendix Q), Verizon has indicated an interest in providing telecommunications service to the Project Site.

6.8.6 Renewable Energy

The types of technology companies being targeted for STAMP are in the business of producing products that enable the generation of renewable energy and are increasingly utilizing renewable energy products at their own facilities. The typical creative-class employee in the technology workforce expects employers to be demonstrably supportive of green power initiatives. In addition, onsite generation of energy can be a cost-beneficial solution to rising grid-based energy costs. Lastly, on-site energy generation will enable a facility to achieve LEED Energy & Atmosphere Credit 2, On-site Renewable Energy.

Companies seeking to locate in STAMP will be encouraged to consider onsite energy generation. Potential technologies to investigate for onsite renewable energy generation at STAMP are:

- Photovoltaic systems.
- Solar thermal systems.
- Bio-fuel based electrical systems.
- Geothermal heating systems.
- Geothermal electrical systems.
- Low-impact hydro electric power systems.

In addition, the Project Site lies within the Niagara Hydro Power Zone, which has the potential to provide a low-cost renewable source of energy for the Project. However, this is an off-site source of renewable energy and, though it has the potential to significantly lower the cost of power to facilities located at STAMP, it would not qualify companies locating at STAMP for LEED Energy & Atmosphere Credit 2, On-site Renewable Energy.

Notwithstanding, the Project will not result in a potential adverse impact to the existing renewable energy source of the Niagara Hydro Power Zone.

6.9 Community Facilities

The section addresses the existing conditions, potential impacts, and proposed mitigation measures, if any, associated with those community facilities that may service the Project and Project Site. This section will focus on the Project's potential impacts on emergency services (i.e., ambulatory, police, and fire); solid and hazardous waste management; highway maintenance, educational facilities, court services; and public lands and resources.

6.9.1 Existing Conditions

Emergency Services

Emergency services include police, fire, and ambulance (EMS). Select representatives of the local emergency response agencies were contacted in order to obtain information regarding the existing services and capabilities of the agencies.

The Genesee County Emergency Management Services Office is responsible for the overall coordination of seventeen volunteer fire departments across the County and for emergency medical services within the County. The office also serves as the liason between local governments and NYS and Federal agencies during natural disasters and/or man-made emergencies. Additionally, the office provides numerous fire/EMS training programs for emergency responders that are required by the NYS Office of Fire Prevention and Control and the NYS Department of Health.

Genesee County provides coordination of emergency responses services through a 911 Dispatch Center located in the County Sheriff's office. The Center provides centralized public safety communications to participating police, fire and EMS services within Genesee County.

Police

Police services for the Project Site are currently provided by a combination of the Genesee County Sheriff and New York State Police, depending on the location of the call, the nature of the call, and the proximity of vehicles from the agencies at the time of the call. The Town of Alabama does not have its own police force.

Emergency police response is coordinated through the county-wide 911 system, and an emergency call typically results in a response from the closest vehicle with backup vehicles dispatched as necessary.

The Genesee County Sheriff's office is located at 165 Park Road in Batavia, and the NYS Police Troop A Headquarters is located at 4525 West Saile Drive in Batavia. Police coverage is currently funded through a combination of State and county budgets.

Fire

Fire services for the project site are currently provided by the Town of Alabama Fire Company Inc. (Town Fire Company). In addition, the Town Fire Company has Mutual Aid Agreements with several other agencies, including the Akron Fire Company and the Medina Fire Company.

The Town Fire Company has two stations- Fire Station 1 is located at 2230 Judge Road approximately 3 miles east of the southeast corner of the Project site, and Fire Station 2 is located at 2427 Lewiston Road, approximately 3.5 miles east of the northeast corner of the Project Site.

The Town Fire Company responds to approximately 300 fire/EMS incidents a year. Annual budget for 2009-10 was $136,000, with approximately $76,000 provided through tax receipts and approximately $60,000 provided through fund raisers.

The Town Fire Company is a 100% volunteer company with total active membership of 53 persons. Of these, 23 are interior Firefighters, 25 are exterior Firefighters and 5 are restricted Firefighters. Training/certifications have been completed as follows: Introduction to Fire Officer – 14; Fire Officer – 3; Hazardous Materials Operations – 11; and Hazardous Materials Technician – 6.

Fire apparatus assigned to Station 1 includes one Engine and one Tanker. Fire apparatus assigned to Station 2 includes one Engine, one Rescue Vehicle and one Reserve Tanker.

Ambulance

Emergency medical services (EMS) are currently provided for the Project area by Mercy Flight Western New York, an independent, not-for-profit provider of emergency air medical transport and supporting services.

Established in 1981, Mercy Flight has flown more than 19,000 patient missions over the last 29 years. Mercy Flight serves 10 counties in Western New York and Northwest Pennsylvania and operates out of 3 bases of operation in Batavia, Buffalo and Olean.

The Batavia base is located at 4781 E Saile Drive in Batavia. Batavia-based Mercy Flight personnel are formed into three Advanced Life Support (ALS) teams. Personnel have received training/certification as follows: ALS – 4 and Basic Life Support (BLS) – 3.

Hospitals and medical facilities available to serve Project EMS needs include UMMC Community Hospital in Batavia, Medina Community Hospital in Medina, Erie County Medical Center, Level 1 Trauma in Buffalo and Strong Memorial Hospital, Level 1 Trauma in Rochester.

The Town of Alabama Fire Company Inc. (Town Fire Company) works with Mercy Flight when warranted. Town Fire Company personnel have received training or have qualified in the following: Medical Director – 1 assigned, Emergency Medical Technician Intermediate – 7, Emergency Medical Technician – 11, CPR/AED – 17.

In addition, the Town Fire Company operates 1 Basic Life Support (BLS) vehicle.

Waste Management

Solid and hazardous waste management services are provided by several private contractors in Genesee County and the region. Several of these contractors are 6 N.Y.C.R.R. Part 360 certified. In addition, the GLOW Region Solid Waste Management Committee was formed in 1987 to allow a multi-county area to work together cooperatively to develop strategies for the management of solid waste. Today, in addition to solid waste management, the GLOW organization facilitates recycling programs and household hazardous waste collection and management.

Highway Maintenance

As described in the *Traffic Impact Study* (Appendix I), roadway maintenance in the vicinity of the Project Site is provided by a combination of NYSDOT and Genesee County as follows:

- NY Route 77: NYSDOT
- NY Route 77/63 Overlap: NYSDOT
- Judge Road west of NYS Route 77: Town of Alabama
- Judge Road east of NYS Route 77: NYSDOT
- Crosby Road: Town of Alabama

Educational Facilities

The Project Site is located in its entirety in the Oakfield-Alabama Central School District which offers a K-12 education in two district facilities. One small private school, the Calvary Baptist School, is also located within the district.

There are no K-12 public or private school buildings within the Project Site's study area. The nearest schools to the project site are the Oakfield-Alabama Elementary School and the Oakfield-Alabama Middle-High School, both located approximately 6 miles east of the Project Site.

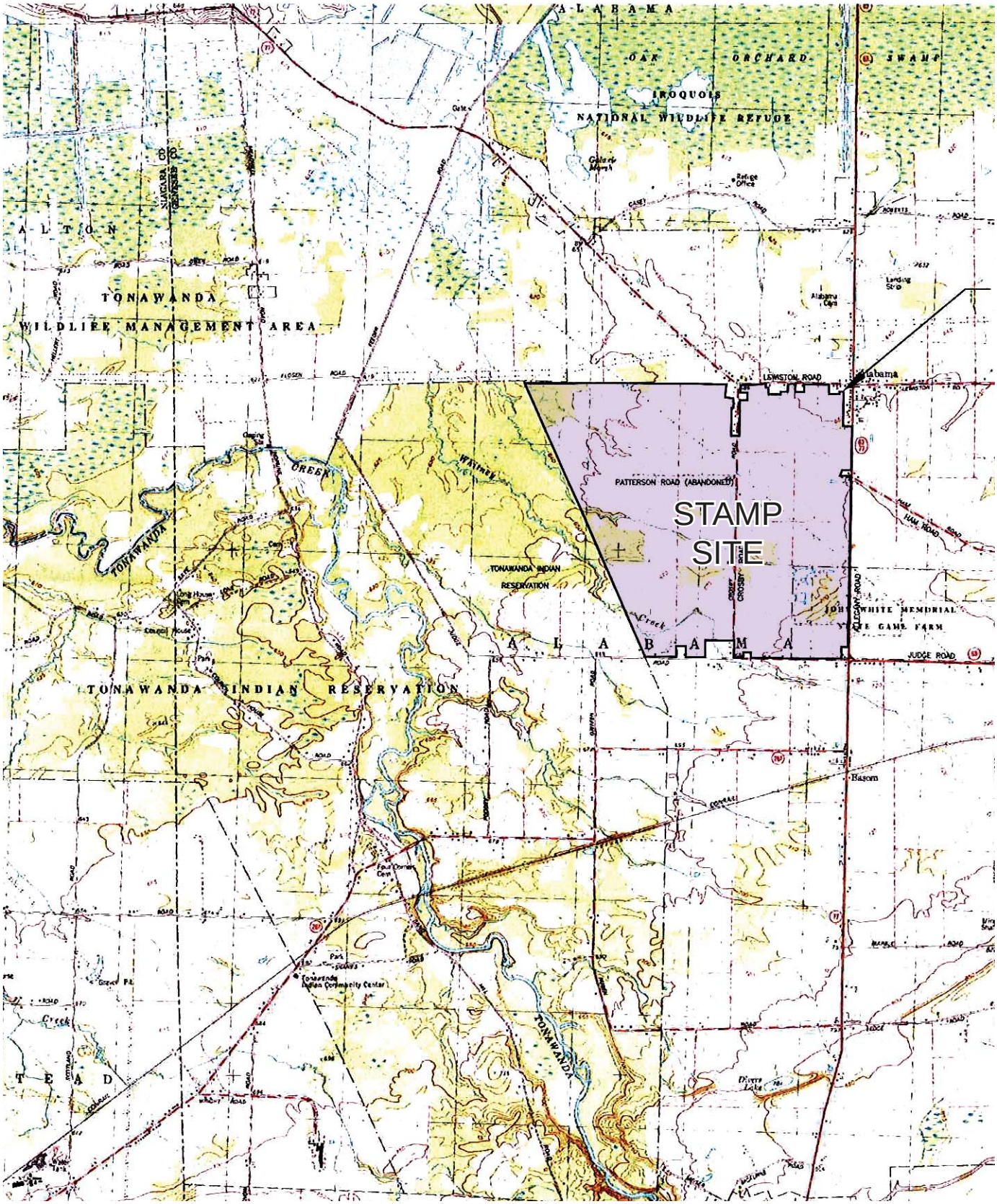
The Project Site is within manageable driving distances to a significant number of public school districts located in Genesee, southern Orleans, eastern Erie and the western end of Monroe counties.

Genesee Community College, located in the Town of Batavia, is the closest post secondary institution to the Project Site. In addition, this region of New York State has an abundance of educational institutions providing undergraduate, graduate, professional, educational and other job training programs. The project area is served by both colleges and universities in metro Buffalo and Rochester, including: Buffalo State College, Canisius College, D'Youville College, Daemon College, Empire State College, Erie Community College, Medaille College, Monroe Community College, Nazareth College, Niagara County Community College, Niagara University, Roberts Wesleyan College, Rochester Institute of Technology, St. John Fisher College, SUNY at Brockport, SUNY at Geneseo, Trocaire College, University at Buffalo, University of Rochester and Villa Maria College.

Public Lands and Recreation

The Project Site includes a 93.8-acre portion of the John White WMA. This parcel, along with an additional 246 acres on the east side of Route 77, was acquired by the NYSDEC in 1945 with an appropriation from the Conservation Fund and established as the John White Memorial Game Farm. The property was used by the State for the production of ring-necked pheasants which were stocked throughout New York State. Pheasant production was discontinued in 1999 and the property became a state wildlife management area in 2000 with a primary focus on providing grassland habitat for grassland birds and other wildlife. The primary grassland habitat is located on the 246-acre parcel on the east side of Route 77 and outside the Project Site. This parcel is actively managed to produce high quality grassland bird habitat and a subject of ongoing habitat management research by graduate students from the State University of New York at Brockport. The 93.8-acre parcel that is within the Project Site includes hayfields, forests and wetlands. This area is currently used to provide hay under an agricultural agreement with a local farmer, wildlife habitat and public recreation opportunities including dog training and dog trials, hiking, wildlife observation, and universally accessible hunting opportunities.

The northwest corner of the Project Site borders the southeast corner of the Tonawanda WMA. This shared border is approximately 1,235 feet long and contains forested habitat on the Project Site side, as well as open grasslands associated with a power line right-of-way on the Tonawanda WMA side. The western end of this common border is the location where the Project Site, Tonawanda WMA, and Seneca Nation lands meet (Figure 6-21). The Tonawanda WMA is part of what is known as the Tonawanda, Iroquois, Oak Orchard Complex (TIO). The TIO Complex contains approximately 19,000 acres of public wetland and associated upland habitat managed by the USFWS and NYSDEC for wildlife and



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Figure 6-21
Public Lands Location Map

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outdoor recreation opportunities. Dominant habitat types include emergent marsh, forested wetland, cool and warm season grasslands, open water, and upland forest. The complex serves as a staging and migration area for over 250,000 waterfowl each year, and is an important migration area for shorebirds and breeding area for rails, bitterns, and other marsh birds. Abundant bottomland hardwoods and managed grasslands attract a variety of important species that nest in the TIO, including bald eagle, northern harrier, sedge wren, cerulean warbler, Henslow's, savannah, vesper and grasshopper sparrow, and eastern meadowlark. The majority of the Project Site's drainage, including Whitney Creek, eventually flows into the Tonawanda WMA, feeding several wetland impoundments managed for wetland wildlife.

Court Services

The Town of Alabama currently maintains one local Town Court located at the Town of Alabama Town Hall. Two (2) local judges preside at the Town Court and regularly hear cases involving code enforcement proceedings, local criminal prosecutions, and Vehicular and Traffic Law matters.

6.9.2 Potential Impacts and Proposed Mitigation Measures

Emergency Services

Police

Additional resources required to provide police services at the Project Site are expected to be insignificant. Periodic patrols of the Project Site may be required, and these efforts will need to be coordinated between the Genesee County Sheriff's office and the New York State Police.

In addition, the larger entities locating within the Project Site will typically provide internal security personnel, so routine police patrols will be able to focus on the Project Site's public access areas, such as roads and recreation areas. The internal security system for the Project Site will be coordinated with the efforts of the Genesee County Sheriff's Office and the New York State Police in order to avoid a duplicative usage of resources, as well as to provide a more comprehensive approach to emergency services.

Fire and Ambulance

As described more fully in Section 6.1.2, Socioeconomics, two separate benchmarking trips to existing technology manufacturing communities were conducted for Town and County officials in March and April of 2010, the first to Silicon Forest in Hillsboro, Oregon and the second to the Luther Forest Technology Campus in Malta, New York. On both trips, Town fire officials attended meetings with local fire officials to discuss fire/EMS impacts to their communities from technology manufacturing facilities. Key conclusions from these discussions include:

- Technology manufacturing companies typically organize and maintain their own internal fire response capability. These internal systems will be fully

coordinated with the emergency service providers for the Town of Alabama, Genesee County, and the State of New York.

- Because of the operational need to minimize potential fire risks to the greatest extent possible, the potential impacts to public fire agencies arising from technology manufacturing facilities are insignificant.
- The types of incidents requiring a response from fire protection agencies will be similar to those currently being managed by local response agencies.
- Typical alarms are expected to include motor vehicle accidents, minor alarm activation and assistance with EMS responses. These response services are currently provided by local responders on a regular basis throughout the Project area and would not require significant additional training or resources.
- Effective responses to the Project Site will necessitate that the technology manufacturing facilities themselves provide training to local responders so that site-specific and chemical-specific knowledge is conveyed to the responders. This kind of coordination and training is routinely provided by technology manufacturing companies and is generally required by Federal statutes.

Depending on the specific needs of actual facilities that locate in the Project, it is possible that additional resources and/or training may be required. At the time each actual technology manufacturing facility is identified for the Project, a facility-specific Emergency Services Impact Study should be performed to identify any unique needs associated with that facility.

Each Emergency Services Impact Study should specifically address the following, among other considerations:

- Potential for increase in police calls.
- Potential for increase in court services (See “Court Services” section below).
- Potential for increase in EMS calls.
- Potential for increase in motor vehicle accident (MVA) calls.
- Potential for increase in hazardous materials calls.
- Potential for increase in fire calls.
- Potential need for new fire apparatus, if warranted, potentially including a compressed air truck, a ladder truck and/or an aerial device with a span of one hundred (100) plus feet if needed to respond to a major incident at structures higher than sixty (60) to seventy five (75) feet.

Emergency vehicle access to the Project Site will be provided through multiple site access points reached by public roadways, including NYS Routes 77 and 77/63 Overlap, Judge Road, and Crosby Road.

Local fire protection services are primarily funded using local and regional tax revenues and fund raisers. Increased revenues associated with the additional tax base within the Project Site will offset increased costs to the agencies. Therefore, the Project will not have a significant impact on the local and regional emergency response services.

Waste Management

STAMP will operate within the guidelines of the GLOW Region Solid Waste Management Committee and will not have any adverse impact on either existing waste management plans or existing facilities. Waste disposal activities will not be allowed in any part of the STAMP site. All waste, including both solid waste and hazardous waste, will be required to be treated or disposed at an off-site permitted or otherwise authorized facility.

Approximately 54,000 tons per year (tpy) of solid waste and 3,000 tpy of hazardous waste are estimated as the peak generation rate during full build-out of the Project. This amount of solid waste can be readily managed by the existing private contractors operating in the region without the specific need for any additional waste management facilities.

Highway Maintenance

There will likely be impacts to highway maintenance requirements due to Project-generated traffic. Highways will be monitored to determine actual maintenance requirements over time.

Educational Facilities

Potential impacts to education facilities are both direct and indirect. Direct impacts would occur during construction and operations at the Project Site. Due to the absence of school buildings in the Project's study area and the remote location of the Oakfield-Alabama Central School District's buildings to the Project Site, no adverse impacts are expected on any educational facilities during construction or operation.

With regard to indirect impacts, educational facilities in the area are expected to benefit financially from the development of the Project. As noted in the *Economic Impact Analysis* (Appendix S), potential increased enrollments related to STAMP will be more than offset by increased tax revenues. Further, due to a declining enrollment that has taken place in the area schools over the past years, an excess of school facility capacity currently exists and is available to be utilized for increased enrollments.

Students, teachers and administrators in schools in the Project's area are also expecting to benefit from private industry initiatives and partnerships with their schools. New advanced and high tech manufacturing companies locating in STAMP

will likely strengthen science, math and technology programs in schools. Local graduates will find increased employment opportunities.

Evidence of the benefits of STAMP can already be seen in the area's schools. Beginning in 2008, GCEDC partnered with The NYS Center of Excellence on Bioinformatics at the University at Buffalo, Genesee Community College (GCC) and area high schools to introduce an initiative called iSciWNY. This initiative included training area science teachers in workshops at the University at Buffalo and the University of Rochester. As a result, students in area schools were introduced to the wide range of careers in life science industries, and the Oakfield-Alabama High School, along with 11 other high schools located in the area, began offering a college course in biotechnology. More recently, GCEDC initiated a partnership between GCC and the Rochester Institute of Technology (RIT) to develop a non-credit certificate training program in advanced and high tech manufacturing that will be piloted in the fall of 2011.

Implementation of STAMP will only continue to increase educational opportunities, like these, for area students and residents.

Public Lands and Recreation

The portion of the John White WMA that is located on the east side of Route 77 will not be directly impacted by proposed activities at the Project Site. On-going management activities to provide grassland habitat will be unaffected. It is proposed that the 93.8-acre portion of John White WMA on the west side of Route 77 and within the Project Site boundary be transferred from NYSDEC to GCEDC in support of the Project. A gateway community center is proposed for the small open field in the southeast corner of the Project Site. Many aspects of the wildlife habitat and public use opportunities currently provided by the remaining forests and wetlands would be maintained by protection of existing habitat and reforestation of the drainage corridor that flows out of this parcel to the west (Figure 6-22). Any loss of wildlife habitat value and incompatible public use opportunities as an indirect result of adjacent developments, as well as the loss of public acreage, would be mitigated by an exchange of lands whereby the NYSDEC would be compensated with lands of equal or greater value and benefit elsewhere.

There are no significant adverse impacts from the Project expected to existing public recreational or open space assets associated with the TIO Complex. The abundant natural resources in the TIO complex provide ecological resilience to the watershed and the landscape that buffers potential impacts from development of the Project Site. As described in the Long-Term Land Management Plan set forth in Section 6.4.2, public use opportunities will be provided in designated portions of the Project Site and any change in the compatibility of some public use, such as hunting, is buffered by the availability of over 19,000 acres of unaffected public lands nearby. In addition, as described above, an exchange of lands required to transfer the 93.8-acre portion of John White WMA will compensate for potential impacts and changes to public use opportunities. Future use of public recreational areas may increase over current levels with full build-out of the Project Site. Based on the abundant opportunity and the current level of public use, such an increase is not considered a



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Figure 6-22
Preferred Alternative

potentially significant adverse impact, and may even result in increased community support and awareness of the public resource.

Court Services

The Project is not expected to result in a potential significant impact to the resources of the court services provided in the Town of Alabama. The activities at the Project Site will be largely manufacturing-related subject to strict compliance with local, State, and federal requirements. As a result, there will not be zoning-related matters that may arise before the local court. In addition, there is no projected increase in traffic and local criminal prosecution matters due to the Project being implemented. However, in

6.10 Community Character

The purpose of this section is to discuss the nature of the existing character of the Town of Alabama community and the potential changes that may occur as a result of the Project. This section examines the capacity of the Town's current aesthetic resources to adapt to the Project, and identifies which mitigation measures, if any, shall be implemented to minimize, to the maximum extent practicable, the impacts to the community's character.

6.10.1 Existing Conditions

The Project Site and surrounding areas largely consist of agricultural lands, open spaces, and a limited amount of large lot residential development. The southeast corner of the Project Site is part of the John White WMA, and the Seneca Nation of Indians Reservation borders the Project Site to the west. Portions of the Project Site and surrounding areas are located within the Genesee County Smart Growth Plan.

Aesthetics

The Project Site vicinity is characterized by rural, agricultural land uses. The town centers of Alabama, Wheatville, and South Alabama are in the area. These small town centers or hamlets are predominantly rural and residential in nature, and vary in size. However, due to the grid layout of the street pattern, traffic flows regularly through these small residential clusters. Within the three (3) mile radius surrounding the Project Site, there is very little development with the exception of the hamlets' commercial or industrial development. The Project Site is also in the immediate vicinity of the Seneca Nation of Indians Reservation to the west and southwest. Some commercial development was found in this area, such as gas stations and convenience stores. It is evident that the predominant land use characteristics of this area are agricultural, open space, and rural residential.

The surrounding topography is predominantly flat with very gently rolling hills that is typical for this region. Along the southern end of the study area near Ledge Road the elevation does rise somewhat significantly over a short distance. Vegetation on the Project Site is clustered around existing agricultural fields and wetlands. Vegetation in the Iroquois National Wildlife Refuge and the Tonawanda Wildlife Management Area is very dense, and there are concentrated areas of wetlands. Overall, the

height of vegetation predominantly ranges from 50 to 90 feet. The presence of gently rolling hills further elevates tree growth, further restricting views across the landscape. Further detail with regard to visual issues may be found in the Project's *Visual Impact Assessment* (Appendix R).

Noise

A baseline noise study was performed at selected locations on and around the Project Site to characterize and quantify existing noise character. Baseline noise levels were recorded at the following six monitoring locations during the period from December 1 to 20, 2010:

- Patterson Road at western terminus.
- NY Route 77/63 at Ham Road.
- NY Route 77/63 south of Ham Road.
- Judge Road east of southwest STAMP site corner.
- Crosby Road south of power line crossing.
- Lewiston Road at Crosby Road.

In general, noise levels are greater during the day than at night. Weather during the monitoring event was variable and included periods of snow (Figure 6-23). Sound levels during the monitoring period ranged from approximately 17 dBA to 73 dBA.

See *Evaluation of Existing Ambient Sound Levels for STAMP* (Appendix F) for further detail of the baseline noise study.

Socioeconomics

Based on 2010 US Census figures, the current Town population is estimated at 1,869 people, a decline of 12 people, or 0.6 percent, over the past 10 years. The population of Genesee County is estimated at 60,079 people, a decline of 291 people, or 0.5 percent, over the last 10 years. These regional population declines contrast with 2010 US Census figures showing a 2.1 percent rise in New York State population and a 9.7 percent rise in U.S. population. For the Town and County, projections show further population decline by 2014.

Median household income has risen in both the Town and the County since 2005, but lags behind surrounding communities. Current median income in the Town is estimated at $49,505 as compared to Genesee County, which is estimated at $51,586. Over the past few years, the median household income in the Town has grown at a compound annual growth rate of 2.33% and in the County at a rate of 2.72%. By comparison, the growth rate in the eastern part of Niagara County has been 2.82%, Orleans County has been 2.97%, and the eastern part of Erie County has been 3.21%.

According to the US Department of Labor, Bureau of Labor Statistics as reported in the eCanned.com Industry Analysis Series, the population of Genesee County is moderately educated, with 16.2 percent of the population over 25 years old having



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Figure 6-23
Existing Ambient Noise Monitoring Locations

received at least a Bachelors Degree, according to the Decennial Census of 2000. Genesee has a lower percent of population with this high education level than the State of New York's proportion of 27.4 percent and a lower percent than the United States proportion of 24.4 percent.

6.10.2 Potential Impacts and Mitigation Measures

Aesthetics

The Project is designed in a campus setting, meaning that development is respectful of and compliments its natural landscape, and the Project will be developed at a low density. In response to community comments, landscape buffers will surround the Project along property lines shared with existing houses, roads, and the hamlet of Alabama in order to maintain existing viewsheds as well as the rural character of the area surrounding the Project. In addition, a ridgeline that runs between the existing hamlet of Alabama will remain undeveloped to provide visual separation between the hamlet and the Project (Appendix R).

Central to the Project's open space system is the large wetland system that crosses the Project Site from southeast to northwest. The wetlands area will accommodate both an existing headwater stream, as well as the re-routing of another headwater stream, and its associated habitat and wetlands will be preserved and enhanced. This natural corridor, along with the Whitney Creek corridor and various wetlands located throughout the Project Site, will anchor the open space system. A trail network will weave its way throughout the Project Site, and will be a useful amenity for both workers at the Project Site and the Town at large.

The Project is planned visually to integrate into the existing rural setting in a comfortable, compatible manner. The larger technology manufacturing structures are located on the lower western portion of the Project Site, while the smaller-scale supporting structures are located on the eastern portion of the Project Site to provide a scale transition to off-site farmland. In addition, significant undeveloped buffer zones are located around the Project Site's perimeter. Building materials will be high-quality and will be chosen to reflect the rural agricultural vernacular of the area.

The master plan for the Project has been designed to integrate the manufacturing facilities into the existing community fabric. In addition, the following specific design measures have been integrated in the development plan to minimize Project visibility:

- Cutting of trees on hedge rows shall be avoided to the maximum extent practicable.
- All trees on the Project Site shall be protected from disturbance to the maximum extent practicable to ensure the Project Site retains its rural character.
- All buildings shall be landscaped with indigenous plants adapted to the conditions found in the surrounding areas.

- All exterior lighting shall be minimized and focused downward to the maximum extent practicable to avoid excessive night time lighting glow above the Project Site.
- The design of specific buildings, structures, signs, and general streetscape, in addition to building materials, shall be high-quality and chosen to reflect the rural-agricultural vernacular of the surrounding area.

Noise

Potential impacts during construction and operation of the Project are assessed in this section using NYSDEC guidelines. Noise levels for construction and operation have been approximated and compared to noise levels defined in Section 6.10.2, Noise.

Several factors affect sound as perceived by the human ear. These include the actual level of sound (or noise), the frequencies involved, the period of exposure to the noise, and changes or fluctuations in the noise levels during exposure. Table 6-25 lists some typical noise levels from common sources.

TABLE 6-25
Typical Noise Levels from Common Sources

Source	dBA
Military Jet, Air Raid Siren, Alarm	130
Amplified Rock Music	110
Jet Takeoff at 1,640 Feet	100
Freight Train at 100 Feet	95
Train Horn at 100 Feet	90
Heavy Truck at 50 Feet	85
Tractor or Lawn Mower at 50 Feet	85
Backhoe, Grader, or Bulldozer at 50 Feet	80-86
Busy Traffic Intersection, City Street, Loud Shout	80
Idling Truck at 50 Feet	80
Chain Saw at 50 Feet	75-81
Highway Traffic at 50 Feet	70
Light Car Traffic at 50 Feet, Residential Areas Close to Industry or City or Commercial Areas	60
Predominantly Industrial Area	60
Background Noise in an Office	50
Surburban Areas with Medium Density Transportation	50

The Town of Alabama does not have a noise control ordinance that applies to STAMP. While NYSDEC published guidance "Assessing and Mitigating Noise Impacts" (NYSDEC, 2001) would not supercede a local noise ordinance or regulation, the NYSDEC guidance establishes a basis to assess the Project's potential for noise impacts. This guidance does not provide quantitative noise limits, but its key recommendations are briefly summarized below:

- New noise sources should not increase noise levels above 65 dBA in non-industrial areas.
- USEPA found that 55 L_{dn} was sufficient to protect public health and welfare, and in most cases did not create an annoyance. (55 L_{dn} is equal to a continuous level of 49 dBA)
- Sound level increases of more than 6 dBA may require a closer analysis of impact potential depending on existing sound levels and the character of surrounding land use and receptors.
- In determining the potential for an adverse noise impact, consider not only ambient noise levels, but also the existing land use, and whether or not an increased noise level or the introduction of a discernable sound that is out of character with existing sounds will be considered annoying or obtrusive.
- Any unavoidable adverse effects must be weighed along with other social and economic considerations in deciding whether to approve or deny a permit.

The NYSDEC guidance states that the L_{eq} "provides an indication of the effects of sound on people (and is) useful in establishing the ambient sound levels" and the L_{90} is "often used to designate the background noise level".

The Project proposes to limit noise at the STAMP boundary to an L_{eq} of 65 dBA during the day and 45 dBA at night. These levels are consistent with other technology manufacturing sites, including the Luther Forest Technology Campus in Malta, NY.

As noted above, the NYSDEC guidelines state that new noise sources should not increase noise levels above 65 dBA in non-industrial areas. In addition, they note that USEPA found that Ldn 55 dBA was sufficient to protect public health and welfare, and in most cases did not create an annoyance. The proposed Project property line requirement of 65 dBA during the day and 45 dBA at night will ensure that the 65 dBA level referenced by NYSDEC for non-industrial areas is not exceeded. In addition, the proposed 45 dBA limit at night is consistent with an L_{dn} of 55 dBA as referenced by NYSDEC. While Project levels may exceed the 6 dBA NYSDEC relative threshold for additional study, the resulting maximum Project level of 65 dBA generally does not exceed maximum existing average (L_{eq}) baseline noise levels documented within the vicinity of the Project, which ranged from 63 dBA to 73 dBA, It should also be noted that given the 65 dBA / 45 dBA (day/nighttime) limit proposed at the property line, lower levels would be realized at receptors which are not located immediately adjacent to the property boundary.

As a result of the foregoing analysis, it is not anticipated that implementation of the Project will result in a significant adverse impact to existing baseline noise levels.

Socioeconomics

Implementation of the Project has the potential to improve local and regional socioeconomics. By creating quality jobs focused on high technology advanced manufacturing and ancillary development, the exodus of young college graduates in the 20-34 age range from the Genesee County community and Western New York region can be reduced or reversed. This will serve to improve existing socioeconomics by retaining the intellectual capital produced locally while maintaining the rural-agricultural aesthetic of the Town of Alabama.

Research was conducted to obtain pertinent socioeconomic impact information related to the proposed project. Two benchmarking trips to existing technology manufacturing communities were conducted for Town of Alabama officials and interested parties. Data on these two communities was obtained through the meetings and discussions described below and through various internet sources.

The first benchmarking trip was made to Hillsboro, Oregon in March 2010 to tour a long-established technology manufacturing community known locally as “Silicon Forest”. Technology companies in the area include computer chipmaker Intel, solar panel manufacturer SolarWorld and biotechnology company Genentech. The Town group met and had discussions with a number of Hillsboro city department representatives, including the Planning Department, Economic Development Department and Hillsboro Fire and Rescue. In addition, the group met with State of Oregon economic development officials, workforce and job training officials and Portland General Electric.

Until the late 1970’s, Hillsboro was a relatively slow-growing city depending largely on agriculture as the primary economy. With the arrival of Intel’s first technology manufacturing campus in 1979, Hillsboro began a growth trend that continues to the present. According to US Census figures, the 1980 Hillsboro population stood at 27,664 and grew to 91,611 in 2010, a 40-year period. Today, manufacturing is the leading employment sector in Hillsboro, employing 24% of the workforce, followed by health care, education and social services at 15%. Retail employment constitutes 12%, construction 7% and 13% of workers are employed in the administrative, scientific, professional or waste management industries.

Discussions with Hillsboro officials indicated that while this growth has benefited the community in many ways, there has been a significant change in the character of the community over the last 40 years. However, stringent land use controls driven by a combination of State and local land use controls and ordinances have been able to direct this growth in an orderly, planned manner. Significantly, Hillsboro lies at the edge of the State-mandated “Urban Growth Boundary”, a development limit line that was established around Portland, the major city in the region located some 20 miles east of Hillsboro. As a result, while Silicon Forest lies within the UGB and is therefore in a developed area, nearby land lying north and west of the heart of Silicon Forest lies outside the UGB and is therefore undeveloped and rural in nature.

This is an example of how a local jurisdiction, working with available land use control mechanisms, can manage the character of proposed development in a technology manufacturing community.

A second benchmarking trip was made to the eastern part of New York State to the SUNY Albany Nanotech Campus and to the Town of Malta in Saratoga County, north of Albany. Malta is the location of the Luther Forest Technology Campus (LFTC), a newly developing technology manufacturing community that is home to a new AMD/GlobalFoundries computer chip fabrication (FAB) facility that is nearing completion of construction. During this trip, the Town group met with economic development officials that had been involved with establishing Luther Forest as an attractive site for technology manufacturing development, and the group also attended a panel discussion with Town of Malta officials, including the Supervisor, Comptroller, Building & Planning Coordinator, Director of Parks and Recreation, Town Attorney and the Highway Superintendent. Also serving on the panel were representatives of the Round Lake Fire Department, the Malta Ridge Fire Department, the Malta Ambulance Corporation and Ballston Spa Schools.

Historically, Saratoga County has been an important industrial center. Key industries dating to the early 1800's were paper mills, tanneries, foundries and textile mills. Saratoga County flourished as an industrial center until the mid-twentieth century, when a combination of factors had led to economic lethargy for the county. However, since the 2006 announcement that computer chipmaker AMD/GlobalFoundries intended to locate a major wafer fabrication (FAB) facility in the Luther Forest Technology Campus (LFTC), Saratoga County has been in the midst of an economic rebound. According to US Census data, the population of Saratoga County stood at 200,635 in 2000. The 2010 US Census indicates Saratoga County population has grown to 219,607 in the last 10 years, an increase of 9.5%. Town of Malta population in 2000 stood at 13,005 and by July 2009 had grown to 14,651, an increase of 12.7%.

Discussions with Town of Malta and Saratoga County officials indicated that anticipated job and tax benefits due to the AMD/GlobalFoundries project are just beginning to be seen. The project has been under construction for some 18 months and is due to begin producing semiconductor chips in 2012. To date, construction jobs have been plentiful, and AMD/GlobalFoundries has begun hiring and training for permanent positions. At the time of the second benchmarking trip in April 2010 described above, a new property assessment had just been received by the Town of Malta indicating a significant increase in property value for the AMD/GlobalFoundries site even though the facility was not yet actually producing product.

The construction and operation of STAMP and the creation of over 9,000 direct new high-salary manufacturing-related jobs are expected to have a substantial positive effect on local and regional socioeconomic indicators, such as educational levels and per capita personal and household incomes, compared to the existing baseline demographic statistics and trends presented in Section 6.10.1, Socioeconomics and the *Economic Impact Analysis* (Appendix S). Other related socioeconomic indicators such as unemployment, industrial employment, percentage of working age

population employed, and a population age distribution which reflects better retention of working age young adults in the region would also be expected to exhibit substantial improvement over present socioeconomic measures.

In addition to these primary measures of socioeconomic welfare, the local community will be expected to benefit from less readily measurable improvement, such as a more widespread availability and depth of new or expanded programs of educational, cultural, and community service institutions in the region. Such community improvements, which tend to accompany rising incomes and educational levels within a community, would be a secondary positive socioeconomic impact of the rising income and educational levels resulting from the development and operation of STAMP.

The Project will likely result in some level of increased population in the Village of Oakfield, Town of Batavia, and other communities surrounding the Town of Alabama. It is expected that this increase in population will be in harmony with local land use and comprehensive master plans. This increase in population is consistent with local master planning and is not considered a potential significant adverse impact.

6.11 Demography

The purpose of this section is to examine the current demographic nature of the community in which the Project Site is located and examine the potential significant adverse impacts, if any, the Project may have on the existing demography.

6.11.1 Existing Conditions

The Town of Alabama is located in the northwest part of Genesee County in Western New York. The Town encompasses 42.8 square miles and is bounded by Orleans County to the north, and Erie and Niagara County to the West. Existing conditions, as described in the Oakfield-Alabama Comprehensive Plan, have not changed substantially since the Comprehensive Plan was finalized in 2005.

Based on 2010 US Census figures, the current Town population is estimated at 1,869 people, a decline of 12 people, or 0.6 percent, over the past 10 years. The population of Genesee County is estimated at 60,079 people, a decline of 291 people, or 0.5 percent, over the last 10 years. These regional population declines contrast with 2010 US Census figures showing a 2.1 percent rise in New York State population and a 9.7 percent rise in U.S. population. For the Town and County, projections show further population decline by 2014. The median age of a Town resident is slightly younger (36.3) than the remainder of Genesee County (37.9).

Median household income has risen in both the Town and the County since 2005, but lags behind surrounding communities. Current median income in the Town is estimated at $49,505 as compared to Genesee County, which is estimated at $51,586. Over the past few years, the median household income in the Town has grown at a compound annual growth rate of 2.33% and in the County at a rate of 2.72%. By comparison, the growth rate in the eastern part of Niagara County has

been 2.82%, Orleans County has been 2.97%, and the eastern part of Erie County has been 3.21%.

There are currently approximately 642 households in the Town. Only 44 (7%) of homes in the Town of Alabama are currently served by public water and none are served by public sewer. The Town also lacks widespread access to broadband services.

The major sources of employment for the Town of Alabama are agriculture and public administration. Agriculture is the single most prevalent economic activity, making up almost 50% of the land use therein. Wildlife conservation areas (25.94%) and Native American uses (17.52%) represent the second- and third-largest types of land uses in the Town. According to the Oakfield-Alabama Comprehensive Plan, single-family residential use is the fourth-largest use, encompassing 4.19% of the Town's total land use.

6.11.2 Potential Impacts and Mitigation Measures

Implementation of the Project has the potential to improve the local and regional demography. By creating quality jobs focused on high technology advanced manufacturing and ancillary development, the exodus of young college graduates in the 20-34 age range from the Genesee County community and Western New York region can be reduced or reversed, serving to stabilize the demographic distribution and to retain intellectual capital produced locally, while maintaining the rural-agricultural aesthetic of the Town of Alabama.

The Project will likely result in some level of increased population in the Village of Oakfield, Town of Batavia, and other communities surrounding the Town of Alabama. It is expected that this increase in population will be in harmony with local land use and comprehensive master plans. This increase in population is consistent with local master planning, and is not considered a potential significant adverse impact.

The region's dependence on traditional manufacturing, and the attendant decline in sources of traditional manufacturing across the State and the nation, has resulted in local economic development agencies concentrating their efforts on attracting new industries that have the potential to grow in a sustainable manner. High technology manufacturing has been identified as a potential growth industry that could replace jobs lost due to aging infrastructure and increased competition in the traditional manufacturing sector.

Implementation of the Project will serve to attract these high tech manufacturers and improve the existing and regional employment bases, while maintaining the local agricultural industry of the Town of Alabama and Genesee County. The two (2) economic forces can mutually coincide in a community, as demonstrated by the Luther Forest project in Saratoga County, New York, as well as the Intel Ronler Acres Campus located in Hillsboro, Oregon, just outside of Portland. As a result, the introduction of the Project into the Town of Alabama community has the potential to improve local and regional demography, while largely preserving the existing agricultural base.

6.12 Historic and Archeological Resources

The purpose of this section is to discuss the potential historic and archeological resources located within the Project Site, the potential significant impacts to these resources, and what mitigation measures, if any, are required to mitigate such impacts to the maximum extent practicable.

6.12.1 Existing Conditions

A *Phase IA Cultural Resource Assessment* (Appendix T) for the Project Site has been completed. Because construction of the Project would occur in several development phases, a *Phase IA Cultural Resource Assessment* was deemed appropriate for the entire Project Site. The purpose of the Phase IA investigation was to gather information pertaining to the environmental and cultural setting of the Project Site in an effort to determine if any prehistoric or historic cultural resources would be potentially and significantly impacted. This was accomplished through Phase IA literature research, sensitivity assessment, and field reconnaissance.

The Project Site consists of 1,337.20 acres, which is comprised of agricultural land, woods, brush, grass, wetlands, and various ponds and disturbed areas. Whitney Creek and other unnamed drainages flow through the western and southern sections of the Project area. In addition, 93.8 acres of the John White State WMA are located within the Project Site. The John White WMA consists of woods, agricultural land, grassy open space, ponds and wetlands, and areas of prior ground disturbance associated with grading and gravel parking areas.

Phase IA field reconnaissance was conducted by the principal investigator and one field technician on separate occasions from February 6th to March 16th, 2010. During that time, a total of 112 photographs were taken to show general field conditions, areas of prior ground disturbance, wetlands, buildings or structures over 50 years old within the Project Site, and buildings or structures over 50 years old adjacent to the Project Site. The Phase IA report details the research conducted and the results, conclusions, and recommendations it produced (Appendix T).

As a result of Phase IA literature research and sensitivity assessment, it has been determined that about 40 acres or 3% of the Project Site area is comprised of alluvial soils. The site file search produced 17 sites within 1 mile of the Project Site, and 1 site within the Project Site. Of the 18 known sites, there are 13 prehistoric sites, 2 historic sites, and 3 sites with no site file form. In addition, the historic maps indicated several MDSs within and adjacent to the Project Site. Therefore, the Project Site is regarded as having a high degree of sensitivity for prehistoric sites, and a moderate-to-high degree of sensitivity for historic sites in undisturbed contexts.

During Phase IA field reconnaissance, photographs were taken of 6 houses, 2 house foundations, 7 barns, 2 barn foundations, and 2 unidentified foundations estimated to be over 50 years old within the Project Site. Adjacent to the Project Site, photographs were taken of 40 houses, 12 barns, 2 garages, the Alabama Hotel, a masonry building, and American Legion Post 626, all of which are estimated

to be over 50 years old. Prior ground disturbance associated with the development of the John White WMA and general field conditions were also photographed.

6.12.2 Potential Impacts and Mitigation Measures

Given the high sensitivity for prehistoric sites and the moderate to high sensitivity for historic sites, a Phase IB field investigation is warranted for all sections of the Project Site to be potentially impacted by proposed development. Once the Phase IB field investigations are completed, a better assessment of the potential impacts, if any, can be provided.

Proposed measures to mitigate any potential significant impacts to historic and/or archeological resources found on-site to the maximum extent practicable will be established once the archeological review is completed. Mitigation measures, if any, shall comply with the applicable criteria set forth by the NYSOPRHP, and may include re-alignment of structures, impervious services, and other development features to avoid or minimize potential significant adverse impacts to on-site historic and archeological resources.

6.13 Agricultural Resources

This section examines the existing agricultural resources located at the Project Site and analyzes the potential impact the Project may have on such resources. This section further examines specific measures that may mitigate the impact to agricultural resources resulting from the Project and, in particular, the implementation of *Farmland Protection Strategies for the Town of Alabama, New York* (Appendix K), as part of the re-zoning necessary to develop the Project Site.

6.13.1 Existing Conditions

Farming is a major industry in Genesee County and within the Town of Alabama. In 2008, Genesee County was ranked fourth in New York State for economic activity generated from farming ($179 million). Within the Town, agriculture is the single most prevalent economic activity, making up almost 50% of the land uses located within the geographical boundaries of the municipality.

The Project Site is currently zoned A-R (Agricultural-Residential) under the Town of Alabama Zoning Law, and is located within the Genesee County Agricultural District No. 2 (“Ag District No. 2”). As shown in the STAMP Farmland Classification Map and the STAMP Project Soil Capability Map (Figures 6-24 & 6-25, respectively), farmland within the STAMP site boundary may be classified as either “Prime Farmland” or “Prime Farmland Where Drained”.

There are approximately 148,584.30 acres of cropland located in Genesee County, with approximately 120,365 acres of this total classified as Prime Farmland. Ag District No. 2 encompasses 55,143.18 acres of land located in the Towns of Alabama, Batavia, Elba, Oakfield and Pembroke. According to worksheets returned by landowners to the Genesee County Planning Department, most of the farms located in Ag District No. 2 produce cash crops such as grains and vegetables, as

well as dairy products. In addition, a significant number of farms raise livestock for purposes other than dairy products.

Of the 55,143.18 acres located in Ag District No. 2, 37,592.15, or 68.2%, were reported as being in farms; 37,460.6 acres, or 67.9%, were reported as being cropped; 18,492.25 acres, or 33.5%, were reported as being owned by farmers; and 10,099.90 acres, or 34.6%, were reported being rented to farmers. As of March 25, 2011, 12 properties encompassing 325.8 acres were removed from Ag District No. 2 and 45 properties totaling 905 acres were added. These modifications represent a net gain of 579.2 acres to Ag District No. 2.

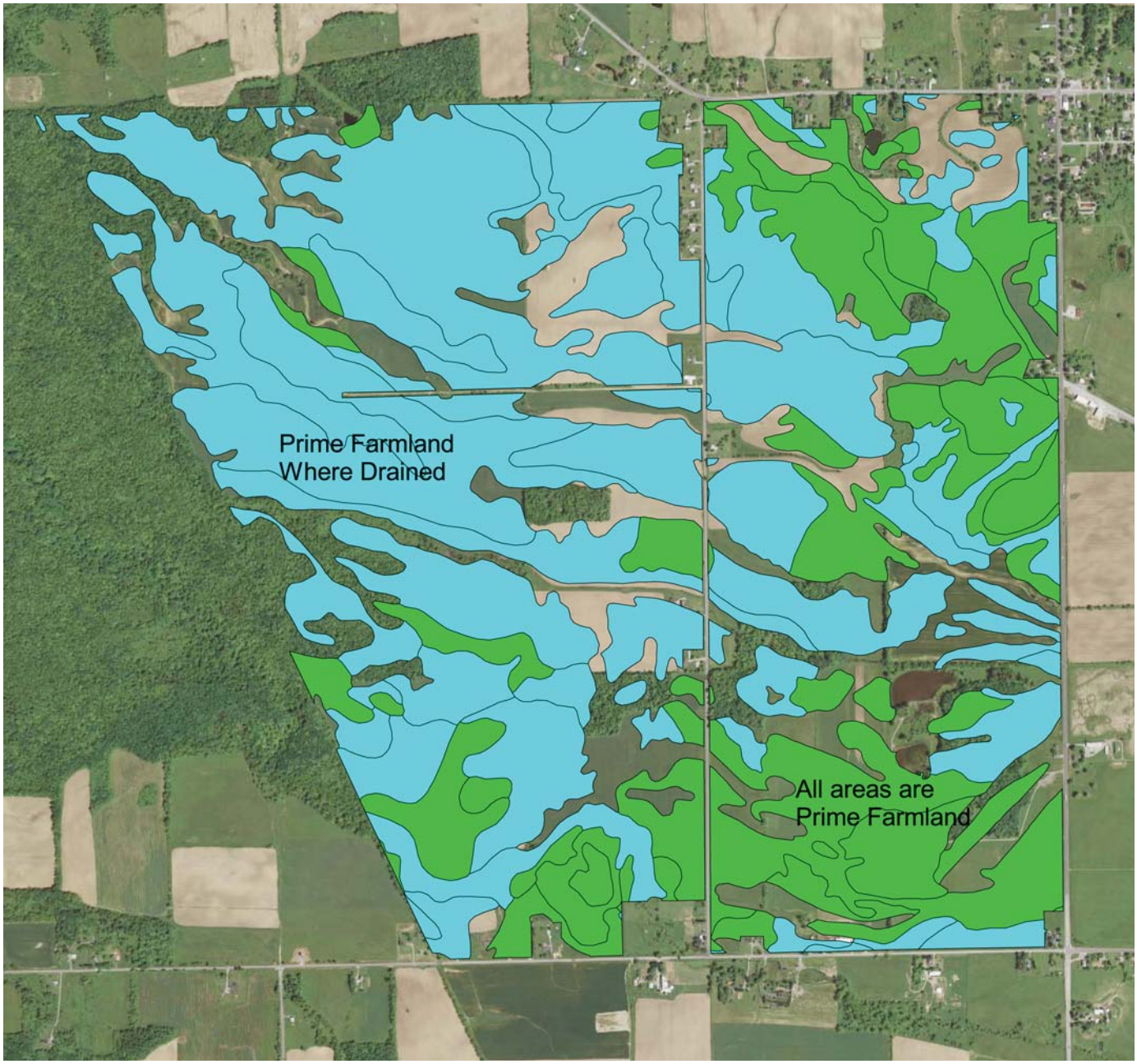
The Project Site has 970.86 acres of cropland, representing approximately .65% of the total cropland acreage in Genesee County and approximately 1.7% of the total farmland acres located in Ag District No. 2. Based on available information, approximately 950 acres of the Project Site are currently being used for farming. The total area of Prime Farmland located within the Project Site is approximately 275 acres, representing 0.23% of the total Prime Farmland located in Genesee County and 0.49% of the total Prime Farmland acreage located in Ag District No. 2.

In order for the remaining portions of the Project Site's cropland acreage to be considered unencumbered Prime Farmland, comprehensive drainage actions either have been completed or may need to be completed subject to NYSDEC and USACE review and approval in light of the presence of wetlands on the Project Site, Some portions of the Project Site may be considered "Prior Converted" (farmed prior to 1985) and therefore exempt from federal and state permitting requirements. Current conversations with the USDA Natural Resources Conservation Service and other regulatory agencies, however, indicate the regulations governing definition/enforcement of "Prior Converted" status are not clearly defined and may be subject to varying interpretation.

6.13.2 Potential Impacts and Mitigation Measures

Implementation of the Project will result in a potential loss of agriculture use at the Project Site. However, the potential loss of future agricultural use at the Project Site represents less than 1% of the total cropland acres located in Genesee County, and approximately 1.7% of total cropland acres located in Ag District No. 2. In return for this minimal loss of cropland, the Project will create over 9,000 high-paying technology-related direct jobs at the Project Site and will become a significant net contributor to the local economy. In addition, the Preferred Alternative master plan has been developed at a low density and physical layout to be in visual harmony with the existing agricultural lands that surround the Project Site.

A number of factors will further mitigate the loss of agricultural use at the Project Site. For example, development of the Project will not result in an immediate total loss of agricultural use at the Project Site. The phased development of the Project, coupled with implementation of the Long Term Land Management Plan described in Section 6.4.2, will ensure that future development areas will be maintained in their current land use until construction is commenced. As a result, that acreage which is currently being farmed on development areas proposed for the Project Site will

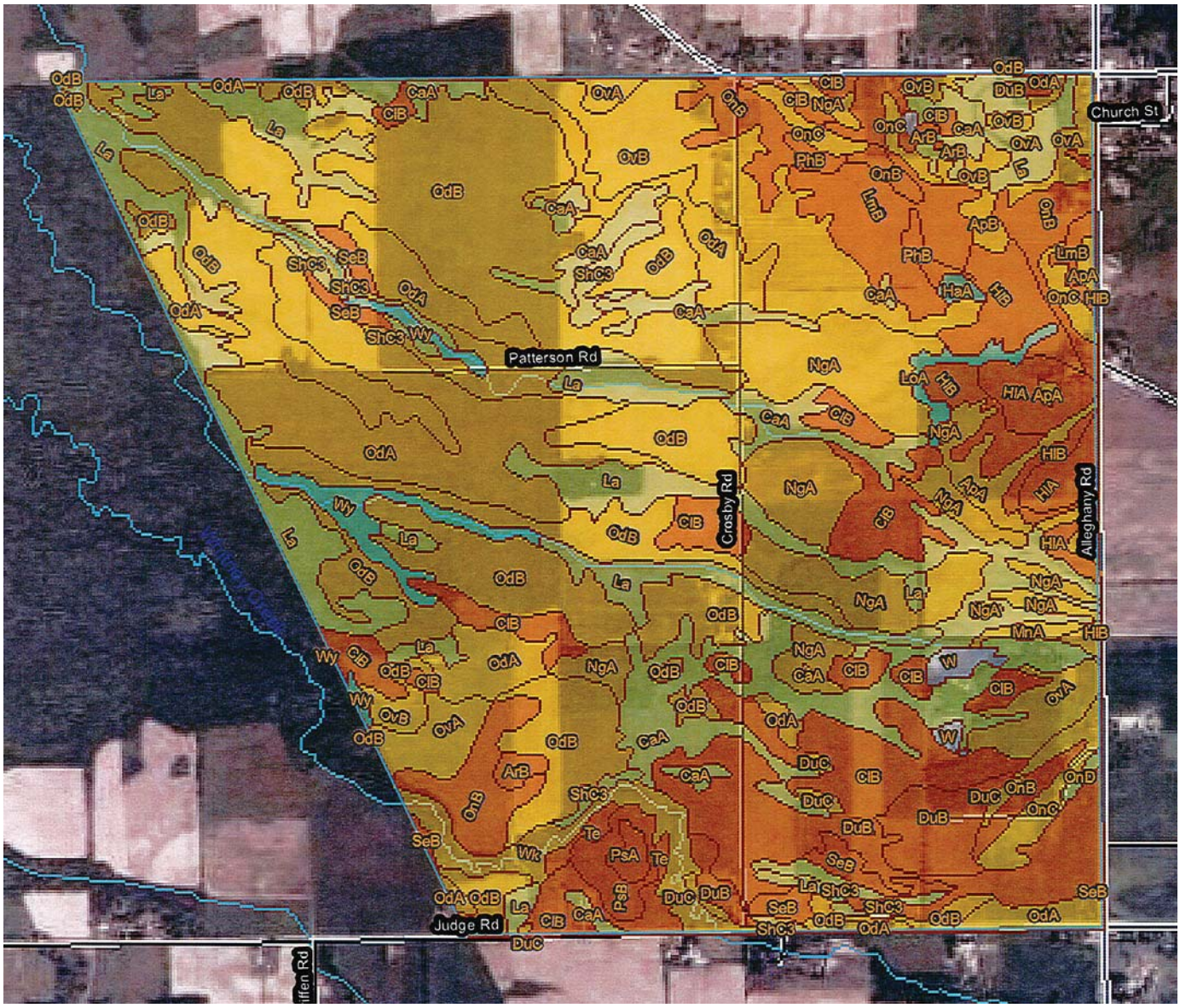


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Figure 6-24
STAMP Farmland Classification Map

(Source: Genesee County Planning Department)



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Figure 6-25
STAMP Project Soil Capability Map

(Source: United States Department of Agriculture)

continue to be farmed until such time that construction for each respective area is commenced.

In addition, an important tool in mitigating the loss of agricultural use in the vicinity of the Project Site will be the Town of Alabama's implementation of a proactive farmland protection strategy. The Farmland Protection Strategies Report ("FPSR") (Appendix K) prepared for this DGEIS sets forth several options for developing an effective farmland protection strategy. The FPSR describes and consolidates potential strategies for the Town of Alabama to evaluate and consider as methodologies to protect farmland located in other areas of the Town.

The FPSR goes well beyond mitigating farmland loss associated with the Project, providing the Town with a comprehensive framework for developing and implementing a farmland protection strategy for the entire Town. Ideally, the FPSR can serve as a foundation to create a broad-based Farmland Protection Plan for the Town of Alabama that will help the Town and Ag District No. 2 secure preservation of (and even gains in) the portfolio of farmland located in the Town to offset the incremental loss of agricultural use at the Project Site. Because this FPSR goes so far beyond the mitigation needs for the Project, and involves decision-making authority at the local zoning level, the responsibility for selecting and implementing appropriate farmland protection strategies must be left to the discretion of the Town Board.

The FPSR compiles a list and description of various farmland protection strategies that are available for the Town to implement. The Town has the option to adopt and/or implement as many or as few strategies as desired. In addition, all of the strategies have the potential to be adopted in whole or in part and in connection with any other strategy.

The strategies listed below are the strategies the FPSR suggests the Town may want to adopt, where applicable:

- Enhance Zoning Protection For Agricultural Lands: Enhancing zoning protection for agricultural lands would include the creation of agricultural districts; the creation of a subdivision law to manage residential development; increase minimum lot sizes; adjust supplementary yard regulations; and appoint an "Agricultural Member" of the Planning Board.
- Create a Town-Based Purchased Development Rights Program
- Create an Advisory Town Farmland Protection Committee
- Identify/Refine Priority Farmland List
- Promote Agriculture and Focus on Improving Agribusiness
- Assist Farmers in Identifying or Developing Direct Marketing Options
- Provide Public Education on the Value of Farms
- Provide Public Education on Existing Programs/Assistance

- Organize/Provide Farm Generational Planning/Estate Planning
- Organize/Assist in Identifying Farm Worker Pool
- Implement Additional or Strengthen Existing Right-To-Farm Laws

Although development of the Project will result in a loss of agricultural use on portions of the privately-owned properties encompassing the Project Site, such impacts will be mitigated by a phased development strategy for the Project, implementation of the Long-Term Land Management Plan, implementation of the FPSR by the Town of Alabama, and the significant local job and tax benefits the Project will generate.

7. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

This section addresses the extent to which the Project may cause a loss of environmental resources in both the immediate and long-term future, including natural and man-made resources that are consumed, converted, or made unavailable for further use.

The Project will require the irreversible and irretrievable commitment of certain human, material, environmental, financial and energy resources as described below. For the most part, the commitment of these resources will be offset by the benefits that result from the construction and implementation of the Project.

Human and financial resources have already been expended by GCEDC, the State of New York, the County of Genesee, and the Town of Alabama for the planning and review of the Project. The expenditure of funds and human resources will continue to be required throughout the permitting and construction phases of the Project (e.g., for environmental reviews and permitting, site plan approval, rezoning and building and construction inspections).

The Project also represents commitment of the land for the life of the Project. Approximately 46% of the 1,337.20-acre Project Site will be developed and not available for alternative uses for the life of the Project. However, through a comprehensive planning approach that takes into consideration environmentally sensitive resources, 54% of the Project Site's acreage will be preserved as open space in order to protect existing wetlands, water and ecological resources, as well as provide a more rural, agrarian aesthetic consistent with the community's character. Coupled with the proposed 100 and 300-foot buffer zones to be located at the Project Site and implementation of the proposed Long-Term Land Management Plan, the master plan depicted in the Preferred Alternative mitigates the impact of the permanent commitment of 46% of the Project Site's acreage to the maximum extent practicable.

Various types of construction materials and building supplies will also be committed to the Project. Although the use of these materials, such as gravel, concrete, steel, etc. represent a long-term commitment of these resources which will not be available for other projects, they do not constitute a potential significant adverse impact to the environment.

Energy resources also will be irretrievably committed to the Project during the construction and operation of the Project. Fuel and electricity will be required during site construction and Project operations. However, the projected consumption of fuel and electricity does not represent a significant adverse environmental impact to the energy sources. In addition, the Project lies within the Niagara Hydro Power Zone and will draw its electrical consumption needs from this renewable energy

source. Lastly, the design of the buildings on the Project Site will utilize Leadership in Energy and Environmental Design (LEED) standards to the maximum extent practicable, thus maximizing energy efficiencies in the construction process and sustainable practices in the ongoing operation of the Project's facilities.

A commitment of private and public funds will be made to the Project based on the premise that residents in the immediate communities, region, and state will greatly benefit by increased property and sales tax revenues, growth in land values surrounding the Project Site, increased employment opportunities in the local, regional, and state communities, and other revenues directly or indirectly generated by the Project. Therefore, the initial financial investments illustrated in the Preferred Alternative represent a long-term benefit rather than irreversible or irretrievable commitments of resources.

With the influx of new, high paying advanced manufacturing jobs, STAMP will be a major catalyst in helping to stem the tide of years of decline in Western NY's manufacturing base and help foster economic stability. Economic stability will in turn lead to enhanced social viability and the ability of communities to plan and protect the sustainability of their economies and natural resources.

Economic benefits associated with the Project will be substantial and are summarized as follows:

- At full build-out, STAMP will comprise approximately 6.1 million square feet of employment-supporting building space with a total estimated assessable value of $760.5 million.
- STAMP will support over 9,000 full-time-equivalent (FTE) jobs at full build-out and occupancy.
- STAMP employment is projected to generate direct annual wages of $531.9 million at full build-out and occupancy (2011 dollars).
- Total economic output is projected to equal approximately $4.6 billion at full build-out and occupancy, including secondary economic impacts.
- Indirect wages (wages not directly attributed to STAMP employers) are projected to equal $761.3 million at build-out and occupancy, reflecting indirect employment of over 7,000 FTE jobs.
- Construction phases are projected to support 1,400 to 2,900 direct and indirect FTE jobs during the duration of development, with total earnings ranging from $40.8 million to $83.8 million.
- Property tax rates are projected to decrease due to significant increases in the tax base from STAMP:
    - The Town of Alabama could realize a decrease in the tax rate per $1,000 in value from $1.11 to $0.11.

  - Genesee County could realize a decrease in the tax rate per $1,000 in value from $9.82 to $7.97.
  - Oakfield-Alabama School District could realize a decrease in the tax rate per $1,000 in value from $23.73 to $16.94.

- Total recurring annual state income taxes are projected to equal approximately $33.6 million at full build-out and occupancy.

Retail operations are projected to generate annual sales taxes of $2.3 million each to the County and State.

8. POTENTIAL UNAVOIDABLE IMPACTS

Development often permanently alters the conditions of an area, and in the process, creates certain unavoidable impacts. With respect to the Project, certain unavoidable impacts may be presented in the form of material, energy, agricultural resources, altered habitats for non-endangered plants and animal species, and aquatic resources. However, these impacts either are considered not to constitute potential significant adverse environmental impacts, or will be minimized and/or avoided to the maximum extent practicable as a result of the implementation of the mitigation measures identified in this DGEIS. Furthermore, the substantial financial and community benefits (e.g., public water supply contribution) that will result from the Project will greatly offset the incurrence of such impacts.

The following is an examination of the potential short-term and long-term unavoidable impacts that may result from the Project.

8.1 Potential Short-term Unavoidable Impacts

Short-term unavoidable impacts will likely be created during the construction phases for the Project. These impacts may include increased noise and odor, as well as a short-term impact to air associated with soil disturbances and truck movement. Effective site planning and development will mitigate the anticipated impacts associated with construction of the Project to the maximum extent practicable Construction of the Project will also result in the use of building materials, such as concrete, timber, steel and other metals.

8.2 Potential Long-term Unavoidable Impacts

Certain long-term unavoidable impacts may result from the full build-out of the Project. Some of these impacts will be mitigated through the measures identified in this DGEIS. Such impacts include:

8.2.1 Loss of Property

The Project will represent a permanent impact on approximately 46% of the 1,337.20 acres of land comprising the Project Site. However, over half (54%) of the total acreage will be set aside for the protection of the wetlands, surface waters, ecologically sensitive areas, and recreation and open space areas that exist on the Project Site. The incorporation of the planning designs set forth in this DGEIS for the Project will mitigate the unavoidable loss of 46% of the Project Site's acreage to the maximum extent practicable.

8.2.2 Loss of Agricultural Use on Project Site

Despite the goal of maintaining as much open space as possible on the Project Site, once the Project is developed, the opportunities for future active farming on the Project Site will be lost on an incremental basis. The potential loss of future

agricultural use at the Project Site represents less than 1% of the total cropland acres located in Genesee County, and approximately 1.7% of total cropland acres located in Ag District No. 2. In return for this minimal loss of cropland, the Project will create over 9,000 high-paying technology-related direct jobs at the Project Site and will become a significant net contributor to the local economy. In addition, the Preferred Alternative master plan has been developed at a low density and physical layout to be in visual harmony with the existing agricultural lands that surround the Project Site.

A number of factors will further mitigate the loss of agricultural use at the Project Site. For example, development of the Project will not result in an immediate total loss of agricultural use at the Project Site. The phased development of the Project, coupled with implementation of the Long-Term Land Management Plan described above in Section 6.4.2, will ensure that future development areas will be maintained in their current land use until construction is commenced. As a result, that acreage which is currently being farmed on development areas proposed for the Project Site, will continue to be farmed until such time that construction for each respective area is commenced.

In addition, an important tool in mitigating the loss of agricultural use at the Project Site will be the Town of Alabama implementing the proposed *Farmland Protection Strategies Report (*"FPSR"). The FPSR (Appendix K) is intended to describe and consolidate potential strategies for the Town of Alabama to evaluate and consider preserving farmland elsewhere in the Town.

The FPSR goes well beyond mitigating farmland loss associated with the Project, providing the Town with a comprehensive framework for developing and implementing a farmland protection strategy for the entire Town. Ideally, the FPSR can serve as a foundation to create a broad-based Farmland Protection Plan for the Town of Alabama that will help the Town and Ag. District No. 2 secure preservation of (and even gains in) the portfolio of farmlands located in the Town to offset the incremental loss of agricultural use at the Project Site. Because the FPSR involves decision-making authority at the local zoning level, the responsibility for selecting and implementing appropriate farmland protection strategies must be left to the discretion of the Town Board.

Although the Project will ultimately result in an unavoidable loss of agricultural use at the Project Site, that loss does not constitute a potential significant adverse impact to the existing agricultural resources located in the Town of Alabama and Genesee County.

8.2.3 Permanent Use of Energy

The full build-out of the Project Site will result in the Project utilizing on a permanent basis certain energy resources including electricity and natural gas. However, the estimated consumption of these energy resources is relatively insignificant, and well within the capacity of the energy sources. In addition, the Project lies within the Niagara Hydro Power Zone which will provide a low-cost renewable source of energy for the Project.

8.2.4 Altered Habitats for Non-Endangered Plant and Animal Species

The full build-out of the Project may result in an unavoidable alteration of habitats for some non-endangered plant and animal species. The ecological communities (habitats) found at the Project Site are common throughout New York State and within the surrounding landscape. Habitat alteration resulting from the Project will be offset by protection and restoration of key natural area corridors on the Project Site, abundant habitat for these species immediately adjacent to the site and in the immediate vicinity of the Project Site, including over 19,000 acres of protected conservation lands.

8.2.5 Impacts to Aquatic Resources

The full build-out of the Project may result in the unavoidable loss of wetland and associated headwater stream habitat, most of which is of low quality due to degradation by past and current land use at the Project Site. Compensation for these impacts will be provided by implementation of a mitigation strategy that will enhance, restore, and protect wetlands and streams of equal or greater value on and off the Project Site. Any temporal loss of aquatic resource functions and services will be offset by the ecological resilience of the surrounding watershed.

8.2.6 Impact to Existing Traffic Patterns

There are a number of potential LOS degradations (increases in delay at area intersections) that may result from the full build-out of the Project and, in order to view those potential impacts in a conservative manner, are being considered potential unavoidable impacts associated with the Project Site's traffic generation.

Nevertheless, the full build-out analysis of the Preferred Alternative indicates that a majority of the study area intersections will continue to operate adequately. A two-lane capacity analysis of NY Route 77 shows that only the Judge Road to Bloomingdale Road segment could become congested during full build-out conditions. Since additional mitigation above and beyond the improvements identified for the 70% threshold may be necessary to provide adequate operations at a few locations, it is recommended that a supplemental traffic analysis be conducted after the 70% threshold is reached, or when the Project Site generates 1,925 trips during the PM peak hour. The supplemental analysis would focus on the intersections below:

- NY Route 77/NY Route 63/Judge Road
- NY Route 77/Bloomingdale Road
- NY Route 77/Ledge Road
- Route 77/Route 63/Lewiston Road

In sum, the *Traffic Impact Study* (Appendix I) indicates that the proposed improvements for the Project will provide adequate operations at the Project's study area intersections and on the existing road network for the levels of traffic anticipated. With implementation of the proposed traffic improvements set forth in

the *Traffic Impact Study*, these potential impacts do not constitute potential significant adverse impacts to existing traffic patterns.

9. POTENTIAL GROWTH INDUCING AND CUMULATIVE IMPACTS

This section examines the potential growth-inducing aspects that can be reasonably expected to result from the Project, as well as the potential cumulative impacts, if any, that the Project may create in conjunction with any future or pending development projects that exist in the community. Growth inducing aspects of the Project primarily serve to promote further the economic development within a geographic region.

Certain proposed actions covered under the SEQRA process have the potential to trigger further development by either attracting a significant local population, inviting commercial industrial growth, or by inducing the development of similar projects adjacent to the Project constituting an action. In addition, Section 617.9(b)(5)(iii)(a) of the SEQRA regulations requires the discussion of cumulative impacts where such impacts are "applicable and significant."

Cumulative impacts occur when two (2) or more individual environmental effects which, when taken together, are significant or that compound or increase other environmental effects. The individual effects may be effects resulting from a single project or from separate projects. In addition, potential cumulative impacts that may arise from interactions between the impacts of the Project and the impacts of other projects are addressed in this section. In this regard, cumulative impacts are impacts on the environment that may result from the incremental increased impact of an action when the impacts of that action are added to other present, past, and reasonably foreseeable future actions. Assessment of any such potential cumulative impacts is limited to the consideration of probable impacts, not speculative impacts.

Cumulative impact assessment must be done under the following circumstances: (a) if two or more simultaneous or subsequent actions themselves are related in that: (i) one action is an interdependent part of a larger action or included as part of any long range plan; (ii) one action is likely to be undertaken as a result of the proposed action will likely be triggered by the proposed action; and (iii) one action cannot or will not proceed unless other actions taken or one action is dependent on another; or (b) if the impacts of related or unrelated actions may be incrementally significant and the impacts themselves are related.

In general, cumulative impact analysis of external projects is required where the external projects have been specifically identified and either are part of a single plan or program, or there is a sufficient nexus of common or interactive impacts to warrant assessing such impacts together. Some cumulative impacts are the simple additive effect of the projects (i.e., each will disturb a certain amount of ground surface, wetlands, or stream crossings). Also each will provide certain economic benefit to the host community. These additive impacts can be quantified by simply

tallying the total impacts resulting from each project to the extent that such information is known and has been publicly presented. Certain other cumulative impacts may not simply be additive, and therefore need a certain level of further analysis.

The Project is not interdependent upon or undertaken as a result of or otherwise dependent upon any other proposed action in the area. Therefore, whether potential related impacts from this Project and other external projects may be incrementally significant is considered in this section.

9.1 Existing or Approved Projects

There are no existing or approved projects in the Town of Alabama or surrounding area that could provide potential significant adverse impacts in accumulation with the Project.

To the contrary, the Town of Alabama is examining the cost and feasibility of providing public water supply and fire protection to approximately 411 additional homes in the Town of Alabama (Appendix M). The Town of Alabama, the Village of Oakfield, and the Town of Pembroke are planning water main projects in the vicinity of the Project Site. The planned municipal projects vary in their scopes. The Town of Alabama is proposing an 8-inch water main along New York State Route 77 from the intersection of Lewiston Road south to the intersection of Route 63, a 12-inch water main along Route 63, from Route 77 to Maple Street; and a 12-inch water main along Route 63, from Maple Street east to the Village of Oakfield water system.

This water project, which generally consists of installing approximately 103,720 linear feet of water main, valves, fire hydrants, water services, and appurtenances throughout various portions of the Town of Alabama, including the Project Site, would increase the number of residential homes in the Town of Alabama served by public water to 455 or approximately 70% of the Town's households. This project will provide a significant benefit to the community, and will not, in conjunction with the Project, present any potential significant adverse environmental impacts. The exact timing for the completion of the water projects will further depend upon the securing of funding sources.

Alabama Ledge Wind Farm, LLC has proposed to develop a wind-powered generating facility of up to 38 turbines with a maximum capacity of approximately 80 MW. The wind farm project is proposed to be located within the Town of Alabama and is currently undergoing a SEQRA review process. At this juncture, it is uncertain whether the project is moving forward for approval. Nevertheless, the wind farm project does not provide a potential cumulative adverse environmental impact in conjunction with the Project. To the contrary, both projects have the potential to provide significant financial benefits to the Town of Alabama in terms of increased tax base, as well as a focus on renewable energy industries to support the nation's efforts to reduce its dependency on fossil fuels.

GCEDC is also developing a 232-acre technology park in Pembroke, New York at the crossroads of New York State Routes 77 and 5, named Buffalo East. However,

there are no potential cumulative impacts associated with this project and the development of the Project Site.

9.2 Inducement of Growth

The Project does have the potential to induce growth in the Town of Alabama and the surrounding communities in a number of ways, including employment opportunities, housing, and ancillary businesses.

9.2.1 Construction Workers Growth

The development of the Project will result in a significant number of construction workers with seasonal employment being located at the Project Site. These workers will be involved in a number of general and specialized construction activities with various trades associated with the different specialized phases of the work. The construction phase for the Project is planned to continue over a period of approximately 15 years. Construction will be intermittent through this period, and discontinued thereafter. It is anticipated that there is a current excess of available construction workers in the Buffalo-Batavia-Rochester region, and that many of these workers will be drawn from the existing labor pool along with residents of Genesee County and Western New York.

The construction trades workers will most likely patronize restaurants, hotels/motels, entertainment facilities, and other service providers in the vicinity of the Project Site and surrounding communities. This will result in a temporary boost to the local economy. By itself, however, the entry of new construction workers into the area of the Project Site is not expected to result in the opening of any specific new businesses that cater to the needs of these workers. Some expansions to existing service providers could be likely, depending upon the specific location and success of these establishments. This temporary construction work force is not expected to create any significant amount of additional demand for housing or other community services. Therefore, the construction aspect of the Project is not anticipated to result in any significant growth inducing impacts.

9.2.2 Population Growth

The Project will provide significant new and expanded employment opportunities in the Town of Alabama and region. The Project is anticipated at full build-out to provide over 9,000 new, quality jobs. Many of these new jobs are expected to be filled by the existing population residing within an approximate 60-to-70 mile radius of the Project Site. Some jobs will be filled by professionals moving into the area. As a result, implementation of the Project will likely contribute to population growth in the Genesee County area, and as far east as Rochester and west as Buffalo.

9.2.3 New Housing

The new jobs created by the Project will spur an increased demand for existing and new housing. In turn, the sale of such housing could create a gradual, increased school enrollment in those respective communities that create new housing over the planned development period. Throughout the community input process conducted

for the Project over the past several years, Town of Alabama elected officials and citizens have voiced considerable opposition to additional residential development in the Town of Alabama proper. The Town of Alabama wishes to retain its agrarian character while attracting complementary commercial uses, and does not wish to permit the widespread development of residential subdivisions within its boundary. Section 6.7.1, County Farmland Protection Plan prepared for this DGEIS sets forth strategies for consideration by the Town of Alabama that will accommodate this goal.

Discussions with the Village of Oakfield and the Town of Batavia indicate they would welcome an opportunity to expand their residential base. This would allow Oakfield and Batavia to accommodate residential demand generated by the Project, while allowing Project employees the opportunity to live in areas located near the Project Site.

The Project's potential to induce growth within the Town of Batavia and the Village of Oakfield will be managed by the land use planning processes of those jurisdictions. New housing developments in those jurisdictions would need to be in compliance with local comprehensive plan and zoning ordinance requirements. Mitigation measures, as necessary for this new housing, will be implemented as a condition of local project approval.

9.2.4 Ancillary/Secondary Growth

The Project will likely induce some level of complimentary secondary growth, especially in the area of supply and support enterprises and other high-technology entities. This potential secondary growth is dependent on the Project securing an "anchor" advanced technology manufacturing company locating at the Project Site. This impact, however, is considered beneficial to the region and the State. The resultant secondary businesses would be complimentary to the "anchor" advanced technology manufacturing company, and they are not anticipated to result in any potential significant adverse impacts; be concentrated in any one portion of the development schedule; or cause any significant growth inducing impacts by themselves. Each secondary business located outside of the Project Site would need to be consistent with the local zoning or otherwise be approved on a local level, and each would be subject to its own SEQRA review process.

The planned development of the Project Site anticipates the need for these secondary businesses. Specific development areas are provided for such ancillary development within the Project Site with the objective of minimizing traffic and visual impacts outside of the Project Site, consistent with smart growth objectives. Additional potential locations for such secondary ancillary development include the City and Town of Batavia, and Erie, Niagara and Monroe Counties. Existing urban areas throughout the Genesee, Erie, Niagara, and Monroe Counties could significantly benefit from the secondary growth resultant from the Project. Existing buildings with available infrastructure in urban areas could be re-used for industrial development, or retrofit for office space or R&D, all within the constraints of existing allowable land uses.

9.2.5 Water Induced Growth

Providing water supply to the Project Site may have the potential to cause an insignificant amount of induced growth in the surrounding region. However, as stated above, the Town of Alabama is already examining the cost and feasibility of providing public water supply and protection to approximately 411 additional homes in the Town of Alabama (Appendix M). The Town of Alabama, the Village of Oakfield, and the Town of Pembroke are also planning water main projects in the vicinity of the Project Site. These planned municipal projects vary in scope. These projects will provide a significant benefit to the community, and will not, in accumulation with the Project, present any potential significant adverse environmental impacts. The exact timing for the completion of the municipal projects will further depend upon the securing of funding sources.

Moreover, any potential future development opportunities resulting from these water supply projects will be subject to local zoning review and approval processes. In addition, the Genesee County Smart Growth Plan provides guidance to prioritizing water supply projects.

9.2.6 Traffic Improvements

Anticipated traffic improvements required for the Project will not have the potential to induce growth. The traffic improvements recommended in Section 6 of this DGEIS and in the *Traffic Impact Study* (Appendix I) are designed to act as mitigation measures for the potential impacts of traffic resulting from the Project, as opposed to mechanisms by which induced growth can occur.

Moreover, as stated above, any potential future development opportunities resulting from any induced growth elements will be subject to local zoning review and approval processes. The Project's potential to induce growth within the Town of Alabama and other local jurisdictions will be managed by the land use planning processes of those jurisdictions. New development proposals in those jurisdictions would need to be in compliance with local comprehensive plan and zoning ordinance requirements and subject to Planning Board approval. Mitigation measures, as necessary for any new development, will be implemented as a condition of local project approval.

9.3 Summary of Growth Inducement

The Project has the potential to induce regional growth in both population and business activity within a large geographic area. Some level of such induced growth has been anticipated in the overall design of the Project and will be accommodated within the Project Site. Other growth resulting from the Project will occur in the Village of Oakfield, Town of Batavia, as well as the urban areas of Genesee, Erie, Niagara, and Monroe Counties. Such growth will occur on a voluntary basis, subject to local environmental review and approval. Localities that do not desire such growth related to the Project will have the ability to limit future growth consistent with their comprehensive master planning efforts, whereas those localities that desire

such growth can take appropriate steps to authorize site plan applications allowing construction to proceed.

All potential induced growth related to the Project shall be consistent with applicable local zoning and community comprehensive master planning requirements. Independent environmental review for off-site projects shall be completed in accordance with SEQRA and will be done for each individual project outside the purview of the Project.

10. EFFECTS ON USE AND CONSERVATION OF ENERGY RESOURCES

This section identifies the energy sources to be used during the Project, the anticipated levels of consumption, and suggested ways to reduce the potential energy consumption.

10.1 No-Build Alternative

The No-Build Alternative would not result in any impacts on the use and conservation of energy resources (Figure 10-1).

10.2 Preferred Master Plan Alternative

The construction and operation of the Project would have both short-term and long-term impacts on the use and conservation of energy resources. In the short-term, construction of the Preferred Master Plan Alternative would involve the use of nonrenewable energy resources including gasoline, diesel, fuel oil, and electricity. In addition to construction-related energy use by equipment such as excavators, backhoes, loaders, bulldozers, dump trucks, generators, and paving equipment, an indirect use of energy would also occur as a result of construction workers commuting to and from the Project Site.

The general long-term impacts of the Preferred Master Plan (Figure 10-2) on the use and conservation of energy would result from traffic generated by the Project and consumption of energy from day-to-day operations of users located at the Project Site. Estimated electric and natural gas loads for the Project are described in more detail in Section 6.8. In addition, the *Industry Requirements and Environmental, Health & Safety Impacts Report* (Appendix H) also analyzes how potential manufacturing technologies targeted for the Project would consume energy.

10.3 Potential Impacts and Mitigation Measures

The Project is anticipated to consume natural gas and electricity for a combination of typical domestic applications and manufacturing production applications.

Typical domestic applications include:

- Building cooling.
- Building heating.
- Building and site lighting.

Typical manufacturing production applications include:

- Boilers which provide both process and building heat.
- Hot water for sanitation and showers.
- Point-of-Use (POU) air pollution control systems.
- VOC abatement systems.

In addition, fuel oil will be used to power emergency standby generators or used as a back-up fuel supply for the boiler systems in the event of a natural gas outage.

Table 10-1 below summarizes estimated energy consumption for STAMP at full build-out.

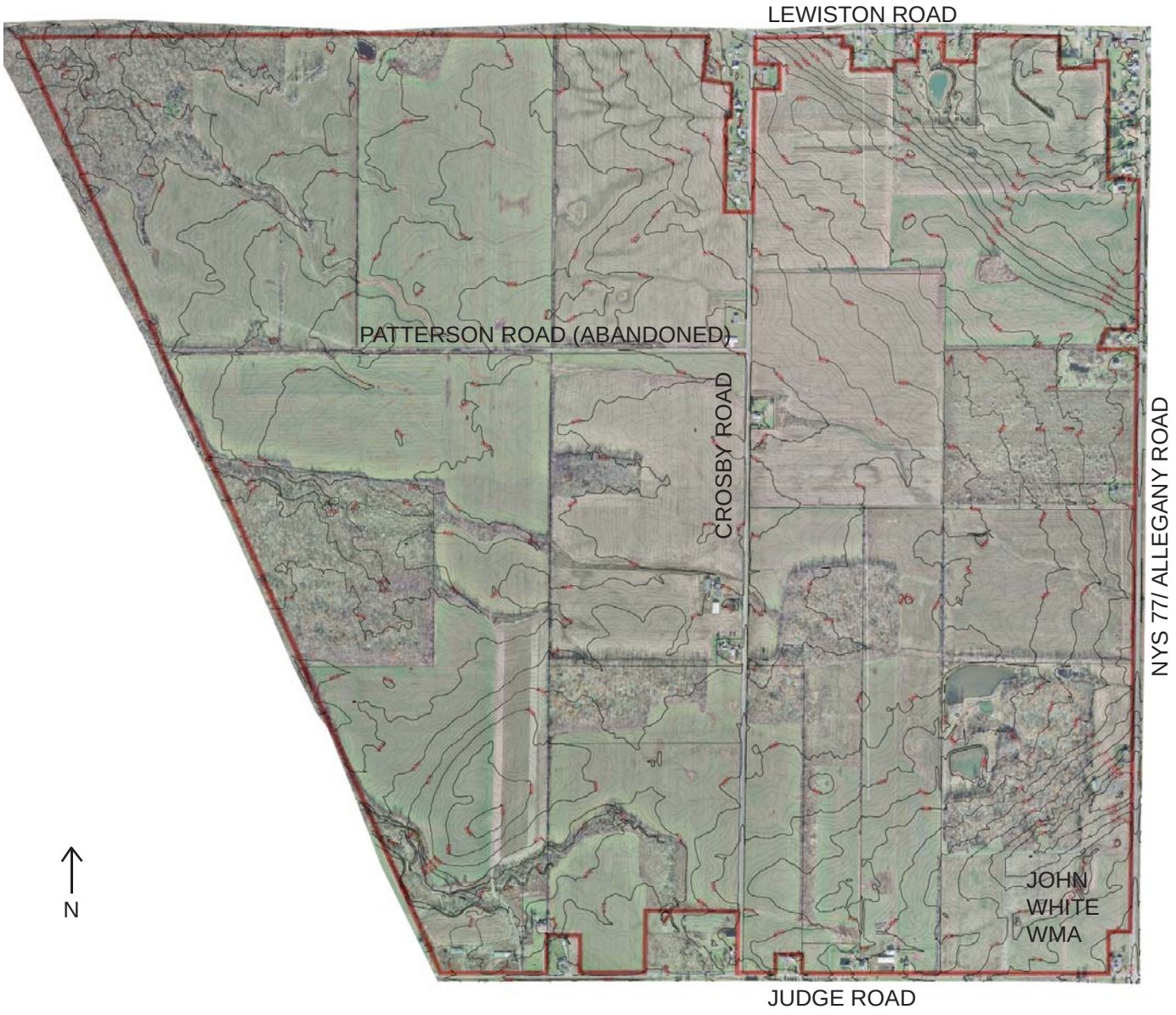
TABLE 10-1
Energy Consumption Loads at build-out

Source	Quantity	Unit
Electric Power	185	MW
Natural Gas	318,600	CFH
Fuel Oil	1,440,000	Gal/Yr

The Project's anticipated consumption of energy does not represent a potential significant adverse environmental impact warranting the implementation of mitigation measures. The annual consumption of natural gas and electricity can be met by the current energy sources, as described more fully in Section 6.8. Nevertheless, the design and development of the buildings to be located at the Project Site will incorporate state-of-the art energy efficient technologies and will meet current applicable federal and State requirements. In addition, the advanced technology manufacturing operations to be located at the Project Site include technology sectors that will help advance the nation's progress toward the utilization of renewable energy resources, thus creating a conservational benefit.

Energy conservation will be further achieved at the Project Site by using high-efficiency and cost-effective equipment and lighting, as applicable regulatory standards of energy efficient construction and lighting will be applied. In addition, as the cost of energy is a significant contributor to overall production costs, it is in the financial best interests of technology manufacturing companies to employ rational methodologies to reduce energy requirements. Typical energy conservation methods for advanced technology manufacturing include:

- Variable speed drives for motors and pumps.
- Energy-efficient motors.
- Ultra-pure water system conservation techniques (re-use in some applications and reclaimed or recycled process water).
- Creation of mini-environments to isolate energy-intensive clean areas.



STAMP
Draft Generic Environmental Impact Statement

Town of Alabama, New York

Figure 10-1
No-Build Alternative



STAMP
Draft Generic Environmental Impact Statement

Town of Alabama, New York

Figure 10-2
Preferred Alternative

- Advanced chiller optimization techniques.
- Reduced process exhaust and air system static pressure and velocities through improved design.
- Energy efficient lighting.
- Heat recovery from waste streams,

Spent chemical re-use and re-processing. It is anticipated that buildings constructed at the Project Site will conform to the energy standards recommended by the New York State Building Construction Code. Buildings would be designed and constructed incorporating design and selection of equipment and systems to achieve maximum energy conservation, in compliance with the applicable provisions set forth in the New York State Energy Conservation Construction Code (NYSECC). Given the projected build-out timeframe, each proposed new structure will be required to meet the applicable energy standards of the most recent provisions of the NYSECC. Possible energy-efficient construction techniques to be utilized include use of double-pane argon-filled or triple-pane windows; energy-efficient glazing; motion-sensor lighting; energy-efficient ballasts; and increased insulation. These buildings are expected to deploy technology and computer resources for energy conservation measures, the use of which would offset electricity for their use.

11. THRESHOLDS FOR FUTURE ACTIONS

A generic environmental impact statement (GEIS) is prepared by a Lead Agency whenever there is a need to assess a wide variety of impacts at a conceptual level on a larger scale, rather than on a project-specific or site-specific environmental impact statement. By addressing potential cumulative impacts and adopting mitigation measures and thresholds for future development and actions upfront, the use of a GEIS can establish a framework by which potential significant adverse environmental impacts are addressed at the planning stage, thus reducing the SEQRA review requirements as new construction proceeds at later stages.

The Project represents a conceptual development plan involving the zoning approval, construction, and operation of a world-class advanced technology manufacturing campus on the 1,337.20-acre Project Site located in the Town of Alabama. The purpose of the Project is to develop an advanced technology center, with a focus on renewable energy, to serve as an economic development engine central to the economic sustainability and well-being of the western portion of New York State. The DGEIS has evaluated potential generic impacts associated with the well-defined elements of the Project, as well as the potential cumulative, longer-term impacts associated with the less-defined full build-out of the Project.

As the Project progresses, changes may occur as the conceptual plans are developed into final design proposals for the well-defined elements, but more likely, for the less- defined components. Such changes may specifically include proposed changes to the contemplated development plan including increases or decreases in total project square footages devoted to a specific use.

This section outlines the conditions or criteria and procedures to be followed in evaluating future Project uses pursuant to the requirements of SEQRA.

11.1 SEQRA Procedures

Final designs for less-defined Project components, as well as any proposed changes to the more well-defined elements (hereinafter referred to “Future Project Uses”), will require further evaluation pursuant to SEQRA. The Town of Alabama Planning Board, as the agency responsible for the approval of site plans associated with Future Project Uses, will be responsible for performing an environmental determination on Future Project Uses pursuant to SEQRA, and must consider Future Project Uses proposals in relation to: (i) The FGEIS which will be issued for the Project; and (ii) the final Findings Statement which will be issued for the Project pursuant to SEQRA.

Upon submission of Future Project Uses to the Town of Alabama Planning Board for site plan approval, the Planning Board must determine if the environmental impacts associated with such Future Project Uses have been adequately addressed in the FGEIS and SEQRA Findings Statement to be issued for the Project, taking into

account whether the future uses exceed any of the thresholds set forth herein. Such a determination must be made before any site plans for Future Project Uses are approved by the Planning Board.

In the event that the Planning Board determines that:

1. the Future Project Uses would be carried out in conformance with the conditions and thresholds set forth in Section 11.2, then no further SEQRA compliance would be required;

2. the Future Project Uses would be carried out in conformance with the conditions and thresholds set forth in Section 11.2, but are not addressed or are not adequately addressed in the Findings Statement then an amended Findings Statement would be prepared;

3. the Future Project Uses are not addressed or are not adequately addressed in the FGEIS for the Project, but the proposal does not exceed any of the conditions or thresholds set forth in Section 11.2, or the proposal does exceed a threshold set forth in Section 11.2, but would not result in any potential significant adverse environmental impacts, then a Negative Declaration would be prepared pursuant to 6 N.Y.C.R.R. § 617.10(d)(3); or

4. the Future Project Uses are not addressed or are not adequately addressed in the FGEIS for the Project and/or the proposed use would exceed on the conditions or thresholds set forth in Section 11.2 and may have one or more potential significant adverse environmental impacts, then a supplement to the FGEIS would be prepared.

11.2 Future Conditions and Thresholds

Future Project Uses which do not exceed or that conform to any of the following conditions or thresholds shall be considered to have been addressed in this DGEIS and would not require any further review pursuant to SEQRA:

- Maximum buildable site area established by the Preferred Alternative (Section 5.6): 618.18 acres.
- Maximum building square footage established by the Preferred Alternative (Section 5.6): 6,130,000 square feet.
- Wetland impacts and mitigation requirements established in the Preferred Alternative (Section 5.6) and described in Section 6.2.2, Potential Impacts and Mitigation Measures:
    - Maximum wetland impacts: 9.54 acres
    - Minimum existing wetlands to be enhanced, restored, and protected: 112 acres

- Zoning regulations established by the STAMP Technology District – TD Zoning Regulations (Appendix J) and summarized as follows:
    - Technology District 1 – TD1 Permitted Uses
        - Technology Manufacturing.
        - Technology Manufacturing Support.
        - Public Utility.
        - Accessory Uses and Buildings.
    - Uses Requiring Special Use Permit in TD1
        - Commercial Communication Tower (See Town of Alabama Zoning Law Section 614).
        - Wind Energy Systems (See Town of Alabama Zoning Law Section 621).
    - Technology District 2 – TD2 Permitted Uses
        - Technology Manufacturing Support.
        - Public Utility.
        - Accessory Uses and Buildings.
    - Uses Requiring Special Use Permit in TD2.
        - Commercial Communications Tower (Town of Alabama Zoning Law Section 614).
        - Wind Energy Systems (See Town of Alabama Zoning Law Section 621).
    - Technology District 3 – TD3 Permitted Uses
        - Technology Manufacturing Support with the exception of light industrial uses and/or warehousing and distribution which shall not be permitted.
        - Accessory Uses and Buildings.
    - Dimensional and Physical Requirements for Development in the Technology District
        - Minimum Lot Size
            - 100,000 s.f. for Technology Manufacturing.
            - 10,000 s.f. for Technology Manufacturing Support.
        - Minimum Frontage/Minimum Yards

- There are no minimum frontage or yardage requirements within the Technology District. However, there shall be at least a 300 foot buffer of open space along any Technology District lot line abutting a Residential or Agricultural-Residential District. Fencing, signs, landscaping, roads, access drives, utilities and utility related uses are permitted within open space buffers on the STAMP Site.

- Maximum Height
  - Technology District 1: 110 feet.
  - Technology District 2: 35 feet.
  - Technology District 3: 30 feet.
- Maximum Lot Coverage
  - Eighty (80) percent provided that the total development on the STAMP Site does not exceed twenty (20) percent Coverage of all land within STAMP; forty (40) percent if the total development on the STAMP Site exceeds twenty (20) percent Coverage of all land within STAMP. For purposes of calculating maximum lot coverage within STAMP, roads, access drives, parking lots, or other paved or gravel surfaces shall not be included as "Coverage."
- Off-Street Parking Space Requirements
  - One (1) parking space for every 1,000 square feet of floor area of Technology Manufacturing space.
  - Two (2) parking spaces for every 1,000 square feet of floor area of Technology Manufacturing Support (except as otherwise specified herein);
  - Three (3) parking spaces for every 1,000 square feet of community, museum, cultural or technology or environmental demonstration space;
  - Four (4) parking spaces for 1,000 square feet of office building space;
  - Five (5) parking spaces for every 1,000 square feet of Hotel/Motel Retail Trade or Restaurant;
  - Two (2) parking spaces for every 1,000 square feet associated with any other development.

- The minimum off-street parking space requirements specified above may be reduced by the Planning Board for good cause shown considering projected use intensity, turnover, customers, employees and vehicles used.

▪ Signs

- All signs within the Technology District shall conform to Section 606 of the Town of Alabama Zoning Law. For purposes of Section 606, the Technology District shall be treated as an Industrial District.

o Definitions

▪ The following definitions will apply to these Technology District zoning regulations. All other terms shall have the same meaning as set forth in the Town of Alabama Zoning Law.

- Technology Manufacturing: Establishments engaged in the use, research and development, demonstration, manufacturing and/or distribution of advanced technologies in modern industries such as energy, communications, information and computing technologies, pharmaceuticals and life sciences, including but not limited to semiconductors and semiconductor devices, computing technology and data centers, flat panel display technology and components including light emitting diodes and liquid crystal display, renewable energy, solar photovoltaics, and any related enabler technologies that employ advanced manufacturing techniques and/or resources such as microtechnology or nanotechnology.

- Technology Manufacturing Support: Establishments which provide support services to Technology Manufacturing including but not limited to office buildings, professional offices, light industrial uses, warehousing and distribution, museum, community and cultural facilities, technology or environmental demonstration facilities and establishments which provide on-site support services to personnel employed at STAMP including but not limited to hotel/motel, retail trade, restaurant, personal services businesses, medical/health related services, offices, banks, shopping center, community center, child day care facility, drive-in business, motor vehicle repair shop, gasoline station and/or gasoline station-market.

  - o Commercial Communication Antennas: The installation of Commercial Communications Towers or Antennas shall conform to Section 614 of the Zoning Law. For purposes of Section 614, the STAMP Site shall be treated as an Industrial District.
  - o Wind Energy Systems: The installation and operation of wind energy systems shall conform to Section 621 of the Zoning Law. For purposes of Section 614, the STAMP Site shall be treated as an Industrial District.

- Traffic trip generation exceeding 70% of projected trips at project build-out as defined in the *Traffic Impact Analysis* (Appendix I): Maximum of 1,925 trips during the PM peak hour.
- Utility loads at Project build-out established by the Preferred Alternative (Section 5.6):
  - o Water: 3,000,000 gallons per day
  - o Sewer: 3,000,000 gallons per day
  - o Electric Power: 185 megawatts
  - o Natural Gas: 318,600 cubic feet per hour

Future Project Uses which exceed or which do not conform to any of the conditions or thresholds listed above shall not be considered to have been addressed by this generic SEQRA review process and must be evaluated by the Town of Alabama Planning Board as to whether an additional SEQRA determination and/or review (e.g., Negative Declaration or Supplement to FGEIS) is necessary.

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