

**Proposed Madison County
Agriculture and Renewable Energy Business Park**

**Town of Lincoln
Madison County, New York**

**Draft Generic Environmental
Impact Statement
Appendices**

January 2012

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Appendix A

Notice of SEQRA Public Scoping Meeting

NOTICE OF STATE ENVIRONMENTAL QUALITY REVIEW ACT PUBLIC SCOPING MEETING

- Lead Agency:** Madison County
- Name of Action:** Madison County Agriculture and Renewable Energy (ARE) Business Park, proposed in the Town of Lincoln, Madison County, New York.
- Draft Scoping Document:** A Draft Scoping Document dated February 10, 2011 is available on-line for your review and comment at the following web address: www.madisoncounty.org. This Draft Scoping Document describes the issues and areas of environmental concern that are proposed to be addressed in a Draft Generic Environmental Impact Statement (DGEIS) for the proposed ARE Business Park.
- Purpose of Meeting:** To provide an opportunity for the public to identify specific issues and potential environmental impacts that should be addressed in the DGEIS.
- Meeting Time and Date:** 7:00 P.M. on March 7, 2011. The meeting will end at 8:00 P.M. if all speakers have finished commenting at that time.
- Meeting Location:** Madison County Office Building, 138 North Court Street, Wampsville, New York 13163. The meeting will take place in the Board of Supervisors' Chambers, located on the second floor.
- Conduct of Meeting:** The meeting is being held to receive public comments on specific issues or areas of concern relative to the proposed development of the ARE Business Park. Sign-up cards will be available at the meeting for any persons wishing to speak, and a stenographic record will be kept of the comments presented. The presiding officer will call speakers in turn. The meeting will not be a question and answer session, but is meant to provide as many people as possible with the opportunity to speak. If necessary, the presiding officer will set appropriate time limits. Anyone wishing to participate in this process may also submit written comments prior to the comment deadline.
- Comment Deadline:** Written comments regarding issues to be addressed in the DGEIS will be accepted until 1:00 P.M. on March 25, 2011. Written comments will be given the same consideration as any oral comments made at the public scoping meeting on March 7, 2011. Please submit written comments to the Madison County Planning Department, PO Box 606, North Court Street, Wampsville, New York 13163, Attention: Proposed ARE Business Park. Comments may also be submitted electronically by e-mail to planning@co.madison.ny.us; please insert "Proposed ARE Business Park" in the Subject line of the e-mail message.

No anonymous comments will be accepted during this public review process. Such comments will not be considered during the preparation of the Final Scoping Document or the DGEIS. **When submitting**

electronic or written comments, therefore, please include your name and mailing address with your submission.

Future Steps:

A Final Scoping Document is expected to be completed in April 2011, based on a full consideration of comments submitted on the Draft Scoping Document. Subsequently, the DGEIS will be prepared. The DGEIS will contain information regarding the development of the proposed Madison County ARE Business Park, potential environmental impacts, and measures that may be incorporated into the project to mitigate potential impacts. The DGEIS will be made available for public review and comment following its acceptance by the lead agency.

Appendix B
Final Public Scoping Document

**Proposed Madison County
Agriculture and Renewable Energy Business Park**

**Town of Lincoln
Madison County, New York**

**Final Scoping Document
SEQR Lead Agency: Madison County**

April 2011

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1.0 Project Description

Madison County, herein referred to as “the County”, proposes to designate certain County-owned lands along Buyea Road and Tuttle Road for the development of an Agriculture and Renewable Energy (ARE) Park, herein referred to as “ARE Park”, in the Town of Lincoln, Madison County, New York. These lands are generally comprised of permitted or planned soil borrow areas and buffer properties for the County’s active solid waste disposal facility.

These designated ARE Park lands are located on two County-owned parcels that have been labeled Site 1a, Site 1b, and Site 2 for identification purposes (Figure 1). Sites 1a and 1b, which total approximately 65 acres in size, are located along Tuttle Road. These sites currently include a dominance of active and abandoned agriculture lands and some deciduous forested area. It is expected that the primary access point(s) to parcels on this site will be located on Tuttle Road. Most of the acreage included in Sites 1a and 1b has previously been reviewed and approved for use as a soil borrow area, as part of the County’s permitted landfill operation.

Site 2, which incorporates approximately 230 acres, is made up of active and abandoned agriculture lands, mixed forested areas, and un-vegetated fill and disturbed soil areas. Some of these previously disturbed areas are associated with the closed portions of the Madison County Landfill and appurtenances related to the active portion of the current Landfill site. The primary access point(s) for Site 2 is expected to be located off Buyea Road. Portions of Site 2 are proposed to initially be used for soil mining activities associated with the County’s adjacent landfill operation. It is currently anticipated that any such soil mining activity would be undertaken prior to, or concurrent with, the development of that portion of Site 2. The exact limits of this potential mining area will be determined in the future.

A variety of businesses may relocate or establish themselves in the ARE Park. Businesses that locate within the ARE Park will have access to a reliable, locally generated source of green energy. The adjacent landfill gas-to-energy (LFGTE) facility, that is owned and operated by Waste Management Renewable Energy, LLC (WMRE) in accordance with a contract with Madison County, can supply up to 42.7 billion British thermal units (btu's) of green thermal energy a year. A total of approximately 12 million kilowatt-hours of low-cost green energy would be available to park tenants, subject to agreements between the tenants and the landfill gas to energy facility.

A Draft Request for Proposals (RFP) was issued by Madison County on January 7, 2009, to solicit proposals from companies that may be interested in using the green thermal energy. A lumber kiln facility, to be designed and operated by Johnson Brothers Lumber Company, responded to the RFP. The planning of this lumber kiln facility is currently in its final stages and has already undergone a separate environmental review process. It will be located on an approximately 2-acre portion of the County's landfill site, on the west side of Buyea Road and south of the existing truck entrance road for the landfill site. This lumber kiln facility proposal, the landfill, and the gas recovery and power production facilities are all co-located; however, each is separately owned, each has its own function, and each serves its own purpose. The lumber kiln project is proposed to utilize a portion of the hot water energy recovered from the landfill gas recovery project, but it will not require public water or public sewer system connections. The separate environmental review of this proposed Johnson Brothers Lumber project will not be determinative of future development in and around the landfill facilities or around the ARE Park.

Currently, the ARE Park site does not have access to municipal water or sewer facilities. Therefore, the County is planning to move forward with the extension of municipal water and sewer facilities to the ARE Park. Currently, various options for water and sewer facilities are being evaluated. The alternatives being reviewed to extend public water to the site are the construction of a connection between the ARE

Park and the Onondaga County Water Authority's (OCWA) water system or the use of a groundwater source located generally southwest of the ARE Park area; exact locations for these potential water line connections have yet to be determined, but are conceptually depicted on Figure 2. The alternatives being evaluated to provide sewer service to the ARE Park include the addition of a connection between the ARE Park and the City of Oneida's sewer system or a connection between the ARE Park and the Village of Canastota's sewer system; exact locations for these potential sewer line connections have yet to be determined, but are conceptually shown on Figure 3. The potential for development of an on-site sewage treatment system may also be evaluated. Construction of sewer facilities for the ARE Park will further enable Madison County to reduce its carbon footprint by eliminating approximately 30,000 leachate tanker truck trips over a 30-year period. This will reduce diesel emissions and conserve fuel.

The purpose of the proposed ARE Park is to provide an economically stimulating, environmentally sound, and shovel ready development area that would be beneficial to the surrounding community and that would provide an opportunity for future industrial and commercial facilities to utilize green initiatives in their business plans.

The DGEIS will present a hypothetical, conceptual development area and operations parameters for the proposed ARE Park. These conceptual parameters will form the basis for the environmental impact assessments and studies that will be undertaken to complete the DGEIS. The intent of such a hypothetical plan and impact assessment is to identify, assess, and present mitigation measures for potentially significant environmental impacts as early as possible in the ARE Park planning process. This approach should help ensure that development of the ARE Park will take place in an environmentally sound manner, and should also help expedite future economic development efforts when a company chooses to locate its business at the ARE Park.

2.0 SEQR Status

Part one (1) of a State Environmental Quality Review Act (SEQRA) Environmental Assessment Form (EAF) was completed for the proposed project. A coordinated review process was completed, in accordance with 6 NYCRR Part 617, and resulted in the issuance of a positive declaration by Madison County, acting as Lead Agency. The following agencies and groups have been identified as interested or involved agencies, as these terms are defined in 6 NYCRR Part 617.2, for this project: New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), Madison County Department of Health, Oneida Indian Nation, Onondaga Indian Nation, Madison County Industrial Development Agency (IDA), New York State Environmental Facilities Corporation (EFC), Onondaga County Water Authority (OCWA), Madison County Highway Department, New York State Department of Agriculture and Markets, Madison County Farmland Protection Board, Town of Lincoln, Town of Lenox, City of Oneida, Village of Canastota, and the New York State Historic Preservation Office (SHPO). A formal public scoping process has been completed, as outlined in 6 NYCRR Part 617.8 of the SEQRA regulations. This Final Scoping Document (FSD) is being made available to all involved and interested agencies and interested individuals for reference.

2.1 Draft Generic Environmental Impact Statement (DGEIS) Public Scoping Process

The Draft Scoping Document (DSD) was approved and issued by Madison County on February 10, 2011. The DSD was provided, along with the Notice of SEQRA Public Scoping Meeting (Appendix A), for public review and comment on Madison County's website (<http://www.madisoncounty.org/are.php>). Copies of the Draft Scoping Document could also be obtained by attending the Public Scoping Meeting or by requesting a copy of the document from the County's Planning Department. Notice of the positive declaration determination and notice

of the public scoping meeting and comment period were published in the New York State Department of Environmental Conservation's (NYSDEC) Environmental Notices Bulletin (ENB) on February 23, 2011. A copy of this notice is provided in Appendix B. This notice also included a description of the project and project contact information. In addition, a legal notice was published in the Oneida Daily Dispatch on February 18, 2011, to provide details about the public scoping meeting and provide information on how to obtain a copy of the Draft Scoping Document for review. A copy of this public notice is available in Appendix B.

Revisions to the FSD have been made based upon a review of written comments made or received during the public comment period, February 11, 2011 to March 25, 2011, and comments made or received during the public scoping meeting held on March 7, 2011, at the Madison County Office Building in Wampsville, New York. One resident from the Town of Lincoln attended the Public Scoping Meeting. Discussions were held during the meeting and questions were answered; no specific issues or formal comments regarding the Draft Scoping Document were provided during the public scoping meeting. A copy of the transcript from the public scoping meeting is available for review on Madison County's webpage (<http://www.madisoncounty.org/are.php>).

2.1.1 Draft Scoping Document – Written Comments

One written comment letter was received during the public comment period. This comment letter was provided by the Onondaga County Water Authority (OCWA), identified as a SEQRA involved agency for this project. OCWA's letter specifically commented on the proposed water service alternative that would involve a connection to the existing OCWA water system in Madison County. Issues related to this alternative that were identified by OCWA include:

- Estimated water usage at the ARE Park versus OCWA's available capacity;
- Impact on existing customers in areas already served by OCWA;
- System pressures;
- Tank size, water main size, pump station(s) capacity;
- Water quality issues, since the proposed facilities are at the far end of OCWA's system; and
- Service to potential customers along the transmission route.

To date, preliminary engineering analyses have been completed in association with this proposed water service alternative. The following details are provided to respond to the issues posed by OCWA in their comment letter.

OCWA has indicated the quantity of water available to areas in the eastern most portion of their system (i.e., western Madison County area) is currently limited; OCWA is reserving the remaining capacity for areas that are within the footprint of OCWA's existing infrastructure. OCWA has indicated that there is currently no available capacity for expansion into new service areas, such as the Madison County ARE Park. OCWA is, however, currently working with the Town of Constantia on the North Shore Water System, which involves the extension of water transmission mains along the northern portion of Oneida Lake (upon completion, this will provide a hydraulic loop of Oneida Lake) that will provide an increased transmission capacity of 1.75 million gallons per day to the eastern most portion of OCWA's system. It is anticipated that the North Shore Water System project will be completed within 3-5 years (by 2016), resulting in additional system capacity for OCWA to provide a water supply to the ARE Park.

Under the OCWA water supply alternative, the facilities identified through preliminary engineering analyses that would be required to serve the ARE Park include 4.1 miles of 10-inch transmission main, a duplex pumping station, and a

250,000 gallon elevated water storage tank. A potential site for the duplex pumping station has been identified adjacent to the existing water tank in the Village of Canastota. It is anticipated that the elevated water tank would be located on Madison County owned land, located adjacent to ARE Park Site #2. Based on the topography between the Village of Canastota's existing water tank and the ARE Park site, anticipated pressures in the transmission main would likely vary between 55 pounds per square inch (psi) and nearly 200 psi, depending on the actual ground elevation. Upon completion of OCWA's North Shore Water System project, initial engineering analyses indicate that the only anticipated impact the ARE Park project would have on existing OCWA customers would be an increase in normal system pressures for 10-15 houses along Oxbow Road in the Town of Lenox. To alleviate this anticipated impact, pressure-reducing valves for these houses would be included in the ARE Park water project.

Water quality has also been identified as a potential concern by OCWA since the proposed ARE Park water system facilities would be located at the far end of OCWA's existing system. In order to maintain adequate water quality, it is anticipated that water will need to be periodically flushed from the ARE Park system. The cost of the water used for this purpose would be charged to the system owner (ARE Park).

Service to potential customers along the proposed water transmission main in the Town of Lincoln would require the formation of a special improvement district. If the Town of Lincoln proceeds with formation of such a water district, variable frequency drives (VFDs) could be installed at the pump station to deliver water to an intermediate tank. This tank, along with a second pump station, would be constructed as part of additional facilities installed by the Town of

Lincoln. Preliminary engineering analyses indicate that the addition of these facilities would reduce the highest pressure along the water transmission main from approximately 200 psi to 120 psi.

This water system alternative will continue to be evaluated and will be detailed in the Draft Generic Environmental Impact Statement. Additional engineering analyses may be undertaken during the DGEIS review process, if necessary; the results of which would be included in the DGEIS. A copy of the written comment letter received from OCWA during the public comment period is provided as Appendix C and is also available electronically for review on Madison County's webpage (<http://www.madisoncounty.org/are.php>).

2.2 Draft Generic Environmental Impact Statement (DGEIS)

The DGEIS will be the principal document that describes the general technical and environmental information and impacts associated with the proposed project. This document will help to establish specific conditions or criteria under which industrial and commercial facilities can be constructed and approved for development in the ARE Park. The DGEIS document will focus on issues that are common to the entire proposed ARE Park area and not those related to a specific location or specific type of industry.

In addition to the components described in Section 3 of this document, the DGEIS will also include a cover sheet, a table of contents, a summary of the document's contents, and a discussion of the project's background, purpose, and public needs and benefits, including social and economic considerations.

3.0 Potential Project Impacts, Mitigative Measures and Alternatives

The scope of the Draft Generic Environmental Impact Statement (DGEIS) for the proposed development of the Agriculture and Renewable Energy Park will focus on potential impacts that this project may incur upon ecological resources (flora and fauna, land, water, air), agricultural resources, historic and archeological resources, open space and recreation, transportation, energy, public health, aesthetics (noise, odor, visual impacts), and growth and community character.

Informational resources which will be used as documentation during the completion of the DGEIS include environmental studies and field investigations that have been or will be conducted on-site and information provided by the public, participating groups and organizations, and local, state, and federal agencies. Methodologies for obtaining new information are delineated in the following sub-sections, as appropriate.

3.1 Historic and Cultural Resources

Studies have been conducted within portions of Sites 1a and 1b, Site 2, and along portions of the potential water and sewer pipeline corridors regarding the presence of historic, archaeological, and cultural resources. Additional areas within Site 1b and Site 2 will be investigated in accordance with the New York Archaeological Council's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections, which has been endorsed by the NYS Office of Parks, Recreation, and Historic Preservation (OPRHP), and in compliance with Section 14.09 of New York State Parks, Recreation and Historic Preservation Law and/or Section 106 of the National Historic Preservation Act of 1966, if applicable. The results of already completed studies, and the results of the additional investigations that will be completed during this process, will be detailed in the DGEIS.

The previous studies have included a review of the NYS Office of Parks, Recreation, and Historic Preservation (OPRHP) website for information regarding the presence of state and nationally recognized historic or cultural sites or structures, or archaeologically sensitive areas, within or adjacent to the existing landfill property. The information obtained from this resource and from subsequent studies and coordination with the OPRHP will be documented in the DGEIS. Additionally, details of the Indian Nation Consultation Process, as conducted by the NYS Department of Environmental Conservation (DEC) in accordance with DEC Policy, *CP-42, Contact, Cooperation, and Consultation with Indian Nations*, that has taken place with the Oneida Indian Nation will also be documented.

Potential impacts to properties and sites located on the State and National Historic Registers and those of cultural and archaeological significance will be included in the DGEIS, along with potential mitigative measures that may be incorporated into this project.

3.2 Geology and Soils

ARE Park construction and the installation of private industries and businesses may involve excavating and moving quantities of soil on and around the site. Given that Sites 1a and 1b have been previously approved for use as soil borrow areas, potential impacts that the ARE Park project may have on soil and land resources will focus on Site 2. Potential soil mining activities may take place on Site 2 as well.

Issues to be addressed in the DGEIS include potential impacts to existing topography, soil resources, and future uses of the land resources. Construction activities, if not mitigated, may cause erosion which may, in turn, cause siltation of adjacent stream banks and wetland areas. The DGEIS will address temporary

and permanent management options that could be employed as mitigation measures to prevent and minimize the potential erosion of soils. The proposed project will remain compliant with all New York State Stormwater Regulations during site construction and the long-term management of the site.

Previous hydrogeologic studies have been undertaken at the proposed ARE Park site and adjacent areas. Information from these studies, from the Madison County Soil Survey which was completed by the Soil Conservation Service and the Cornell University Agricultural Experiment Station in 1981, and from the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic (SSURGO) database will be used to characterize the existing geology and soils of the site and proposed utility line corridors.

3.3 Water Resources

This project has the potential to impact both surface and groundwater resources. Wetland locations were identified along portions of the potential utility corridors and within the proposed limits of Site 1b. No wetland locations were identified within the limits of Site 1a. Future wetland delineations will be completed within Site 2, and along utility corridor segments under consideration that have not previously been subject to such delineations, to determine the presence or absence of wetlands in that area. This delineation effort will be completed in accordance with the U.S. Army Corps of Engineer's 1987 Wetland Delineation Manual and the North Central/Northeast Regional Supplement to the 1987 Manual. Previously identified wetland locations are potentially under the jurisdiction of the U.S. Army Corps of Engineers (USACE); no wetland locations were identified as being under the jurisdiction of the New York State Department of Environmental Conservation.

Multiple water resources are located adjacent to Sites 1a, 1b, 2 and within the proposed utility corridors. Cowaselon Creek flows north along the eastern boundary of Site 2. Limestone Creek, a tributary of Clockville Creek, flows northeast between the south limits of Sites 1a and 1b and the Madison County Landfill Facility. Additional locations of mapped streams may be crossed depending on the selected water and sewer pipeline routes and the selected water and sewer system alternatives.

The DGEIS will assess potential temporary and permanent impacts that may occur as a result of the ARE Park construction and utility line extensions. Potential impacts that the proposed project may have on groundwater resources in the area will also be identified and reasonable mitigation measures proposed, if necessary. If permanent impacts to wetland areas are likely to occur, and total greater than 0.1-acres, suitable mitigation measures, in the form of compensatory wetland mitigation, will be proposed in the DGEIS.

Proposed developments within the ARE Park project area will also require State Pollution Discharge Elimination System (SPDES) Permits from the NYSDEC to discharge water to stormwater control structures, as necessary to comply with NYS Stormwater regulations. Stormwater management measures will be developed in accordance with current SPDES regulations to mitigate impacts associated with runoff and to maintain compliance with the SPDES regulatory permit program standards. It is anticipated that temporary stormwater management and erosion and sediment control (ESC) measures will be required during the construction of individual facilities and that permanent measures will be required for the long term post-construction management of the ARE Park.

3.4 Ecology

The predominant vegetative cover types within the proposed ARE Park Sites consist of meadow/brushland (abandoned agricultural fields), mixed forestlands, and previously disturbed soils/un-vegetated earth. Sites 1a and 1b have been previously approved to be used as soil borrow areas in support of the County's adjacent landfill facility. Properties adjacent to the proposed water and sewer mains represent similar vegetative cover types, with the majority of land use in the area actively or historically associated with agricultural operations and facilities.

Research will be conducted to gather current and historic records of threatened, endangered, rare, candidate, and special concern species under state and federal protection that are located within Madison County, and more specifically, those with known populations within the Town of Lincoln and adjacent areas. Protected critical habitat locations would also be noted. Sources used to compile this information will include the U.S. Fish and Wildlife Service's (USFWS) Cortland Field Office website, the NYSDEC's Natural Heritage Program, and the NYSDEC's Nature Explorer web program.

Initial field investigations have been completed within Sites 1a and 1b and along portions of the proposed water and sewer corridors to determine the potential for any protected species populations to inhabit areas of the proposed project. Habitat assessment field investigations will be completed for Site 2 in the near future to determine whether any rare plant or animal species, ecologically sensitive areas, or uncommon assemblages of natural communities are located within this area of the proposed project. Results from all field investigations will be included in the DGEIS. Potential impacts that the

construction and management of the ARE Park may have on protected and unprotected plant and animal species, and their associated suitable habitat areas, if identified, will also be addressed in the DGEIS.

3.5 Land Use and Community Character

Development of the proposed ARE Park will transform existing undeveloped land, and land that will be mined of soil, into areas of active industrial and commercial businesses. Potential impacts to Sites 1a and 1b have already been reviewed and approved as part of the permitted soil borrow plan for the County's landfill facility. Therefore, the inclusion of potential changes in land use, community character, and community services in the DGEIS will focus on the potential utility corridors and ARE Park Site 2. Impacts associated with removing a portion of these lands from an existing mapped agricultural district within Site 2 will also be examined.

Potential mitigation measures to minimize impacts to the local community and community services will be described in the DGEIS. Open space and recreational activity opportunities that would be lost or limited by the development of the ARE Park will be detailed in the DGEIS. The significance of impacts to these areas will be determined and addressed.

3.6 Visual Resources

From the perspective of visual resources, the proposed development of the ARE Park will introduce industrial and commercial buildings into an area that is adjacent to a closed and operational landfill facility, which is located in a rural portion of the Town of Lincoln. A handful of homesteads and private properties are located adjacent to the proposed project sites. Properties adjacent to the proposed utility corridors are not anticipated to be visually impacted due to the

underground installation of the water and sewer mains. Many areas surrounding Sites 1a and 1b and Site 2 of the ARE Park, and a few areas included within the project limits, most notably the eastern portion of Site 2, offer steep grades and rolling hills. This terrain, and the soil mining proposed to be undertaken prior to much of the ARE Park's development, will likely block some of the visibility of the ARE Park from certain surrounding vantage points.

Potential visual impacts of the proposed project will be assessed through a viewshed analysis and the development of computer assisted visual simulations from key vantage points to illustrate changes to the visual setting that would result from the conceptual development of the ARE Park. A conceptual maximum design height will be used to ascertain the visual impacts from the potential construction of multiple buildings and facilities at the ARE Park. If views of important resources are impacted by the proposed project, or identified sensitive receptors are visually impacted, appropriate mitigative measures will be proposed to eliminate or reduce these visual impairments. These potential mitigation measures will be included in the DGEIS.

3.7 Air Quality

Information available from EPA, DEC and NYSDOT will be reviewed to obtain information regarding existing air quality conditions and to determine if National Ambient Air Quality Standards (NAAQS) are being met in the vicinity of the proposed ARE Park. The development of the ARE Park has the potential to increase the amount of dust in the air, particularly during construction activities, and also has the potential to increase air emissions due to truck traffic and facility emissions. A hypothetical ARE Park development scenario will be described in the DGEIS that will provide the basis for an assessment of potential air impacts and mitigation measures.

3.8 Traffic

Currently, access points to the ARE Park Sites 1a and 1b and Site 2 are proposed along Tuttle Road and Buyea Road. Existing traffic conditions will be determined by utilizing existing information on traffic that can be obtained from NYSDOT, the Madison County Highway Department, and the Town of Lincoln. Additional information regarding existing traffic conditions will be obtained through the use of automated traffic counters that will be placed on Tuttle Road and Buyea Road for at least a one week period.

A Level of Service traffic analysis will be prepared for Tuttle Road and Buyea Road at the proposed access points to the ARE Park. A hypothetical set of future traffic data related to potential development of the ARE Park will be utilized in this Level of Service analysis. Potential mitigation measures will be described for any significant increases in traffic that may be identified through the Level of Service analysis.

3.9 Noise

Background noise levels will be obtained at ARE Park Sites 1a and 1b and Site 2 utilizing noise metering equipment. An assessment of potential noise impacts related to future development of the ARE Park will be undertaken based on a hypothetical development scenario for the ARE Park. This noise analysis will be conducted to determine potential impacts to properties adjacent to ARE Park Sites 1a and 1b and Site 2. This analysis will use noise levels commonly associated with the operation of construction equipment to determine short-term noise impacts. The analysis will also include an estimate of the long-term potential for noise impacts associated with a set of hypothetical ARE Park operation parameters. Measures that can be undertaken to mitigate potential off-site noise impacts will be described in the DGEIS.

4.0 Reasonable Project Alternatives

An analysis of alternatives will be included in the DGEIS to investigate other options associated with the conceptual design and location of the proposed ARE Park. The alternatives analysis of the DGEIS will discuss the reasonable range of alternatives to the project that would achieve the same objective as the current project proposal. This analysis will include different ARE Park site configurations, different utility alternatives to provide water and sewer to the site, a “no action” alternative, and a discussion regarding alternative sites for development of the ARE Park. The alternatives analysis that will be included in the DGEIS will also include an evaluation of the need for the proposed ARE Park, including the economic benefits to the local community and the associated advantages that the project would provide on a County-wide level.

The following alternatives to the proposed project will be considered and discussed:

4.1 No-Action Alternative

The option of not developing the ARE Park and associated utility extension will be deemed the “no action” alternative. This option will include an examination of potential issues should the Park and associated utility extensions not be constructed. Potential issues or scenarios would include the continuation of hauling leachate from the adjacent landfill facility, the requirement to provide potable water to the landfill site, the end-use of the energy produced by the landfill gas-to-energy plant, and the loss of economic benefits to the County and surrounding community.

4.2 Alternative Site Locations

The general location of the ARE Park is based upon its proximity to the County’s green energy source (the landfill gas-to-energy facility) and the

availability of County-owned land that can be utilized for such a business park. Potential alternative locations within Madison County will be reviewed to determine if other potentially feasible or more attractive locations for the ARE Park are available for potential development.

4.3 Alternative ARE Park Configurations

The DGEIS will present a hypothetical, conceptual development area (i.e., a potential area of ground disturbance and site infrastructure/facility development) and operations parameters for the proposed ARE Park that will form the basis for the environmental impact assessments and studies that will be undertaken to complete the DGEIS. Alternative hypothetical configurations of the ARE Park site will be examined to determine the advantages and disadvantages that they present, in comparison to the hypothetical baseline configuration set forth in the DGEIS. Potential impact reductions that may result from modifications to the dimensions and size of the ARE Park Sites will be examined.

4.4 Alternative Utility Options

The ability to provide water and sewer services to the ARE Park Sites is an important component of this project. Currently, the ARE Park site does not have access to municipal water or sewer facilities; therefore, the County is planning to move forward with the extension of municipal water and sewer facilities to the ARE Park. As detailed in the project description in Section 1.0, various alternatives are being considered and evaluated as part of this project. The feasibility and general assessment of readily identifiable potential impacts associated with the utility alternatives will be examined in the DGEIS.

5.0 Additional DGEIS Contents

New York State's SEQRA regulations (6 NYCRR Part 617.9) establish what must be contained in a DGEIS. Additional components of the DGEIS are delineated below:

5.1 Summary of Proposed Action

The purpose of the action and the public need for the action will be described, including social and economic considerations. A site location map will be included to supplement this description. This section will include a brief description of the site history and the current project, a summary of project benefits, potentially significant adverse impacts, and alternatives to be considered.

5.2 Cumulative Impacts

This section will include a general evaluation of impacts associated with the potential development of the entire Site 1a, Site 1b, and Site 2 areas.

5.3 Unavoidable Adverse Impacts

Potentially significant adverse environmental impacts for which mitigation is either not available or not feasible will be described in this section of the DGEIS. The potential significance of these unavoidable adverse impacts will also be discussed.

5.4 Growth-Inducing Impacts

This section will examine potential effects that the development of the ARE Park may have on community growth, both residential and commercial.

5.5 Commitment of Resources

This section will examine the effects on those finite resources, such as land, that would be impacted by the proposed project. The level of availability of these resources surrounding the ARE Park and within the County will be addressed.

5.6 Energy Use and Conservation

This section of the DGEIS will examine the availability of green energy at the ARE Park site that could be utilized by ARE Park tenants. A description of how the proposed project will conserve energy will be provided, along with the benefits of green energy use.

5.7 References

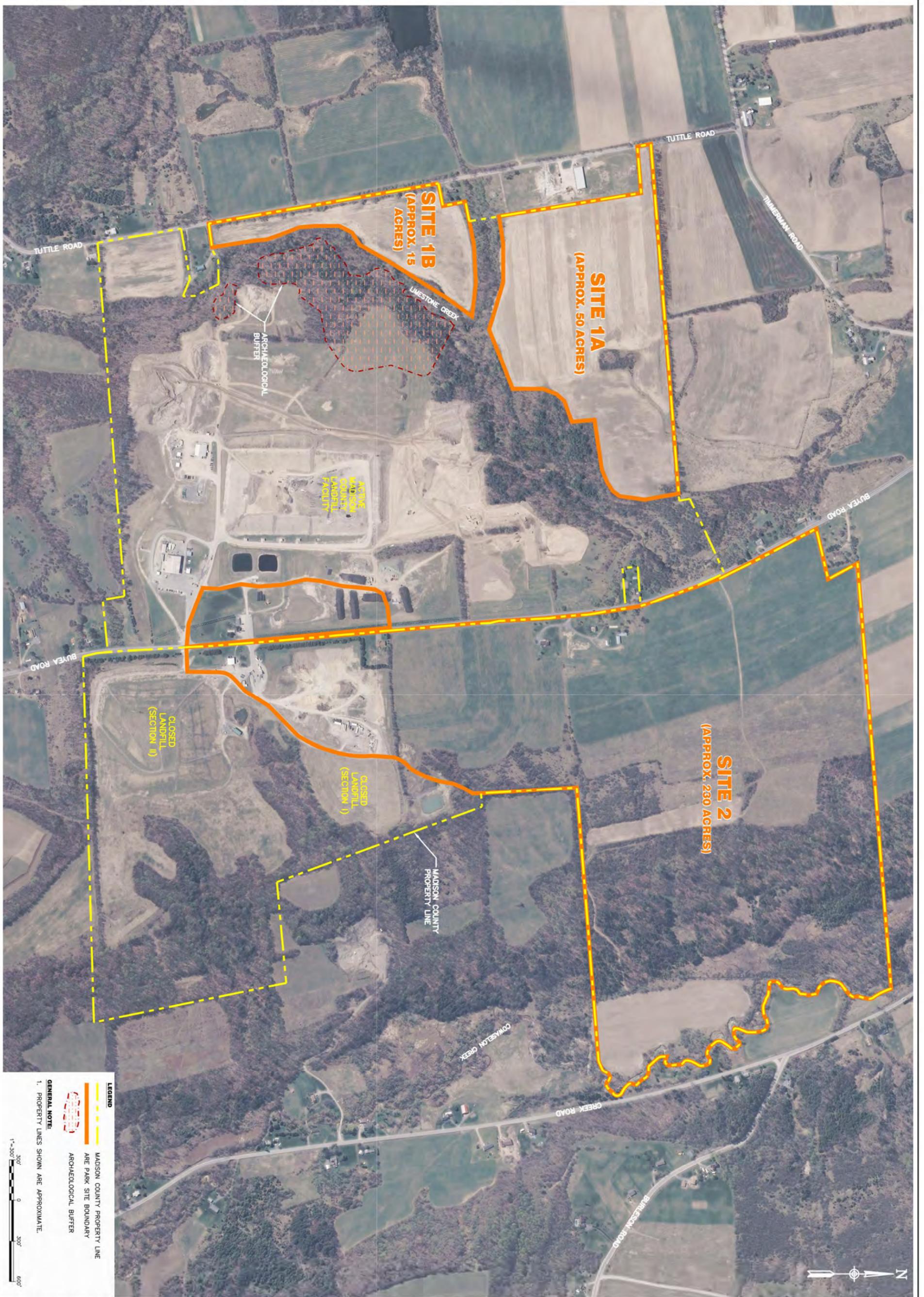
A bibliography of references utilized to support the analyses presented in the DGEIS will be included.

5.8 Preliminary List of DGEIS Appendices

- Final Scoping Document
- Applicable Correspondence
- Habitat Assessment Memorandum
- Wetland Delineation Reports
- Traffic Impact Level of Service Analysis
- Cultural Resources Investigations and Studies
- Visual Impact Assessment
- Noise Assessment

Figures

Figure 1
Site Location Map



LEGEND

- MADISON COUNTY PROPERTY LINE
- ARE PARK SITE BOUNDARY
- ARCHAEOLOGICAL BUFFER

GENERAL NOTE:

1. PROPERTY LINES SHOWN ARE APPROXIMATE.

1" = 300'

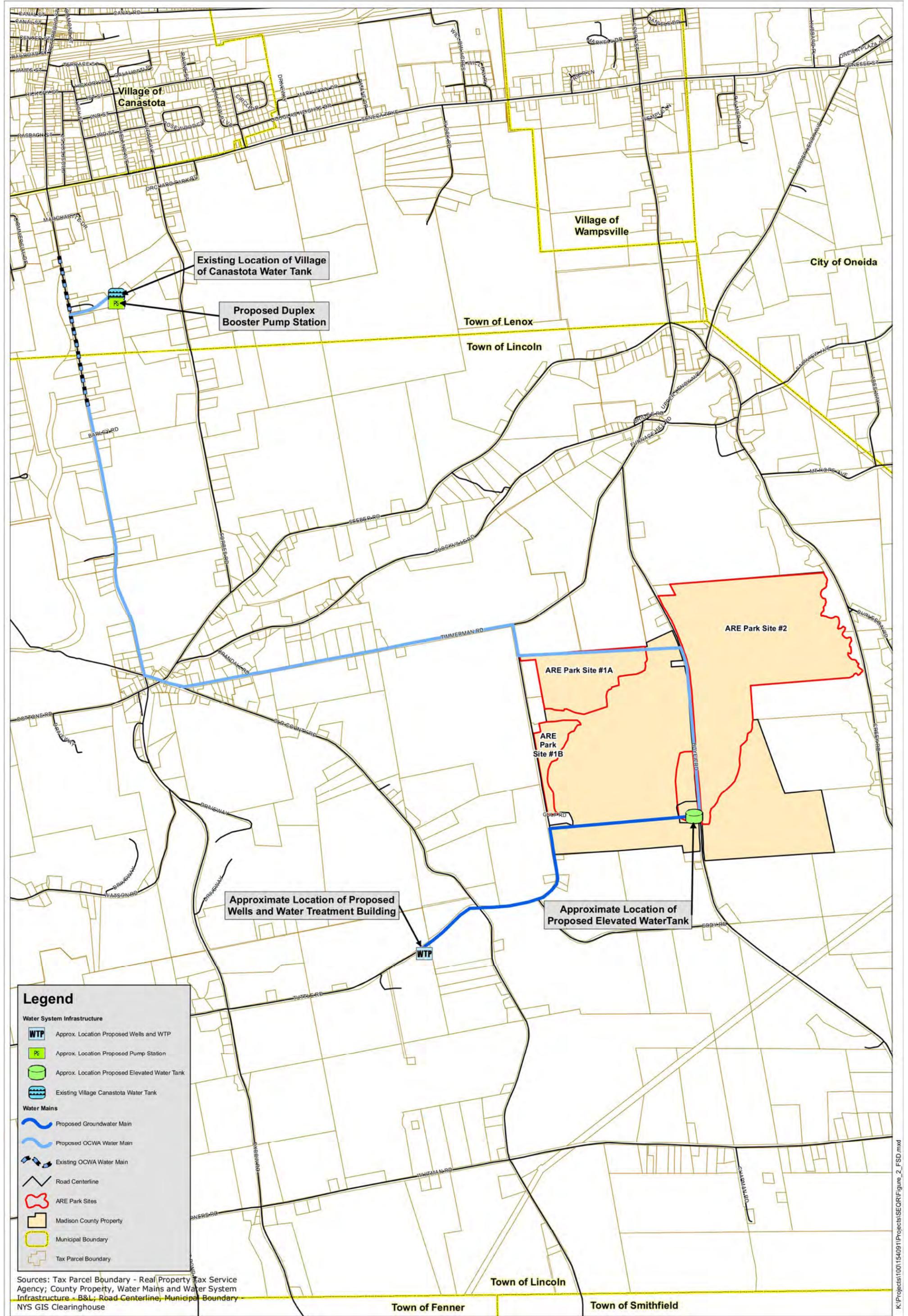
0 300' 600'

Barton
M&L
 Loguidice, P.C.

MADISON COUNTY ARE PARK		PROJECT SITE LOCATION PLAN		
TOWN OF LINCOLN		MADISON COUNTY, NEW YORK		
Date JANUARY, 2011	Scale 1" = 300'	Sheet Number 1	File Number 154,091,003	NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION DIVISION 2 OF THE NEW YORK STATE ENVIRONMENTAL LAW COMPLETED CONSTRUCTION Significant Construction Changes Are Shown By _____ Date _____ Cx'd _____ Date _____ REVISIONS

Figure 2

Water Service Alternatives



Legend

Water System Infrastructure

-  Approx. Location Proposed Wells and WTP
-  Approx. Location Proposed Pump Station
-  Approx. Location Proposed Elevated Water Tank
-  Existing Village Canastota Water Tank

Water Mains

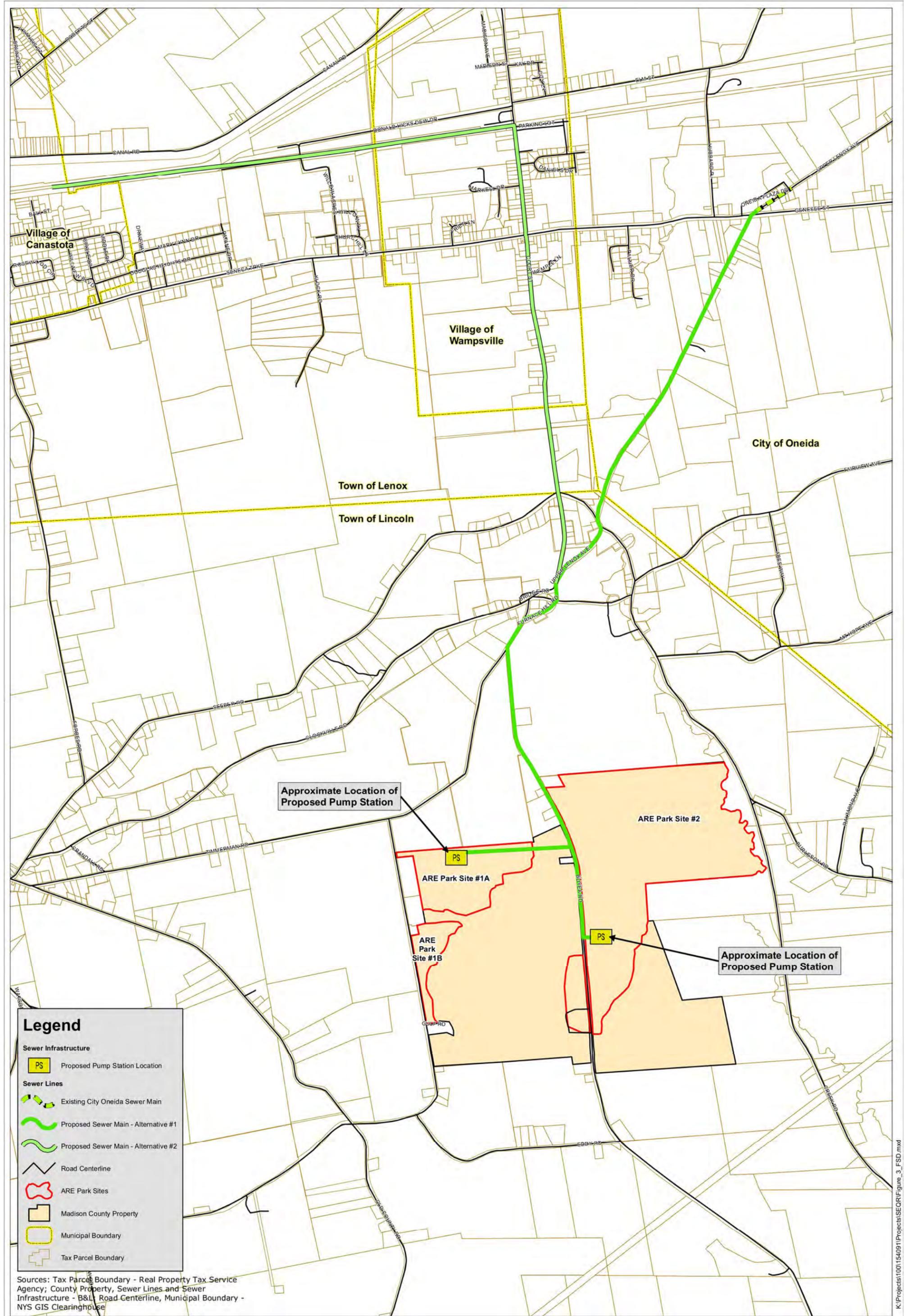
-  Proposed Groundwater Main
-  Proposed OCWA Water Main
-  Existing OCWA Water Main

-  Road Centerline
-  ARE Park Sites
-  Madison County Property
-  Municipal Boundary
-  Tax Parcel Boundary

Sources: Tax Parcel Boundary - Real Property Tax Service Agency; County Property, Water Mains and Water System Infrastructure - B&L; Road Centerline, Municipal Boundary - NYS GIS Clearinghouse

K:\Projects\100154091\Projects\SEOR\Figure_2_FSD.mxd

Figure 3
Sewer Service Alternatives



Legend

- Sewer Infrastructure**
- PS Proposed Pump Station Location
- Sewer Lines**
- Existing City Oneida Sewer Main
- Proposed Sewer Main - Alternative #1
- Proposed Sewer Main - Alternative #2
- Road Centerline
- ARE Park Sites
- Madison County Property
- Municipal Boundary
- Tax Parcel Boundary

Sources: Tax Parcel Boundary - Real Property Tax Service Agency; County Property, Sewer Lines and Sewer Infrastructure - B&L Road Centerline, Municipal Boundary - NYS GIS Clearinghouse

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Appendices

Appendix A

Notice of SEQRA Public Scoping Meeting

NOTICE OF STATE ENVIRONMENTAL QUALITY REVIEW ACT PUBLIC SCOPING MEETING

- Lead Agency:** Madison County
- Name of Action:** Madison County Agriculture and Renewable Energy (ARE) Business Park, proposed in the Town of Lincoln, Madison County, New York.
- Draft Scoping Document:** A Draft Scoping Document dated February 10, 2011 is available on-line for your review and comment at the following web address: www.madisoncounty.org. This Draft Scoping Document describes the issues and areas of environmental concern that are proposed to be addressed in a Draft Generic Environmental Impact Statement (DGEIS) for the proposed ARE Business Park.
- Purpose of Meeting:** To provide an opportunity for the public to identify specific issues and potential environmental impacts that should be addressed in the DGEIS.
- Meeting Time and Date:** 7:00 P.M. on March 7, 2011. The meeting will end at 8:00 P.M. if all speakers have finished commenting at that time.
- Meeting Location:** Madison County Office Building, 138 North Court Street, Wampsville, New York 13163. The meeting will take place in the Board of Supervisors' Chambers, located on the second floor.
- Conduct of Meeting:** The meeting is being held to receive public comments on specific issues or areas of concern relative to the proposed development of the ARE Business Park. Sign-up cards will be available at the meeting for any persons wishing to speak, and a stenographic record will be kept of the comments presented. The presiding officer will call speakers in turn. The meeting will not be a question and answer session, but is meant to provide as many people as possible with the opportunity to speak. If necessary, the presiding officer will set appropriate time limits. Anyone wishing to participate in this process may also submit written comments prior to the comment deadline.
- Comment Deadline:** Written comments regarding issues to be addressed in the DGEIS will be accepted until 1:00 P.M. on March 25, 2011. Written comments will be given the same consideration as any oral comments made at the public scoping meeting on March 7, 2011. Please submit written comments to the Madison County Planning Department, PO Box 606, North Court Street, Wampsville, New York 13163, Attention: Proposed ARE Business Park. Comments may also be submitted electronically by e-mail to planning@co.madison.ny.us; please insert "Proposed ARE Business Park" in the Subject line of the e-mail message.

No anonymous comments will be accepted during this public review process. Such comments will not be considered during the preparation of the Final Scoping Document or the DGEIS. **When submitting**

electronic or written comments, therefore, please include your name and mailing address with your submission.

Future Steps:

A Final Scoping Document is expected to be completed in April 2011, based on a full consideration of comments submitted on the Draft Scoping Document. Subsequently, the DGEIS will be prepared. The DGEIS will contain information regarding the development of the proposed Madison County ARE Business Park, potential environmental impacts, and measures that may be incorporated into the project to mitigate potential impacts. The DGEIS will be made available for public review and comment following its acceptance by the lead agency.

APPENDIX B

**Notice Advertised in the Environmental Notices Bulletin and
Legal Notice Published in the Oneida Daily Dispatch**

ENB - Region 7 Notices 2/23/2011

Positive Declaration and Public Scoping

Madison County - Madison County, as lead agency, has determined that the proposed Madison County Agriculture and Renewable Energy (ARE) Business Park may have a significant adverse impact on the environment and a Draft Environmental Impact Statement must be prepared. Written comments on the draft scope will be accepted until March 25, 2011. **A public scoping session will be held on March 7, 2011 at 7:00 p.m. at the Madison County Office Building, 2nd Floor, Supervisors' Chambers, 138 North Court St., Wampsville, NY 13163.** The draft scoping document is available at the Madison County Office Building, 2nd Floor, Supervisors' Chambers, 138 North Court St., Wampsville, NY 13163 and on line at: www.madisoncounty.org.

The action involves the designation and development of certain County-owned lands along Buyea Road and Tuttle Road for the development of an Agriculture and Renewable Energy (ARE) Business Park in the Town of Lincoln. The purpose of the proposed ARE Business Park is to provide an economically stimulating, environmentally sound and shovel-ready development area that will be beneficial to the surrounding community and that will provide an opportunity for future industrial and commercial facilities to utilize green initiatives in their business plans. The lands proposed for development of the ARE Business Park are generally comprised of permitted or planned soil borrow areas and buffer properties for the County's active solid waste disposal facility. The lands designated for development of the proposed ARE Business Park are located in two general areas: one proposed development area is on approximately 65 acres on the east side of Tuttle Road and the other proposed development area is on approximately 230 acres located on both sides of Buyea Road. The proposed ARE Business Park site does not currently have access to municipal water or sewer facilities. Therefore, the County is planning to move forward with the development of municipal water and sewer facilities to serve the ARE Business Park. Various options for water and sewer facilities will be evaluated, including but not limited to the possible extension of water and/or sewer pipelines from the ARE Business Park to existing public water and/or sewer systems. The project is located at 6663 Buyea Road in the Town of Lincoln, New York.

Contact: Scott Ingmire, Madison County, P.O. Box 606, 138 North Court St., Wampsville, NY 13163, Phone: (315) 366-2376, E-mail: scott.ingmire@co.madison.ny.us.

LEGAL NOTICE

Madison County will hold a public scoping meeting on March 7, 2011 at 7:30 PM with regard to the contents of a Draft Generic Environmental Impact Statement that will be prepared for the proposed Agriculture and Renewable Energy Business Park in the Town of Lincoln. This public scoping meeting will be held in the Supervisors Chambers on the 2nd floor of the Madison County Office Building located at 138 N. Court Street in Wampsville, N.Y. A Draft Scoping Document is available for public review at the County Planning Department's office in the County Office Building or may be obtained on-line at www.madisoncounty.org. For more information contact the Madison County Planning Department by mail at P.O. Box 606, N. Court St., Wampsville, NY 13163, by e-mail: planning@madison.county.ny.us or by phone at 315-366-2376. Written comments will also be accepted by the Planning Department until March 25, 2011.

STATE OF

Madison County

Karen A

County, being duly sworn

Manager of:

THE ONEIDA

which is a public newspaper, and is, and for the last six months and more has been, printed and published daily except Sundays, in the City of Oneida, in said County of Madison.

That a notice, of which the printed slip hereto attached is a copy, has been printed and published in said newspaper.

One week(s) successively, Once in each week, commencing on the 18th day of February 2011 and ending on the 18th day of February 2011

Karen Alwood

Subscribed and sworn to before me, this

18th day of February 2011

Michelle Loosman

(Notary Public)

MICHELLE L. LOOSMAN
NOTARY PUBLIC STATE OF NEW YORK
APPOINTED IN MADISON COUNTY
MY COMMISSION EXPIRES 5/31/14

Form BP001

THE ONEIDA DAILY DISPATCH

130 BROAD STREET
ONEIDA, NEW YORK 13421
PHONE (315) 363-5100

MADISON COUNTY PLANNING DEPT
PO BOX 606
WAMPSSVILLE, NY 13163

LEGAL ADVERTISING

INVOICE NO.

PAYMENT DUE UPON RECEIPT
315-366-2830 C2

ONEIDA PRINTSHOP ONEIDA, NY

Appendix C

OCWA Written Comment Received During Public Scoping



Central New York's Water Authority
www.ocwa.org

200 NORTHERN CONCOURSE
P.O. BOX 9
SYRACUSE, NY 13211-0009

PHONE: (315) 455-7061
FAX: (315) 455-6649

March 14, 2011

Mr. Scott Ingmire
Madison County Planning Department
P.O. Box 606
Wampsville, New York 13163

Re: DGEIS Scope
Madison County ARE Park
OCWA File A5004295

Dear Mr. Ingmire:

Thank you for including the Onondaga County Water Authority in the distribution of the Draft Scoping Document for the SEQR process regarding the Madison County Agricultural and Renewable Energy Park. One of the options being considered for water service for the proposed ARE Park is a connection to our existing facilities in the Canastota area. This option is discussed in the Draft Scoping Document which indicates that it will be evaluated further along with other options. We have previously been contacted by the County and the Town of Lincoln regarding this option and other potential water districts in the Town. As such, we have conveyed concerns regarding several operational issues with such a proposed system that will need further evaluation.

These issues include:

- Estimated water usage at the ARE Park verses our available capacity
- Impact on existing customers in areas already served by OCWA
- System pressures
- Tank size, watermain size, pump station(s) capacity
- Water quality issues as the proposed facilities are at the far end of our system
- Service to potential customers along the transmission route

These issues and other water system considerations need to be fully evaluated through a detailed engineering study, which we believe should be completed prior to completion of the SEQR process.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Geoffrey G. Miller'.

Geoffrey G. Miller, P.E., BCEE
Executive Engineer

cc: Michael Parker, Barton & Loguidice Engineers

Appendix C
Correspondence

Agricultural and Renewable Energy Park

**Town of Lincoln
Madison County, New York**

**Appendix C
Correspondence**

November 2011

Agricultural and Renewable Energy Park

Town of Lincoln
Madison County, New York

Appendix C
Correspondence

November 2011

Prepared For:

Madison County
County Office Building
P.O. Box 635
Wampsville, New York 13163

Prepared By:

Barton & Loguidice, P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects
290 Elwood Davis Road
Box 3107
Syracuse, New York 13220



Central New York's Water Authority
www.ocwa.org

200 NORTHERN CONCOURSE
P.O. BOX 9
SYRACUSE, NY 13211-0009

PHONE: (315) 455-7061
FAX: (315) 455-6649

March 14, 2011

Mr. Scott Ingmire
Madison County Planning Department
P.O. Box 606
Wampsville, New York 13163

Re: DGEIS Scope
Madison County ARE Park
OCWA File A5004295

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- Service to potential customers along the transmission route

These issues and other water system considerations need to be fully evaluated through a detailed engineering study, which we believe should be completed prior to completion of the SEQR process.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Geoffrey G. Miller'.

Geoffrey G. Miller, P.E., BCEE
Executive Engineer

cc: Michael Parker, Barton & Loguidice Engineers

RECEIVED

JUN 2 2011

BARTON & LOGUIDICE



STATE OF NEW YORK
DEPARTMENT OF AGRICULTURE AND MARKETS
10B Airline Drive
Albany, New York 12235

Division of Agricultural Protection
and Development Services
518-457-7076
Fax. 518-457-2716

May 26, 2011

CENTRAL FILES - SCANNING

FROM MPP DATE 6/2/2011

PROJECT 154.091 TR TLH

XOF

4 Enviro

JCC

X

RECEIVER
KEV, JAR,

REC

Mr. Kipp Hicks
Executive Director
Madison County IDA
3215 Seneca Turnpike
Canastota, NY 13032

**Re: Certification - Final Notice of Intent Madison County
Agricultural District #2 - Town of Lincoln/City of Oneida-
Agricultural and Renewable Energy (ARE) Park -
Construction of Water and Sewer Mains**

Dear Mr. Hicks:

I have reviewed the certification submitted by Madison County IDA on behalf of the Town of Lincoln/City of Oneida in connection with the advance of public funds for the construction of water and sewer mains within the Town of Lincoln and City of Oneida for the Madison County Agriculture and Renewable Energy (ARE) Park, Madison County Agricultural District #2.

The certification meets the requirements of Section 305(4)(g). Therefore, the Madison County IDA has completed its filing obligations under Section 305(4) for the proposed action. Please be advised that the Department will proceed to close its files in this matter.

Sincerely,

ROBERT SOMERS, Ph.D.
Chief, Agricultural Protection Unit

cc: Steven Durfee, Chair, Madison County AFPB
Michael P. Parker, I.E., Barton & Loguidice, P.E. ✓
David Miller, P.E., Rural Utilities Director, USDA Rural Development
NYS EFC, NYDWSRF
Danielle Cordier, Esq., Dept. of Agriculture & Markets

File AP09/009-NOI



United States Department of the Interior

FISH AND WILDLIFE SERVICE



New York Field Office
3817 Luker Road, Cortland, NY 13045
Phone: (607) 753-9334
Fax: (607) 753-9699

Long Island Field Office
3 Old Barto Rd., Brookhaven, NY 11719
Phone: (631) 776-1401
Fax: (631) 776-1405

Endangered Species Act List Request Response Cover Sheet

This cover sheet is provided in response to a search of our website* for information regarding the potential presence of species under jurisdiction of the U.S. Fish and Wildlife Service (Service) within a proposed project area.

Attached is a copy of the New York State County List of Threatened, Endangered, and Candidate Species for the appropriate county(ies). The database that we use to respond to list requests was developed primarily to assist Federal agencies that are consulting with us under Section 7(a)(2) of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). Our lists include all Federally-listed, proposed, and candidate species known to occur, as well as those likely to occur, in specific counties.

The attached information is designed to assist project sponsors or applicants through the process of determining whether a Federally-listed, proposed, or candidate species and/or “critical habitat” may occur within their proposed project area and when it is appropriate to contact our offices for additional coordination or consultation. You may be aware that our offices have provided much of this information in the past in project-specific letters. However, due to increasing project review workloads and decreasing staff, we are now providing as much information as possible through our website. We encourage anyone requesting species list information to print out all materials used in any analyses of effects on listed, proposed, or candidate species.

The Service routinely updates this database as species are proposed, listed, and delisted, or as we obtain new biological information or specific presence/absence information for listed species. If project proponents coordinate with the Service to address proposed and candidate species in early stages of planning, this should not be a problem if these species are eventually listed. However, we recommend that both project proponents and reviewing agencies retrieve from our online database an *updated* list every 90 days to append to this document to ensure that listed species presence/absence information for the proposed project is *current*.

Reminder: Section 9 of the ESA prohibits unauthorized taking** of listed species and applies to Federal and non-Federal activities. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to “take***” any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for “take**,” or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the Service, to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species.

For instance, work in certain waters of the United States, including wetlands and streams, may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), the Service may concur, with or without recommending additional permit conditions, or recommend denial of the permit depending upon potential adverse impacts on fish and wildlife resources associated with project construction or implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s).*

For additional information on fish and wildlife resources or State-listed species, we suggest contacting the appropriate New York State Department of Environmental Conservation regional office(s) and the New York Natural Heritage Program Information Services.*

Since wetlands, ponds, streams, or open or sheltered coastal waters may be present in the project area, it may be helpful to utilize the National Wetlands Inventory (NWI) maps as an initial screening tool. However, they may or may not be available for the project area. Please note that while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Online information on the NWI program and digital data can be downloaded from Wetlands Mapper, http://wetlands.fws.gov/mapper_tool.htm.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. After reviewing our website and following the steps outlined, we encourage both project proponents and reviewing agencies to contact our office to determine whether an accurate determination of species impacts has been made. If there are any questions about our county lists or agency or project proponent responsibilities under the ESA, please contact the New York or Long Island Field Office Endangered Species Program at the numbers listed above.

Attachment (county list of species)

*Additional information referred to above may be found on our website at:
<http://www.fws.gov/northeast/nyfo/es/section7.htm>

** Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to *take* (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.



Madison County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
American hart's-tongue fern	<i>Asplenium scolopendrium</i> var. <i>americanum</i>	T
Chittenango ovate amber snail (Chittenango Creek Watershed)	<i>Novisuccinea chittenangoensis</i>	T
Indiana bat (S)	<i>Myotis sodalis</i>	E

Status Codes: E=Endangered, T=Threatened, P=Proposed, C=Candidate, D=Delisted.

W=Winter S=Summer

Information current as of: 11/30/2011

[Print Species List](#)

New York State Department of Environmental Conservation

Division of Environmental Permits, Region 7

1285 Fisher Avenue, Cortland, New York 13045-1090

Phone: (607) 753-3095, ext. 294 • Fax: (607) 753-8532

Website: www.dec.ny.gov



Joe Martens
Commissioner

July 15, 2011

Frances Reese, Sr. Project Environmental Scientist
Barton & Loguidice, P.C.
1 South Washington Street, Suite 520
Rochester, New York 14614

**RE: Agricultural and Renewable Energy Park
Proposed Sites 1A and 1B off Tuttle Road and Site 2 off Buyea Road
Located in the Town of Lincoln, County of Madison, New York
Barton & Loguidice Project No 154.091.003**

Dear Mr. Reese:

We are in receipt of your request for information on known threatened/endangered species and significant habitats known to exist on the above referenced sites. Jurisdictional review of these sites, in NYSDEC's GIS system, indicates that all three project sites are located within an identified archeologically-sensitive area.

For information on archeological/historical/cultural resources contact the New York State Office of Parks Recreation and Historic Preservation (OPRHP) at (518) 237-8643 or on their web site at <http://nysparks.state.ny.us/shpo/archeology/> select Online Tools, Enter GIS.

For information on plants or animals of concern in the vicinity of the project you can contact NYSDEC-DFWMR, NY Natural Heritage Program-Information Services, 625 Broadway, 5th Floor, Albany, NY 12233-4757 or on the web at: <http://www.dec.ny.gov/animals/31181.html>.

For future projects you may obtain much of this information from the NYSDEC website at: <http://www.dec.ny.gov/imsmaps/ERM> and enter the Environmental Resource Mapper to identify natural resources and environmental features that are state protected or of conservation concern. ERM is part of the NYSDEC Mapping Gateway page which has links to other mapping and data: <http://www.dec.ny.gov/pubs/212.html>.

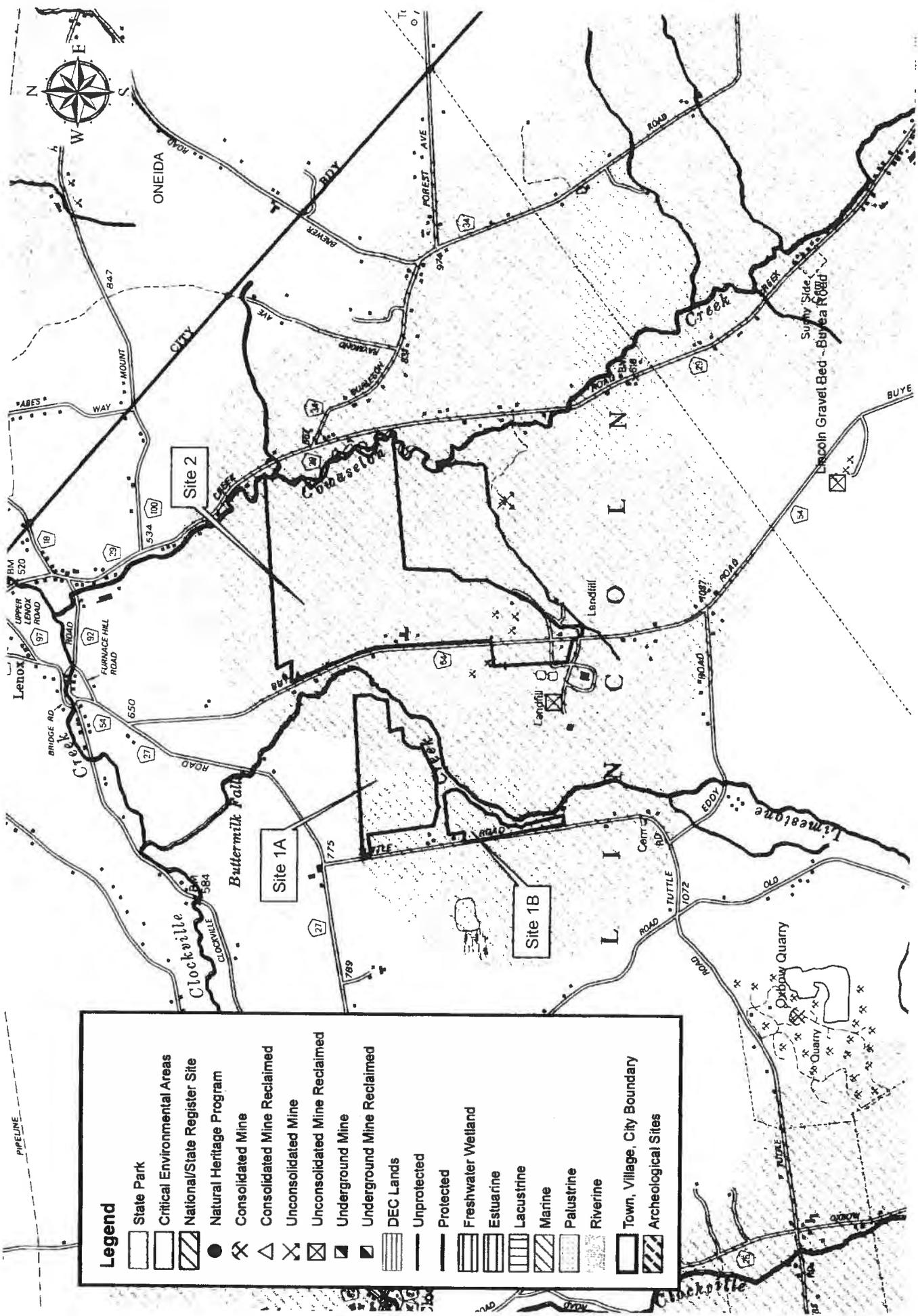
In addition, there is the NYS GIS Clearinghouse. Many data sets from various agencies are available there for download and may be utilized with ArcMap or other GIS programs: <http://www.nysgis.state.ny.us/gisdata/index.cfm>.

If you have questions, please contact me at (607) 753-3095, ext. 294.

Sincerely,

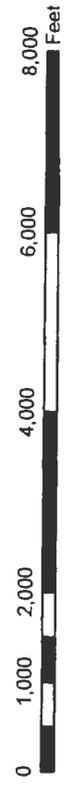
Teri Phelps, Agency Program Aide
Division of Environmental Permits-Cortland Office
taphleps@gw.dec.state.ny.us

Enclosure – NYSDEC GIS map



Legend	
[Symbol]	State Park
[Symbol]	Critical Environmental Areas
[Symbol]	National/State Register Site
[Symbol]	Natural Heritage Program
[Symbol]	Consolidated Mine
[Symbol]	Consolidated Mine Reclaimed
[Symbol]	Unconsolidated Mine
[Symbol]	Unconsolidated Mine Reclaimed
[Symbol]	Underground Mine
[Symbol]	Underground Mine Reclaimed
[Symbol]	DEC Lands
[Symbol]	Unprotected
[Symbol]	Protected
[Symbol]	Freshwater Wetland
[Symbol]	Estuarine
[Symbol]	Lacustrine
[Symbol]	Marine
[Symbol]	Palustrine
[Symbol]	Riverine
[Symbol]	Town, Village, City Boundary
[Symbol]	Archeological Sites

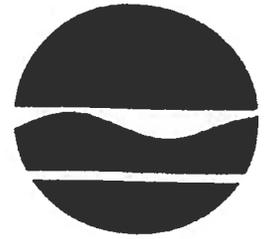
1 inch = 2,000 feet



This map is intended for informational purposes only. A field delineation should be conducted for more precise locations. For more information on National Wetlands Inventory call US Army Corps of Engineers at 315.722.6000

Prepared by: Teri Phelps
 NYSDEC, 1285 Fisher Ave.
 Cortland, NY 13045-1090
 Tel: 607-753-3095 Fax: 607-753-8532
 Date Created: 7/15/2011

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov



Joe Martens
Commissioner

July 13, 2011

Frances Reese
Barton & Loguidice
One South Washington St, Suite 520
Rochester, NY 14614

Dear Ms. Reese:

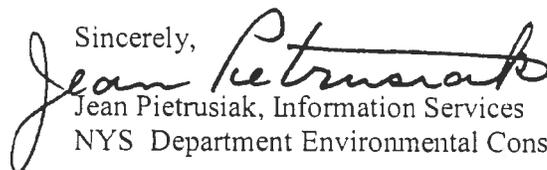
In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed new construction – Agricultural and Renewable Energy Park – 305 Acres, area as indicated on the map you provided, located in the Town of Lincoln, Madison County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.lt ml.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Jean Pietrusiak, Information Services
NYS Department Environmental Conservation

Enc.
cc: Region 7

#668

Natural Heritage Report on Rare Species and Ecological Communities

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935



HISTORICAL RECORDS

The following plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier, or there is uncertainty regarding their continued presence.

There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown and therefore location maps are generally not provided.

If appropriate habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there.

Natural Heritage Report on Rare Species and Ecological Communities



VASCULAR PLANTS

Carex styloflexa

Bent Sedge

NY Legal Status: Endangered

Federal Listing:

Last Report: 1935-06-05

County: Madison

Town: Lincoln

Location: Clockville

Directions: Specimen label: Thin soil on limestone ledges in woods near Clockville.

General Quality and Habitat: Thin soil on limestone ledges in woods.

NYS Rank: S1 - Critically imperiled

Global Rank: G4G5 - Apparently secure

EO Rank: Historical, no recent information

Office Use
2640

1 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Appendix D
Habitat Assessment Memorandum

Agricultural and Renewable Energy Park

**Town of Lincoln
Madison County, New York**

**Appendix D
Habitat Assessment**

November 2011

Agricultural and Renewable Energy Park

Town of Lincoln
Madison County, New York

Appendix D
Habitat Assessment

November 2011

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1.0 Introduction

A habitat assessment was conducted for the proposed construction of the Madison County Agriculture and Renewable Energy Park (ARE Park) located in a rural area in the Town of Lincoln, Madison County, New York. The purpose of this habitat assessment was to determine existing vegetation cover types, obtain information on reported current and historic records of threatened, endangered, rare, candidate, and special concern species under state and federal protection that are located within Madison County, and more specifically, those with known populations within the Town of Lincoln and adjacent areas. Protected critical habitat locations are also noted. Sources used to compile this information include the U.S. Fish and Wildlife Service's (USFWS) Cortland Field Office website, the NYSDEC's Natural Heritage Program, and the NYSDEC's Nature Explorer web program.

Information obtained from these inquiries and site investigations will be used to assess potential impacts to threatened and endangered species, and changes in land use and vegetation cover types.

2.0 Existing Conditions

The proposed project is located adjacent to the existing Madison County Landfill in the Town of Lincoln, Madison County, New York. The area proposed for development consists of three sites. Site 1A consists of approximately 50 acres of land located along the east side of Tuttle Road. The site is predominantly in agricultural use, but surface soil mining has begun at the top of the slope, adjacent to the Lincoln Town Highway Garage. Site 1B consists of approximately 15 acres of land, located immediately south of Site 1A. This site is in agricultural use. These sites are both located on the west side of Limestone Creek, a tributary of Clockville Creek.

Site 2 consists of approximately 230 acres of land, with approximately 12 acres of land located on the west side of Buyea Road adjacent to the Madison County Landfill, and an additional 218 acres located on the east side of Buyea Road. The 12 acre area west of Buyea Road has been previously used as part of the Madison County Landfill operations, and currently supports some landfill related activities. The acreage on the east side of Buyea Road includes agricultural lands, scattered dwellings and outbuildings, and some recycling areas used by the Madison County Landfill. Site 2 includes the steep sided, forested valley and the flood plain and stream channel of Cowaselon Creek, a major tributary of Oneida Lake.

According to Bailey's *Ecoregions of the Conterminous United States*¹, the project site is located within the Northern Glaciated Allegheny Plateau Section of the Laurentian Mixed Forest Province, Warm Continental Division, Humid Temperate Domain. The Northern Glaciated Allegheny Plateau Section is described as a maturely dissected glaciated plateau of rounded ridges and moderate relief with areas of irregular

¹ McNab, W.H., Cleland, D.T., Freeouf, J.A., Keys, J.E., Jr., Nowacki, G.J., Carpenter, C.A., comps. 2005. Description of ecological subregions: sections of the conterminous United States [CD-ROM]. Washington, DC: U.S. Department of Agriculture, Forest Service, 80 p.

topography with high hills and steep valleys. Forest vegetation consists of maple-beech-birch, oak-hickory, and aspen-birch cover types.

The predominant cover types within the ARE Park development areas consist of agricultural fields, meadow-brushland, and previously disturbed/unvegetated soil areas.

Soil from portions of Sites 1A and 1B will be mined for use as daily cover. As this activity proceeds, the percentage of land surface allotted to agricultural use will decrease as the amount of unvegetated or disturbed soil area increases.

Hedgerow species between cultivated fields include black cherry (*Prunus serotina*), sugar maple (*Acer saccharum*), hawthorns (*Crataegus* sp.) and other northern hardwoods. Canopy species along the creek channels consist of American elm (*Ulmus Americana*), green ash (*Fraxinus pennsylvanica*), American beech (*Fagus grandifolia*), hemlock (*Tsuga canadensis*), yellow birch (*Betula allegheniensis*), Eastern hophornbeam (*Ostrya virginiana*), and sugar maple (*Acer saccharum*). Understory species consist generally of tartarian and Morrow's honeysuckle (*Lonicera tatarica* and *L. morrowii*).

3.0 Threatened and Endangered Species

3.1 Federally Listed or Proposed Species

The U.S. Fish and Wildlife Service identified American hart's tongue fern (*Asplenium scolopendrium* var. *americanum*) and Chittenango amber ovate snail (*Succinea chittenangoensis*) as Federally listed Threatened species in Madison County. The Indiana Bat (*Myotis sodalis*) is a Federally listed Endangered species that is present in Madison County as a summer resident².

The following habitat information is summarized from a variety of sources³. Hart's tongue fern has specific substrate and microhabitat requirements and occurs in small, widely-separated population groups. The species is typically found on or near dolomitic limestone (a type of limestone high in magnesium), where it typically occurs in moist crevices, on mossy rock outcrops, or in sinkholes or blowholes of limestone caves. Most populations are associated with cool, well-shaded, moist microclimates; many occur in shady hardwood woodlands where sun flecks provide sufficient sunlight and where moisture is adequate. The species is associated at many sites with walking fern (*Asplenium rhizophyllum*), northern holly-fern (*Polystichum lonchitis*) and moist moss mats, especially those with rose moss (*Rhodobryum roseum*). Extant New York stations occur in conjunction with a dolomitic limestone formation known as the Lower Helderberg. Plants are typically found in or along deep ravines and "pit-hole lakes" or "plunge-basins," where limestone cliffs surround the water. New York populations are typically found rooted in black humus beneath beech,

² U.S. Fish and Wildlife Service, *Federally Listed Endangered Species and Candidate Species in New York (by County)*, updated June 1, 2011, <http://www.fws.gov/northeast/nyfo/es/ColistCurrent.pdf>

³ NatureServe. 2011. *NatureServe Explorer: An online encyclopedia of life* [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: August 11, 2011). Comprehensive Report Species – *Asplenium scolopendrium* var. *americanum*. <http://www.natureserve.org>

maple, hemlock, and yellow birch forests well below overhanging ledges on east and north-facing slopes or in similar shaded areas.

The Chittenango amber ovate snail exists in only one location near Chittenango Falls, Madison County, New York⁴. The species requires a substrate rich in calcium carbonate and appears to prefer green vegetation such as the various mosses, liverworts, and other low herbaceous vegetation found within the spray zone adjacent to the falls. While the project site includes two streams with dolomitic carbonate type bedrock, neither stream includes a waterfall spray zone within the project footprint, which appears to be a habitat requirement.

Indiana bats typically hibernate in mines or caves during the winter, and roost under bark or in tree crevices in the spring, summer and fall. Suitable summer roosting habitat is characterized by trees (dead, dying or live) or snags with exfoliating or defoliating bark, or containing cracks or crevices that could potentially be used by Indiana bats as a roost. The minimum diameter of roost trees is 2.5 inches for males and 4.3 inches for females. Maternity colonies generally use trees greater than or equal to 9 inches diameter at breast height (dbh). Roost tree structure appears to be more important than a particular tree species or habitat type. Females appear to be more habitat specific than males, likely because of the warmer temperature requirements for gestation and rearing of young. As a result, females are generally found at lower elevations than males. Roosts are warmed by direct exposure to sunlight, leading to a

⁴ NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: August 11, 2011). Comprehensive Report Species – *Novisuccinea chittenangoensis*

preference for trees in open canopy situations rather than in shaded locations. Shaded roosts may be utilized during very hot weather⁵.

Streams associated with floodplain forests and impounded water bodies where abundant supplies of flying insects are present also provide preferred foraging habitat for Indiana bats. Indiana bats forage within 2-5 miles of upland roost trees, and within the canopy of upland forests, over clearings with early successional vegetation, along the borders of croplands, along wooded fencerows and over farm ponds in pastures⁶. The maximum elevation where Indiana bats have been observed is approximately 900 feet above sea level⁷. The project area includes some areas above 900 feet in elevation, but most areas are below this elevation.

Based upon reported habitat preferences and the location of the proposed ARE Park footprint within existing agricultural fields or soil borrow areas (not within existing wooded areas or wetlands), it is unlikely that summer roosting habitat of Indiana bats would be affected by the development of the ARE Park. Utility construction will be completely largely within existing, cleared road right of way. This type of habitat is not utilized by Indiana bats because it does not contain trees needed for summer roosting.

⁵ U.S. Fish and Wildlife Service, New York Field Office. September, 2010. *Indiana Bat Project Review Fact Sheet*. <http://www.fws.gov/northeast/nyfo/es/lbat%20fact%20Sheet%20Sept%202010%20final.pdf>

⁶ Ibid.

⁷ Ibid.

3.2 New York State Listed or Proposed Species

Consultation with the New York Natural Heritage Program and the Region 7 office of the New York State Department of Environmental Conservation indicated that one State listed endangered species, the bent sedge (*Carex styloflexa*) was reported near the hamlet of Clockville in 1935.

Habitat information for this species is summarized from a variety of sources.⁸ This species does well in areas where there is minor disturbance in the canopy, such as treefalls, but does not survive well following clear-cutting which dries the soil. The plant can persist in conditions ranging from deep shade to 70-90 percent sunlight. Soil conditions must remain moist. In New York, habitat preferences include: thin limestone ledges in woods near Clockville; damp spots in rich shade; moist wet thicket; edge of wet, rich woods; swampy woods; on the border of a brook; in a sphagnum bog; in rich wet hilly woods and in a damp thicket. It will not tolerate standing water that persists for 1-2 months or frequent inundation of water, but will tolerate flash floods.

3.3 Potential Project Impacts

American Hart's Tongue Fern (*Asplenium scolopendrium* var. *americanum*). While the wooded slopes and limestone/dolostone outcrops of Limestone Creek and Cowaselon Creek may provide habitat for American hart's tongue fern, these areas will not be disturbed by the proposed construction of the ARE Park. ARE Park construction will be limited to existing agricultural areas and soil borrow areas within Sites 1A and 1B, and will likely be limited to existing agricultural areas and previously disturbed areas within Site 2. The Town of

⁸ NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: August 11, 2011). Comprehensive Report Species – *Carex styloflexa*.

Lincoln also requires a permit for construction on slopes greater than 15%. Most of the known habitat for American hart's tongue fern occurs in steeply sloping environments. Based on the known habitat preferences of this plant and a detailed site walkover of the potential habitat area, the proposed development will not adversely affect this species.

This habitat will also not be disturbed by the construction of water and sewer mains because these utilities will be directionally bored through bedrock in the locations where this species is likely to be found.

Chittenango Amber Ovate Snail (*Succinea chittenangoensis*). This species is known to exist in only one location: the spray zone of Chittenango Falls in Chittenango Falls State Park. The specific habitat requirements of this species are not present within the proposed ARE Park footprint. The stream channels of Limestone Creek and Cowaselon Creek will not be disturbed as part of this proposed development. Based upon a review of the habitat preferences of the Chittenango Amber Ovate Snail, and a site walkover of the project area, the proposed ARE Park development and the water and sewer mains will not adversely affect the Chittenango Amber Ovate Snail.

Indiana Bat (*Myotis sodalis*). Two stream channels are located within the project area: Limestone Creek and Cowaselon Creek. Both stream channels are forested within the project vicinity. Project development will largely be conducted within open lands approved for soil mining and existing agricultural fields. These open areas are not likely to be used by Indiana bats for foraging. No potential roost trees are located within the proposed development footprint.

The only area of potential impact to Indiana bat habitat is the utility crossing proposed for Limestone Creek. This area is wooded with silver and red maple, willow and other wetland/flood plain species. The utility crossings will

likely be directionally bored under the creek channel to avoid adverse impacts to the creek and wetlands associated with the channel. Based upon this assessment, it is unlikely that Indiana bat habitat will be adversely affected by construction of project utilities.

Bent sedge (*Carex styloflexa*). Based upon a review of the habitat requirements of this species, and a site walkover of the proposed development area, it is unlikely that bent sedge will be directly or indirectly affected by the proposed project. Areas proposed for disturbance in this project have been previously cleared of vegetation, and are presently used as either soil borrow areas or agricultural fields. The habitat preferred by this species may be found within the project site, but is not within the project development footprint. No disturbance of any exposed limestone ledge areas or forested riparian corridors is proposed as part of this development. Therefore, no taking of the plant species will occur as a result of this project.

4.0 Conclusions

Based on review of information contained in the U.S. Fish and Wildlife Service Endangered Species web page, consultation with the New York State Department of Environmental Conservation Region 7 office (Syracuse), and the New York Natural Heritage Program, and other Internet and literature sources, as well as site investigations conducted in conjunction with wetland delineations and other site activities, it is unlikely that any federal or state listed or proposed endangered or threatened species, or species of concern will be affected by the construction of the proposed ARE Park.

No mitigation measures for threatened or endangered species are proposed.

5.0 References

- McNab, W.H., Cleland, D.T., Freeouf, J.A., Keys, J.E., Jr., Nowacki, G.J., Carpenter, C.A., comps. 2005. Description of ecological subregions: sections of the conterminous United States [CD-ROM]. Washington, DC: U.S. Department of Agriculture, Forest Service, 80 p.
- NatureServe. 2011. *NatureServe Explorer: An online encyclopedia of life* [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: August 11, 2011). Comprehensive Report Species – *Asplenium scolopendrium* var. *americanum*. <http://www.natureserve.org>
- NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: August 11, 2011). Comprehensive Report Species – *Carex styloflexa*. NatureServe. 2011.
- NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: August 11, 2011). Comprehensive Report Species – *Novisuccinea chittenangoensis*
- New York Natural Heritage Program. 2002. *Ecological Communities of New York State*, 2nd edition (draft). Edinger, Gregory et al. (eds).
- Reschke, Carol. 1990. *Ecological Communities of New York State*. New York Natural Heritage Program.
- U.S. Fish and Wildlife Service, *Federally Listed Endangered Species and Candidate Species in New York (by County)*, updated June 1, 2011, <http://www.fws.gov/northeast/nyfo/es/ColistCurrent.pdf>
- U.S. Fish and Wildlife Service, New York Field Office. September, 2010. *Indiana Bat Project Review Fact Sheet*. <http://www.fws.gov/northeast/nyfo/es/lbat%20fact%20Sheet%20Sept%202010%20final.pdf>

Appendix E
Wetland Delineation Reports

Agricultural and Renewable Energy Park

**Town of Lincoln
Madison County, New York**

Wetland Delineation Report

November 2011

Agricultural and Renewable Energy Park

Town of Lincoln
Madison County, New York

Appendix E
Wetland Delineation Report

November 2011

Prepared For:

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1.0 Introduction

Barton and Loguidice, P.C. (B & L) was retained by Madison County to delineate wetlands along proposed water and sanitary sewer main alignments and on property owned by Madison County that has been identified as the site of a future Agricultural and Renewable Energy Park (ARE Park). The ARE Park is proposed as a site for the location of businesses and industries focused on the development of value-added agricultural products and renewable energy. This study summarizes the results of the wetland delineation and presents an assessment of potential wetland impacts associated with the development of the ARE Park and the appurtenant utilities.

The ARE Park project site consists of three parcels identified as Site 1A, Site 1B and Site 2. Site 1A is a 50 acre parcel of land located on the east side of Tuttle Road in the Town of Lincoln. It is currently in agricultural use, but has been approved for use as a soil borrow area for the Madison County Landfill, located immediately east of Site 1A. Soil excavation activities have already begun on this parcel.

Site 1B is a 15 acre parcel of land located south of Site 1A on the east side of Tuttle Road. This site is currently in agricultural use. This site has also been approved for use as a soil borrow area.

Site 2 is a 230 acre parcel of land located primarily on the east side of Buyea Road, with a 12 acre area located on the west side of Buyea Road, near the entrance to the landfill. Site 2 currently hosts a mix of uses: predominantly agricultural and open space, but includes an area that is used by Madison County for a recycled materials drop off center and other activities.

The project also includes the extension of potable water service and sanitary sewer service to the proposed ARE Park location. Wetland delineations were completed for the preferred locations for the extension of these services.

Figure 1 shows the location of the proposed ARE Park parcels and the preferred water and sanitary sewer alignments on a topographic overlay. Figures 2.1 to 2.3 depict the proposed project on an aerial photograph background.

The proposed water main alignment originates on Oxbow Road at the terminus of the existing water service in the town of Lincoln. The alignment continues south along Oxbow Road to the hamlet of Clockville, turning east along Timmerman Road to Tuttle Road. At Tuttle road, the alignment turns south and cuts east along the north property line of County-owned lands, crossing Limestone Creek and intersecting Buyea road.

The proposed sanitary sewer line will convey sanitary waste and landfill leachate from the ARE park sites and the Madison County landfill north along Buyea Road, to Upper Lenox Road, to the City of Oneida's collection system located along NYS Route 5 in the City of Oneida.

The proposed water and sewer infrastructure alignments were delineated by B & L staff on October 15 and 16, 2009. Wetlands within Site 1A and 1B of the ARE Park were delineated by B & L staff on October 16, 2009 and reassessed on August 2, 2011. Delineation efforts for Site 2 were performed on August 12 and 17, 2011. The wetlands located within the project limits that met the Federal wetland criteria were delineated using the methods set forth in the Northeast/Northcentral Supplement to the Corps of Engineers Wetland Delineation Manual (2009).

This report contains a description of the project area including the site ecology, the methodology used to determine the wetland boundaries, agency resource information obtained for the sites, and the results of the wetland field delineation. Photographs of the wetland and water resources located within the project limits and wetland delineation field data sheets are included in the appendices at the end of this report.

2.0 Site Description

2.1 Location

The water main alignment is located in the Town of Lincoln, Madison County. The sanitary sewer alignment is located within the Town of Lincoln and the City of Oneida, Madison County. The proposed ARE Park is located within the Town of Lincoln, Madison County, New York.

2.2 Site Use

Land uses along the proposed water main alignment consist of residential homes, small businesses and agricultural operations. Land uses along the proposed sanitary sewer alignment consist of agricultural fields, undeveloped lands, scattered residential homes and farmsteads, and some commercial and light industrial development at the intersection of Upper Lenox Road and NY Route 5 the City of Oneida.

Sites 1A and 1B are located west of Madison County's operating landfill site on the west side of Limestone Creek. This site includes active and abandoned agricultural lands, a small wetland in the center of an agricultural field on Site 1A, and a deciduous forested corridor along the stream channel of Limestone Creek. The primary access to Sites 1A and 1B will be from Tuttle Road. Site 1A consists of approximately 50 acres of open agricultural field with a high point along Tuttle Road, and sloping gradually toward Limestone Creek, which divides the property from the operating landfill site.

Site 1B consists of a long, narrow, irregularly shaped, north-south oriented property with frontage along Tuttle Road. The site slopes gradually to the east, draining into Limestone Creek. Land use on the site consists of approximately

15 acres of agricultural land (primarily corn field), bordered by the deciduous wooded riparian corridor of Limestone Creek.

Land uses found on Site 2 include active and abandoned agricultural lands, mixed forest areas, unvegetated fill areas and disturbed soil areas. Some of the disturbed areas are associated with the storage and handling of bulky recyclable materials, and appurtenances related to the operation of a residential waste drop-off station. The primary access points for Site 2 are expected to be from Buyea Road. Site 2 also includes a section of Cowaselon Creek (Stream 7).

2.3 Surface Water

The proposed water main and sewer main are located within two 12-digit Hydrologic Unit Codes (HUC): the Upper Cowaselon Creek watershed (HUC 041402020501) and the Middle Cowaselon Creek watershed (HUC 041402020502). Both of these watersheds drain to Oneida Lake, which drains to Lake Ontario. Four stream crossings were identified for the water main alignment based on information from the U.S. Geological Survey topographic maps (Oneida and Canastota, NY 7.5' quadrangles) and field observations. Five stream crossings were identified from these same resources for the proposed sanitary sewer main. Limestone Creek, a perennial tributary of Clockville Creek, is located immediately east of Sites 1A and 1B. Site 2 includes a reach of Cowaselon Creek, which forms a confluence with Clockville Creek in the hamlet of Lenox, northeast of the project site. These streams, associated stream reach details, and NYSDEC water quality classifications are summarized in Table 1, and correspond to Stream ID Numbers on Figures 5a to 5h.

**Table 1. Summary of Stream Crossings and Water Quality Classifications
for Water and Sewer Mains**

Stream ID Number	Water Index Number	Crossing Coordinates (Latitude and Longitude)	NYSDEC Stream Standard and Classification	12-digit HUC Watershed	Stream Name	Water Flow Regime
Proposed Water Main Stream Crossings						
1	Unmapped Stream	43.044, 75.709	D, D	041402020501 Upper Cowaselon Creek Watershed	Tributary to Limestone Creek	Intermittent
2	Ont. 66-11-P 26-33-13-2	44.043 75.705	C(t), C	041402020501 Upper Cowaselon Creek Watershed	Limestone Creek	Perennial
3	Unmapped Stream	43.057, 75.748	D, D	041402020502 Middle Cowaselon Creek	Tributary to Canastota Creek	Perennial
4	Unmapped Stream	43.053, 75.748	D, D	041402020502 Middle Cowaselon Creek	Tributary to Canastota Creek	Perennial
5	Unmapped Stream	43.052, 75.747	D, D	041402020502 Middle Cowaselon Creek	Tributary to Canastota Creek	Perennial
6	Ont. 66-11-P 26-33-13-6	43.042, 75.736	C(t), C	041402020501 Upper Cowaselon Creek Watershed	Tributary to Clockville Creek	Perennial
7	Unmapped Stream	43.043, 75.726	D, D	041402020501 Upper Cowaselon Creek Watershed	Tributary to Clockville Creek	Perennial
10A	Ont. 66-11-P 26-33-13	43.042, 75.743	C(t), C	041402020501 Upper Cowaselon Creek Watershed	Clockville Creek	Perennial

**Table 1. Summary of Stream Crossings and Water Quality Classifications
for Water and Sewer Mains**

Stream ID Number	Water Index Number	Crossing Coordinates (Latitude and Longitude)	NYSDEC Stream Standard and Classification	12-digit HUC Watershed	Stream Name	Water Flow Regime
Sewer Main Stream Crossings						
1	Unmapped Stream	43.044, 75.709	D, D	041402020501 Upper Cowaselon Creek Watershed	Tributary to Limestone Creek	Intermittent
2	Ont. 66-11-P 26-33-13-2	44.043 75.705	C(t), C	041402020501 Upper Cowaselon Creek Watershed	Limestone Creek	Perennial
8	Ont. 66-11-P 26-33	43.062, 75.701	C(t), C	041402020502 Middle Cowaselon Creek	Cowaselon Creek	Perennial
9	Ont. 66-11-P 26-33-11	43.073, 75.692	C, C	041402020502 Middle Cowaselon Creek	Tributary to Cowaselon Creek	Perennial
10B	Ont. 66-11-P 26-33-13	43.056, 75.706	C(t), C	041402020501 Upper Cowaselon Creek Watershed	Clockville Creek	Perennial

3.0 Agency Resource Information

Prior to undertaking the field wetland delineation, background information regarding mapped soils, mapped wetlands, and site topography was reviewed. This background information included the United States Geological Survey (USGS) topographic quadrangle maps (Canastota and Oneida, NY 7.5 Minute Topographic Maps), NYSDEC Freshwater Wetlands mapping, National Wetland Inventory (NWI) Maps, and soils information from the Natural Resources Conservation Service (NRCS) for Madison County.

3.1 USGS Topographic Quadrangle Map

The Canastota and Oneida, New York 7.5 Minute Series Topographic Quadrangles were examined for information pertinent to this project. These quadrangles show the approximate location of mapped streams and ponds, drainages, and the approximate locations of significant wetland areas.

The general terrain of the project area varies from the steeply incised, forested stream channels of Limestone Creek and Cowaselon Creek, to rolling farmland and sparsely vegetated hillsides of the Madison County Landfill. The terrain slopes generally toward the north, with a sharp break in topography at the Helderberg Escarpment, exposed in the valley of Clockville Creek. The lowest point along the water main alignment is located at approximately 670 ft above sea level in the hamlet of Clockville. The highest point along the proposed water main alignment is approximately 900 ft. above sea level near Buyea Road. The lowest point along the proposed sewer main alignment is approximately 480 ft. above sea level, located south of the Route 5 intersection. The highest point of the proposed sewer main is approximately 850 ft. above sea level, located near the northern property line of Site 1A.

The topography on Site 1A ranges from a high point of approximately 850 feet above sea level along the east side of Tuttle Road sloping eastward to a low of approximately 790 feet above sea level along the channel of Limestone Creek.

The topography of Site 1B ranges from a low point of approximately 850 feet above sea level along the north limit to a high point between 900 and 920 feet in elevation at the south end of the site along Tuttle Road. The land drops gradually from south to north, sloping northeasterly toward Limestone Creek at the north end of the property.

The topography of Site 2 varies from gently sloping to the north and east along the east side of Buyea Road, to steeply sloping along the stream channel of Cowaselon Creek. The highest point within Site 2 is approximately 900 feet above sea level located near the south end of the site along Buyea Road. The lowest point on the site is approximately 550 feet above sea level at the northeast corner of the site within the Cowaselon Creek channel.

3.2 Project Area Soils Information

The NRCS Web Soil Survey information for Madison County was used to determine the types of soils mapped within the proposed project limits. Figure 3 shows the locations of the water main and sewer main alignments, the project sites and the mapped soil types. The following tables (Tables 2, 3, and 4) list the series and phases that belong to each soil symbol mapped within these boundaries.

Table 2. Mapped Soil Types – Proposed Water Main Village of Canastota to ARE Park/Madison County Landfill Site		
Soil ID	Mapping Unit	Slope
CaC	Camillus silt loam	8-15%
CfB	Cazenovia silt loam	3-8%
CfC	Cazenovia silt loam	8-15%
CfD	Cazenovia silt loam	15-25%
HnB	Honeoye silt loam	3-8%
HnC	Honeoye silt loam	8-15%
LaB	Lairdsville silt loam	3-8%
LbC	Lairdsville silty clay loam	8-15%
LbD3	Lairdsville silty clay loam, severely eroded	15-25%
LtB	Lima silt loam	3-8%
OnB	Ontario variant loam	3-8%
OnC	Ontario variant loam	8-15%
PgB	Palmyra gravelly loam	undulating
SdC	Schoharie silty clay loam	rolling
SEE	Schoharie-Cazenovia complex	steep
WeA	Wampsville gravelly silt loam	Nearly level
WeC	Wampsville gravelly silt loam	Rolling
WeD	Wampsville gravelly silt loam	Hilly
Wn	Wayland silt loam	Nearly level

Hydric Unit – **Bold**Hydric Inclusions - *Italicized*

One area of hydric soil is mapped along the water main alignment in the vicinity of the hamlet of Clockville. A section of Clockville Creek is associated with an area mapped as Wayland silt loam. Wayland soils are alluvial, hydric soils subject to frequent flooding and a persistent high water table. The remaining soil mapping units included in Table 2 are not hydric soils.

Table 3. Mapped Soil Types - Sewer Main Alignment ARE Park Site/Madison County Landfill to City of Oneida		
Soil ID	Mapping Unit	Slope
CfB	Cazenovia silt loam	3-8%
CfD	Cazenovia silt loam	15-25%
HnB	Honeoye silt loam	3-8%
HnC	Honeoye silt loam	8-15%
LaB	Lairdsville silt loam	3-8%
LbC	Lairdsville silty clay loam	8-15%
LbD3	Lairdsville silty clay loam, severely eroded	15-25%
LbE3	Lairdsville silty clay loam, severely eroded	25-40%
PKE	Palmyra Arkport complex	Steep
PMF	Palmyra and Howard soils	Very steep
ScB	Schoharie silt loam	3-8%
SEE	Schoharie-Cazenovia complex	Steep
Te	Teel silt loam	Nearly level
Wn	Wayland silt loam	Nearly level
Wv	Weaver silt loam	Nearly level

Hydric Unit – **Bold**

The only mapped hydric soil unit located along the alignment of the proposed sewer main is Wayland silt loam. This soil is located along the channel of Cowaselon Creek in the vicinity of stream crossing 8, south of the NY Route 5.

Table 4. Mapped Soil Types - ARE Park Sites		
Soil ID	Mapping Unit	Slope
CfB	Cazenovia silt loam	3-8%
CfD	Cazenovia silt loam	15-25%
HnB	Honeoye silt loam	3-8%
HnC	Honeoye silt loam	8-15%
HnE	Honeoye silt loam	25-50%
LaB	Lairdsville silt loam	3-8%

Table 4. Mapped Soil Types - ARE Park Sites		
Soil ID	Mapping Unit	Slope
LbC	Lairdsville silty clay loam	8-15%
LbD3	Lairdsville silty clay loam, severely eroded	15-25%
Ly	Lyons silt loam	Level
PgB	Palmyra gravelly loam	Undulating
PgD	Palmyra gravelly loam	Hilly
PMF	Palmyra and Howard soils	Very steep
SdC	Schoharie silty clay loam	Rolling
SEE	Schoharie-Cazenovia complex	Steep
Wk	Warners mucky silt loam	Level
Wv	Weaver silt loam	Level

Hydric Soils - Bold

The Lyons silt loam and Warners mucky silt loam map units are listed as hydric soils in the Madison County soil survey. An area of Lyons soil is mapped along the channel of Cowaselon Creek in ARE Park Site 2. It is adjacent to an area of Warners mucky silt loam. No areas of hydric soils are mapped on ARE Park Sites 1A or 1B.

3.3 NYS Freshwater Wetland Maps

No mapped New York State Wetlands are located along the alignments of either the water main or the sewer main, or within the footprint area of the ARE Park parcels. Therefore, no Article 24 Freshwater Wetland Permits will be required from the State of New York Department of Environmental Conservation.

3.4 National Wetland Inventory Maps

The NWI maps for the project area were reviewed for the presence of mapped wetlands. The maps available from NWI.gov for the project area are scanned copies of hand-drawn maps. These maps have not yet been digitized to meet current NWI mapping standards.

No NWI wetlands are mapped along the proposed water main alignment. The water main alignment crosses four stream channels that were identified from U.S.G.S. topographic map sources. These crossings are summarized in Section 2.3 of this report. Mapped NWI wetlands were identified along areas of the proposed sewer main installation and on portions of the Site 2 parcel, as shown in Figure 4 and summarized in Table 5.

Wetland ID	Mapped Wetland Cover Type	Location	Area (acres)*
PFO1C	Palustrine, deciduous broad leaf forest, seasonally flooded	Sewer main crossing of Clockville Creek	1.46
R3UBH	Riverine, upper perennial, unconsolidated bottom, permanently flooded	Upper Lenox Avenue over Cowaselon Creek	N.A.
R3UBH	Riverine, upper perennial, unconsolidated bottom, permanently flooded	Upper Lenox Avenue over tributaries of Cowaselon Creek	N.A.
PSS1E	Palustrine, scrub shrub, broad leaf deciduous, seasonally flooded/saturated	Site 2, south property line, near Cowaselon Creek; wetland straddles property line	2.43
PEM1E	Palustrine, emergent, persistent, seasonally flooded/saturated	Site 2, associated with flood plain of Cowaselon Creek	0.49*
PEM1E	Palustrine, emergent, persistent, seasonally flooded/saturated	Site 2, associated with flood plain of Cowaselon Creek	6.28
PFO1E	Palustrine, deciduous broad leaf forest, seasonally flooded/saturated	Site 2, associated with flood plain of Cowaselon Creek	7.99

*Area digitized from scanned NWI map GIS layer.

3.5 Flood Plain Maps

Flood insurance rate maps provided by the Federal Emergency Management Agency were reviewed to determine the location of 100 year flood plains within and adjacent to the proposed water main and sewer main alignments, as well as the ARE Park Sites.

A portion of the 100 year flood plain of Cowaselon Creek is located in ARE Park Site 2. This area will not be affected by any proposed construction or be disturbed by soil borrow activities..

A portion of the 100 year flood plain of Limestone Creek is located at the toe of slope east of the limits of ARE Park Sites 1A and 1B. No disturbance is proposed for this flood plain area.

Utility crossings will be required for the flood plains of Clockville Creek, Limestone Creek, and Cowaselon Creek. These crossings will be designed to avoid adverse impacts to the flood plain by restoring the ground surface to the original elevation once construction has been completed.

3.6 Results of Background Information Review

A preliminary review of background information conducted prior to the wetland field investigation indicated a high probability for potential federally-regulated wetlands to be located along the proposed alignments for the water main and sewer main as well as within the ARE Park Sites. This determination was based on the identification of mapped NWI wetlands within the project limits, the presence of hydric soils mapped along the road corridors, and the recognition of low terrain associated with several stream crossings and their adjacent floodplain areas. A field-based wetland delineation was conducted throughout

the project limits to confirm these preliminary findings and identify all existing wetland locations.

4.0 Site Ecology

4.1 General Cover Types

According to Bailey's Ecoregions of the Conterminous United States¹, the project site is located within the Northern Glaciated Allegheny Plateau Section of the Laurentian Mixed Forest Province, Warm Continental Division, Humid Temperate Domain. The Northern Glaciated Allegheny Plateau Section is described as a maturely dissected glaciated plateau of rounded ridges and moderate relief with areas of irregular topography with high hills and steep valleys. Forest vegetation consists of maple-beech-birch, oak-hickory, and aspen-birch cover types.

The following is a brief description of cover types associated with the water main and sewer main alignments and the ARE Park parcels. The majority of the proposed new infrastructure included as part of this project will be installed in previously disturbed areas within the road right of way. Where creek crossings are required, some disturbance of riparian forested or scrub shrub vegetation may be required. Existing vegetative cover types for the project site are summarized in Table 6. The predominant cover types within the ARE Park sites consist of agricultural fields, meadow-brushland, and previously disturbed/unvegetated soil areas.

¹ McNab, W.H., Cleland, D.T., Freeouf, J.A., Keys, J.E., Jr., Nowacki, G.J., Carpenter, C.A., comps. 2005. Description of ecological subregions: sections of the conterminous United States [CD-ROM]. Washington, DC: U.S. Department of Agriculture, Forest Service, 80 p.

Table 6. Vegetative Cover Types		
Site No.	Cover Type	Size (Acres)
1A	Wetland	0.74
	Unvegetated	7.3
	Agricultural	41.5
1B	Agricultural	15.72
2	Agricultural	111.2
	Building/Paved	2.46
	Meadow/Brushland	97.06
	Unvegetated	19.87

4.2 Habitat Types

The distribution of plant and animal species corresponds with the different ecoregions mapped within the project area. The project is located in a transition zone between the Great Lakes (Erie-Ontario) Ecoregion and the Appalachian Plateau Ecoregion. In accordance with the ecological zone description included in the Ecological Communities of New York State (Edinger, et al, 2002), the project area is dominated by successional hardwood forest, croplands, scrub-shrub brushy fields, mowed roadsides, floodplain forests and palustrine emergent wetlands.

4.3 Wetland Cover Types

General wetland cover types identified within the project areas were observed to be open water, emergent, scrub-shrub, and forested. A detailed description of wetland cover types is presented below:

Open Water: Open water cover types generally consist of perennial streams, ponds, and lakes. Depths may range from less than one foot to more than six feet. The wetland substrate may consist of bedrock, gravel,

sand, or mud. Vegetation may consist of rooted or floating aquatic species.

Emergent: Erect, rooted, herbaceous hydrophytic plants characterize emergent wetlands. This vegetation can be observed throughout the majority of the growing season. These wetlands typically have standing water above the soil surface for a portion of the year and often include fringe communities on open water edges.

Scrub-Shrub: This wetland cover type is primarily found in areas that were formerly open or otherwise cleared. Scrub-shrub wetlands are often found in areas of shallow standing water. Woody vegetation that is less than 20 feet in height helps classify these wetlands. Within the project area, scrub-shrub wetlands were observed bordering emergent wetlands or noted as localized pockets within larger forested wetland areas.

Forested: Forested wetlands are dominated by woody vegetation taller than 20 feet, where soil is at least periodically saturated or covered by water. Forested wetlands within the delineated wetland area commonly included deciduous trees with an under story of hydrophytic herbaceous vegetation. The denseness of the understory was observed to vary by location. These wetlands were often observed bordering cultivated agricultural fields and other disturbed areas.

4.3.1 Water Main from Canastota to ARE Park Site

No wetlands were observed within the proposed water infrastructure alignment on Oxbow Road, Timmerman Road, Tuttle Road, or Buyea Road. One forested/scrub-shrub/emergent wetland associated with the flood plain of Limestone Creek was observed and location

surveyed. Information regarding this wetland is located in Section 6.0 and on field data sheets within Appendix A. This wetland can be viewed as Wetland B on Figure 5d. As described in Table 1 above, the proposed water main will cross a stream in eight locations. The location of the eight streams identified in the field can be observed on Figures 5a through 5d.

4.3.2 Sanitary Sewer Main from ARE Park/Madison County Landfill to NY Route 5, City of Oneida

The proposed sewer infrastructure is proposed to cross streams in five locations. All of the proposed crossings will be completed using directional bore technology resulting in no impacts to streams within the proposed corridor. The sewer main will also cross the forested/scrub-shrub/emergent wetland within the floodplain of Stream 2. An emergent/scrub-shrub wetland was observed to be adjacent to Upper Lenox Avenue and is labeled as Wetland C. All delineated wetlands and streams within the sewer main corridor can be observed in Figures 5d through 5g.

4.3.3 ARE Park Wetlands

One wetland was observed and delineated within ARE Park Site 1A. This wetland contained scrub-shrub and emergent cover types and is labeled as Wetland A on Figure 5d. The eastern portion of Site 2 was dominated by a large wetland comprised of a mixture of forested and emergent cover types. This wetland has been labeled Wetland D and its boundaries can be observed on Figure 5e. More details about the delineated wetlands located within the project limits are included in Section 6.0 of this report.

5.0 Wetland Delineation Methodology

The background data described in Section 3 was reviewed prior to undertaking the wetland field investigation. The Routine Wetlands Determination Method with Onsite Inspection (Environmental Laboratory, 1987) and Northeast/Northcentral Regional Supplement to the 1987 Corps of Engineers were used to identify wetlands located within the project area that are subject to jurisdiction by the U.S. Army Corps of Engineers (USACE).

B&L performed data collection and delineation of the wetland boundaries during fieldwork conducted on several occasions. Field work initially began in October of 2009. Delineations performed during this period were reevaluated by B&L staff during the summer of 2011. Observations of vegetative communities, soils, and hydrology were used to determine the wetland boundaries in the field.

All of the data collected in the field was recorded on field data sheets (located in Appendix A). The boundaries of all delineated wetlands and streams are collectively mapped on Figures 5a through 5h.

The first step of the wetland field delineation was to determine whether normal conditions were present at each identified wetland location. Each site was then examined for evidence of natural or human induced alteration of vegetation, soils, or hydrology. These investigations were followed by analyzing the surrounding area and determining where the wetland/upland interface lay. Selected points were sampled for vegetation, hydrology, and soils to help determine the location of this boundary.

The presence of wetland vegetation was determined by evaluating the indicator status of dominant plant species in each vegetative stratum (i.e., herbaceous layer, shrub/sapling layer, tree layer, and woody vine layer). The quadrat sizes selected for each vegetative stratum were a 5-foot radius for herbaceous vegetation and a 30-foot

radius for trees, shrub/saplings, and woody vines. Dominant plant species were determined using percent aerial coverage estimates. The most abundant plant species (when ranked in descending order of abundance and cumulatively totaled) that immediately exceeded 50% of the total dominance measure for a given stratum, plus any additional species comprising 20% or more of the total dominance measure for that stratum, were considered to be dominant species for the stratum.

The wetland indicator status (obligate - OBL, facultative wetland - FACW, facultative - FAC, facultative upland - FACU, or upland - UPL) for all dominant plant species identified in the sample plots was determined from the National List of Plant Species That Occur in Wetlands: 1988 National Summary (U.S. Fish and Wildlife Service, 1988).

The Regional Supplement uses a sequence of four tests to establish the presence or absence of hydrophytic vegetation. The four tests are done in a sequence on an if/then logic test basis. Proceeding to the next indicator level should only be completed if Indicator 1 or the preceding indicator resulted in a no hydrophytic vegetation determination. Indicator 1 is the rapid test for hydrophytic vegetation. This indicator is applied if all dominant species across all vegetation strata are rated OBL or FACW.

Indicator 2 is the dominance test. Vegetation is considered to be hydrophytic if more than 50% of the dominant plant species across all strata are rated OBL, FACW, or FAC. The 50/20 rule described above determines the dominant species within a vegetative plot.

The third indicator of hydrophytic vegetation is linked to the prevalence index. This prevalence index ranges from 1 to 5. In order for a sample area to contain hydrophytic vegetation the plot must have a prevalence index of 3 or less. The prevalence index is a weighted-average of wetland indicator statuses of all plant

species in the sampling plot. The wetland indicator status of each species is assigned a value according to the following schedule: OBL 1; FACW 2; FAC 3; FACU 4; and UPL 5. These assigned values are multiplied by the absolute percent cover of all species within that particular indicator status. The product of each indicator value is then summed and divided by the total percent cover, resulting in the prevalence index for that vegetation plot. The equation is as follows:

$$\text{Prevalence Index} = \frac{\text{Aobl} + 2 * \text{Afacw} + 3 * \text{Afac} + 4 * \text{Afacu} + 5 * \text{Aupl}}{\text{Aobl} + \text{Afacw} + \text{Afac} + \text{Afacu} + \text{Aupl}}$$

where A(x) is the absolute percent cover

Indicator four consists of morphological adaptations. Certain plant species exhibit morphological changes in order to survive in areas that are saturated or flooded for prolonged periods of time. Some common morphological adaptations in the northeast consist of adventitious roots, hypertrophied lenticels, multi-stemmed trunks, and shallow root systems.

Plant community data recorded from each sample plot are included on the wetland delineation field data sheets found in Appendix A.

The presence of primary hydrologic indicators (such as inundation, saturation, watermarks, or sediment deposits) or secondary hydrologic indicators (such as drainage patterns, crayfish burrows, stunted or stressed plants, or the FAC neutral test) was determined by making visual observations within the sample plots and surrounding areas. Soil saturation was determined by sampling the soils to a minimal depth of 10-inches, if possible. These soil test holes were observed in order to record the depth to which water rose in the hole. Hydrologic data gathered in the field at each sample plot is included on the wetland delineation field data sheets found in Appendix A.

The presence of hydric soil indicators was determined by extruding soil samples, by the use of a soil auger, up to a minimal depth of 10-inches, if possible. A Munsell Soil Color Chart (2000 and 2009 Editions) was used to determine soil color within all encountered horizons within the soil profile, including different layers within the same horizon. Soil profiles were compared to hydric soil indicators for the USDA Subregion Land Resource Region (LRR) L – Ontario-Erie Plain and Finger Lakes Region, included within the Northcentral and Northeast Regional Supplement (Environmental Laboratory, 2009). Soil color information and other observations made at each sample plot are included on the wetland delineation field data sheets found in Appendix A.

A wetland determination was made at each sample plot after characterizing vegetation, hydrologic indicators, and soil characteristics. If the hydrophytic vegetation, hydrology, and hydric soil criteria were met, the area was determined to be a wetland. If the criterion for one or more of the three-wetland indicators was not met, the area was determined to not be a wetland.

The boundaries of each wetland location were surveyed in the field using a handheld Global Positioning System (GPS). A hand-held Trimble GeoXH model with sub-foot accuracy capability was used to identify each point location and map each wetland boundary within the project area. The wetland boundaries were later added to the Geographic Information System (GIS) base mapping for the project. Representative photographs taken at wetland locations throughout the project area are included in Appendix B.

6.0 Results

6.1 Wetland Labeling

As part of the wetland delineation field effort, a total of four wetland areas and 10 streams were identified and delineated within the ARE Park sites, and the water and sewer main corridors (see wetland delineation maps, Figures 5a through 5h).

Identified wetland areas were individually labeled alphabetically from A to D. Vegetation, soil, and hydrologic characteristics of each delineated wetland can be viewed on the corresponding field data sheets located in Appendix A. Identified streams were labeled as Stream 1 through Stream 10 and included NYSDEC mapped and unmapped streams. Field data sheets were not completed for any unmapped or mapped streams. GPS data for these surface waters, where appropriate, was recorded at what was determined to be the top of bank for the resource.

6.2 Delineated Wetlands

Wetlands and in most cases upland data plots were performed and recorded for each wetland identified. Information regarding soil characteristics, hydrology, and vegetation at each data plot can be viewed on the field data sheets located in Appendix A. Figures 5a to 5h depict the locations of all wetlands delineated during the field investigation.

Wetland A: This wetland is centrally located within Site 1A and surrounded by agricultural land uses. Wetland A is a depressional wetland with an outlet observed along the northeast corner. No water was flowing through the outlet, identified as Stream 1, during the site

investigation, although it was apparent that flow occurs periodically as a definite channel has been created. Stream 1 flows in a northeast fashion, contributing its contents to Limestone Creek (Stream 2). Soils within Wetland A were determined to be hydric due to the presence of depleted soil matrices. Soil color in the wetland was observed to have a 10YR 4/2 matrix with five percent mottling of 10YR 5/8 from zero to nine inches. From nine to 13 plus inches the matrix changed to a 10YR 5/3 with mottles of 10YR 7/3 at five percent and two percent mottles of 10YR 6/8. Sediment deposits, water stained leaves and water marks on vegetation provided evidence of hydrology within the wetland. Vegetation was dominated by facultative (FAC) or wetter plants such as sensitive fern (*Onoclea sensibilis*), woolgrass (*Scirpus cyperinus*), creeping Jenny (*Lysimachia nummularia*), and red maples (*Acer rubrum*). All three criteria; hydric soil, hydrology, and wetland vegetation were observed and recorded for Wetland A.

Wetland B: Located approximately 500-feet north of the landfill, Wetland B is found within the ravine created by Limestone Creek. The floodplain adjacent to Limestone Creek (Stream 2) was observed to be saturated at the surface and was vegetated by plant species that are identified as FAC or wetter. No soil data plot was performed for Wetland B based on the presence of abrupt slopes in the ravine and the close proximity and hydrologic connection to Limestone Creek.

Wetland C: Wetland C is an emergent marsh with sporadic scrub-shrub vegetation that is located on the west side of Upper Lenox Avenue. Vegetation was dominated by broad-leaved cattail (*Typha latifolia*), with small stands of green ash (*Fraxinus pennsylvanica*) shrubs. Soil within Wetland C was extremely organic and was determined to be a mucky

mineral soil with a color of 10YR 2/1. Hydrology was present in the form of saturation at the soil surface with free water observed in the test pit at 3 inches.

Wetland D: This wetland occupies the north/east facing slopes of the eastern portion of Parcel 2. Soils within this wetland were observed to be saturated at the surface to inundated with an approximate 4-8 inches. Soils were highly organic ranging in color from 10YR 2/1 to 10YR 3/1. One wetland plot resulted in gleyed mottles of Gley 2 5/5BG. During the delineation effort, it became apparent that Wetland D is a groundwater fed wetland. Wetland D has many finger like projections where natural springs were observed to be releasing groundwater to the surface. Wetland D consisted of emergent and forested cover types. Herbaceous species such as spotted Joe-Pye weed (*Eupatoriadelphus maculatus*), jewelweed (*Impatiens capensis*), broad-leaved cattail, and sensitive fern dominated the understory, while forested species such as green ash, red maple, northern white cedar (*Thuja occidentalis*) and riverbank birch (*Betula nigra*) dominated the overstory.

7.0 Summary and Conclusions

Through office research and field observations, it is apparent that Wetland A through D are directly or indirectly associated with surface waters or other wetland areas, at a minimum, during periods of high flow. As a result of this hydrologic connection, these delineated wetlands meet the U.S. Army Corps of Engineers' jurisdictional guidelines.

A total of four wetland areas were delineated within and immediately adjacent to the proposed ARE Park and sewer/water main infrastructure locations. Also identified within the project limits were 10 stream crossings, consisting of NYSDEC mapped and unmapped streams. The proposed layout of the sewer and water infrastructure has been designed to cause as little impact as possible to water resources in the project area. Installation of sewer and water mains will be completed using one of two methods. The majority of the infrastructure will be installed using the plow or open cut method. This method will only be used in upland areas, resulting in no impacts to delineated wetland or stream resources. The directional bore method will be used to install infrastructure in areas where wetland or stream resources have been identified within the proposed layout.

The amount of temporary or permanent wetland and water impacts for the proposed project has been quantified. All reasonable alternatives and design changes have been made to limit impacts to wetland areas and streams to zero permanent or temporary impacts. All appropriate erosion and sediment control measures will be used during construction to further limit potential impacts to the adjacent protected resources. Data associated with the delineated wetlands and streams within the project corridors is presented in Table 7, below.

Table 7. Delineated Wetland Resources within the Proposed ARE Park and Water and Sewer Main Alignments

Wetland/ Stream ID	Wetland/ Stream Type	Stream Order	Stream Bottom Composition	USACE Wetland Jurisdictional/ Non-Jurisdictional	Abutting/Adjacent	Figure Number
A	Emergent/Forested	-	-	Jurisdictional	Adjacent to a RPW	5d
B	Emergent/Forested	-	-	Jurisdictional	Abutting a RPW	5d
C	Emergent	-	-	Jurisdictional	Abutting a RPW	5g
D	Emergent/Forested	-	-	Jurisdictional	Abutting a RPW	5e
Stream 1	Intermittent	1	Unconsolidated silt and cobbles	-	RPW	5d
Stream 2	Perennial	1	Unconsolidated cobble and boulders	-	RPW	5d
Stream 3	Perennial	1	Unconsolidated silt and cobbles	-	RPW	5a
Stream 4	Perennial	1	Unconsolidated silt and cobbles	-	RPW	5a
Stream 5	Perennial	1	Unconsolidated silt and cobbles	-	RPW	5a
Stream 6	Perennial	2	Unconsolidated cobbles and boulders	-	RPW	5c
Stream 7	Perennial	1	Unconsolidated silt and cobbles	-	RPW	5c
Stream 8	Permanent	4	Unconsolidated cobbles and boulders	-	RPW	5g
Stream 9	Perennial	1	Unconsolidated silt and cobbles	-	RPW	5h
Stream 10	Permanent	4	Unconsolidated cobbles and boulders	-	RPW	5b and 5f

Since the proposed impact to wetlands and waters is zero, a Pre-construction Notification is not required for this project under the USACE's Section 404 Nationwide Permit Number 12 for Utility Line Activity. All delineated natural resources will be crossed using directional bore methods if they are within the proposed sewer or water infrastructure alignments. Directional boring of utilities beneath wetlands and Waters of the US will maintain a minimum depth of 4-feet between the bore and the stream bottom or wetland bottom

No impacts are expected to wetlands or Waters during the installation of the sewer and water infrastructure, or with the proposed site improvements on the ARE Park parcels. Therefore, it is not anticipated that a Section 401 Water Quality Certification (WQC) will be required from the New York State Department of Environmental Conservation prior to construction of the proposed project. Based on no impacts to streams within the scope of the project, it is not anticipated that an Article 15 - Protection of Waters permit will not need to be acquired from the NYSDEC.

8.0 Bibliography

- Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. *Ecological Communities of New York State*. Second Edition. (draft)
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mass.
- Munsell Color. 2009 revised edition. *Munsell Soil Color Charts*. Macbeth Division of Kollmorgen Instruments Corporation, Baltimore, Maryland.
- Newcomb, L. 1977. *Newcomb's Wildflower Guide*. Little, Brown and Company. United States of America.
- New York State Department of Environmental Conservation (NYSDEC). 2008. Ecological Zones – New York State – KML/KMZ File Format. NYSDEC, Albany, N.Y., Published July 3, 2008.
- Reed, P.B. Jr. 1988. *National List of Plant Species That Occur in Wetlands: 1988 National Summary*. U.S. Fish and Wildlife Service, Biological Report 88(24).
- Reschke, C. 1990. *Ecological Communities of New York State*. New York Natural Heritage Program. New York State Department of Environmental Conservation (NYSDEC). Latham, N.Y. 96p.
- U.S Army Corps of Engineers. 2009. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeastern Region*. Ed. J.S. Wakeley, R. W. Lichvar, and C.W. Noble. ERDC/EL TR 09-19. Vicksburg, Mississippi, U.S. Army Engineer Research and Development Center.
- USDA. NRCS. 2010. *Field Indicators of Hydric Soils in the United States*. Version 7. USDA, NRCS.
- USDA. NRCS. 2010. New York Hydric Soils List by State. New York - February 2010. www.soils.usda.gov/use/hydric/lists/state.html

USDA, NRCS. 2011. *Web Soil Survey*.

<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

USDA, NRCS. Soil Survey Geographic Database (SSURGO). Cornell University Geospatial Information Repository. 2007.

www.cugir.mannlib.cornell.edu/index.jsp

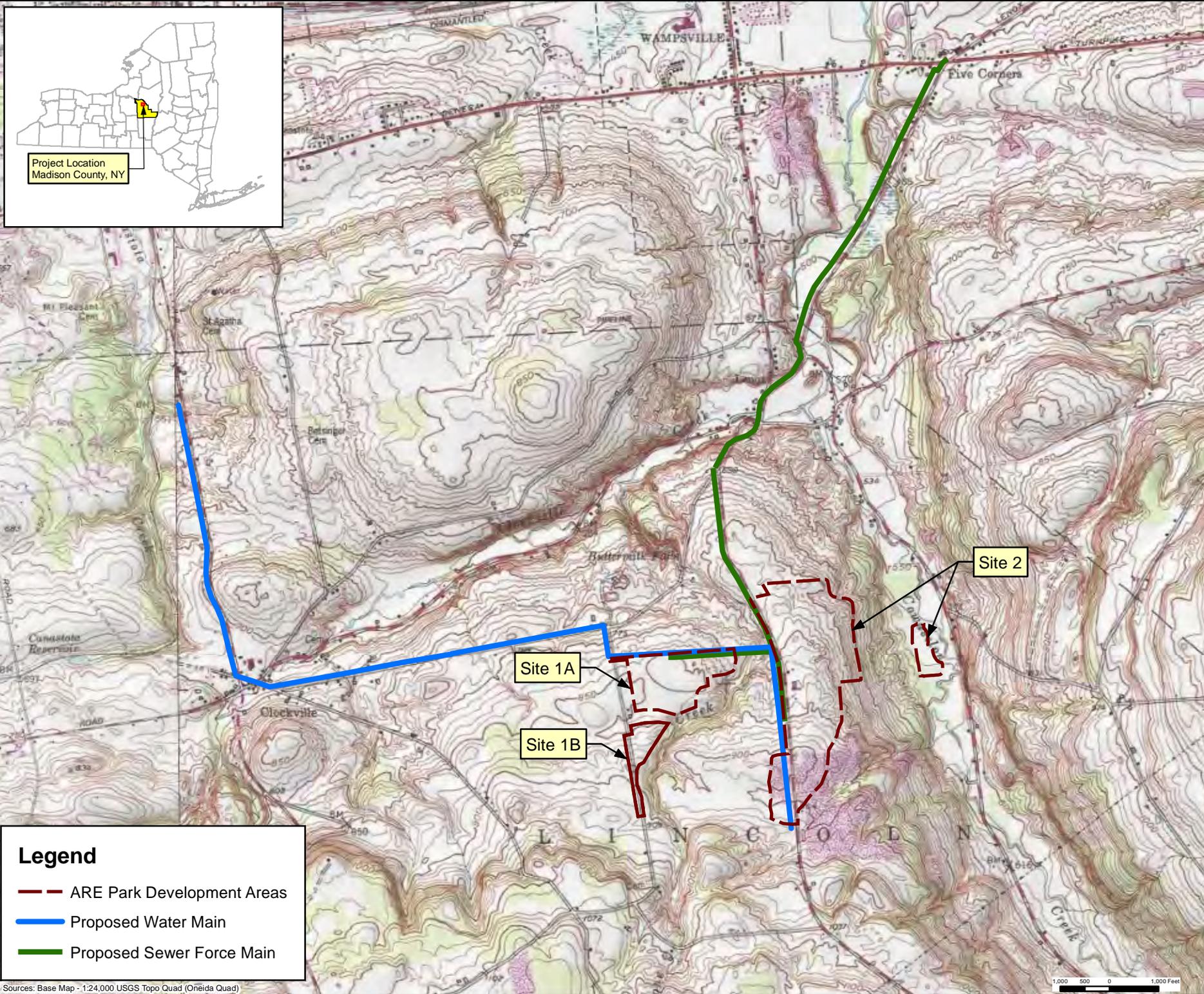
USDA, NRCS. 1989. *New York Hydric Soils and Soils With Potential Hydric Inclusions*. Soil Conservation Service, Syracuse, New York, Technical Guide II.

Figures

Figure 1
Topographic Location Map



Project Location
Madison County, NY



Legend

- ARE Park Development Areas
- Proposed Water Main
- Proposed Sewer Force Main

Sources: Base Map - 1:24,000 USGS Topo Quad (Oneida Quad)



Madison County ARE Park

Project Location Map

Madison County, New York

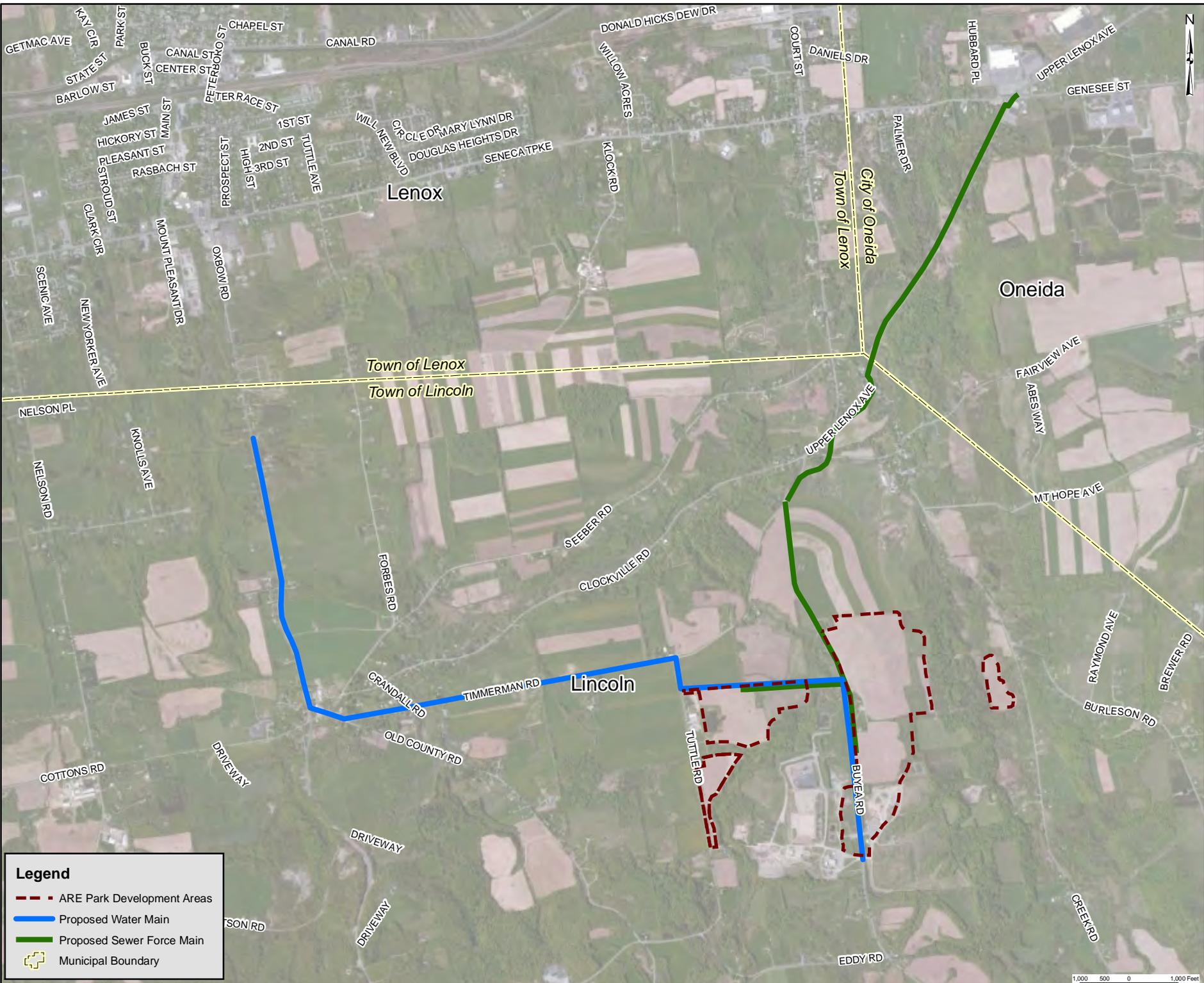
Town of Seneca



Date	September, 2011
Scale	As Shown
Figure Number	1
Project Number	154.091

Figures 2

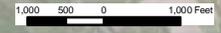
Project Location Maps



Legend

- - - ARE Park Development Areas
- Proposed Water Main
- Proposed Sewer Force Main
- Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps)



Madison County, New York

Town of Seneca

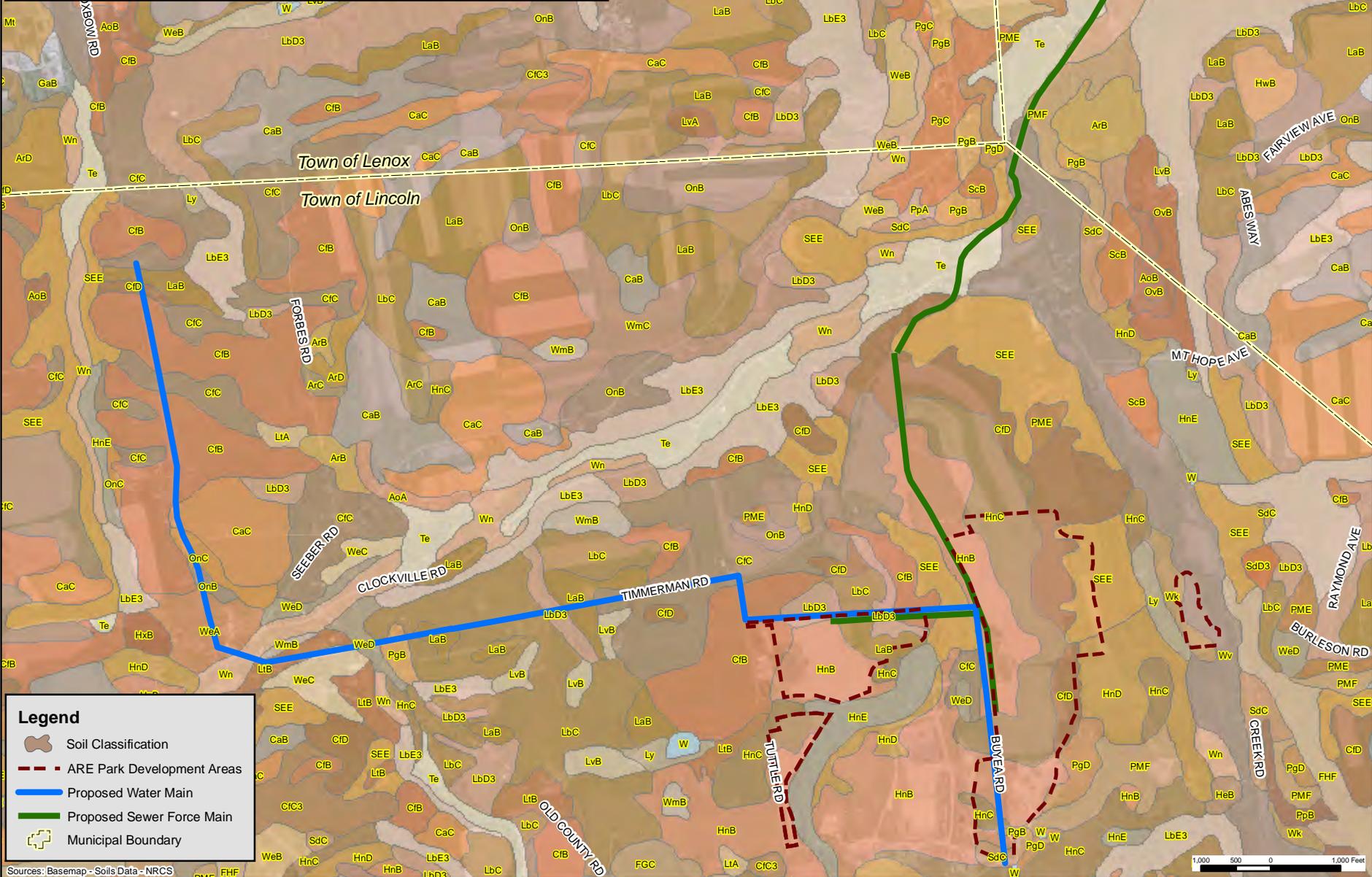
Madison County ARE Park

Site Location Map

Date	September, 2011
Scale	As Shown
Figure Number	2.1
Project Number	154.091

Figure 3
Soil Classifications

SOIL ID	DESCRIPTION	SOIL ID	DESCRIPTION
CaC	Camillus silt loam, 8 to 15 percent slopes	PgB	Palmyra gravelly loam, undulating
CiC	Cazenovia silt loam, 8 to 15 percent slopes	PgD	Palmyra gravelly loam, hilly
CiD	Cazenovia silt loam, 15 to 25 percent slopes	PKE	Palmyra-Arkport complex, steep
HnB	Honeoye silt loam, 3 to 8 percent slopes	PMF	Palmyra and Howard soils, very steep
HnC	Honeoye silt loam, 8 to 15 percent slopes	ScB	Schoharie silt loam, 3 to 8 percent slopes
HnD	Honeoye silt loam, 15 to 25 percent slopes	SdC	Schoharie silty clay loam, rolling
LaB	Lairdsville silt loam, 3 to 8 percent slopes	SEE	Schoharie-Cazenovia complex, steep
LbC	Lairdsville silty clay loam, 8 to 15 percent slopes	Te	Teel silt loam
LbD3	Lairdsville silty clay loam, 15 to 25 percent slopes, severely eroded	WeA	Wampsville gravelly silt loam, nearly level
LbE3	Lairdsville silty clay loam, 25 to 40 percent slopes, severely eroded	WeC	Wampsville gravelly silt loam, rolling
LtB	Lima silt loam, 3 to 8 percent slopes	WeD	Wampsville gravelly silt loam, hilly
Ly	Lyons silt loam	Wk	Wamers mucky silt loam
OnB	Ontario variant loam, 3 to 8 percent slopes	WmB	Wassaic silt loam, 3 to 8 percent slopes
OnC	Ontario variant loam, 8 to 15 percent slopes	Wn	Wayland silt loam
		Wv	Weaver silt loam



Sources: Basemap - Soils Data - NRCS

Madison County ARE Park

Soil Classifications

Town of Seneca

Madison County, New York



Date
September, 2011

Scale
As Shown

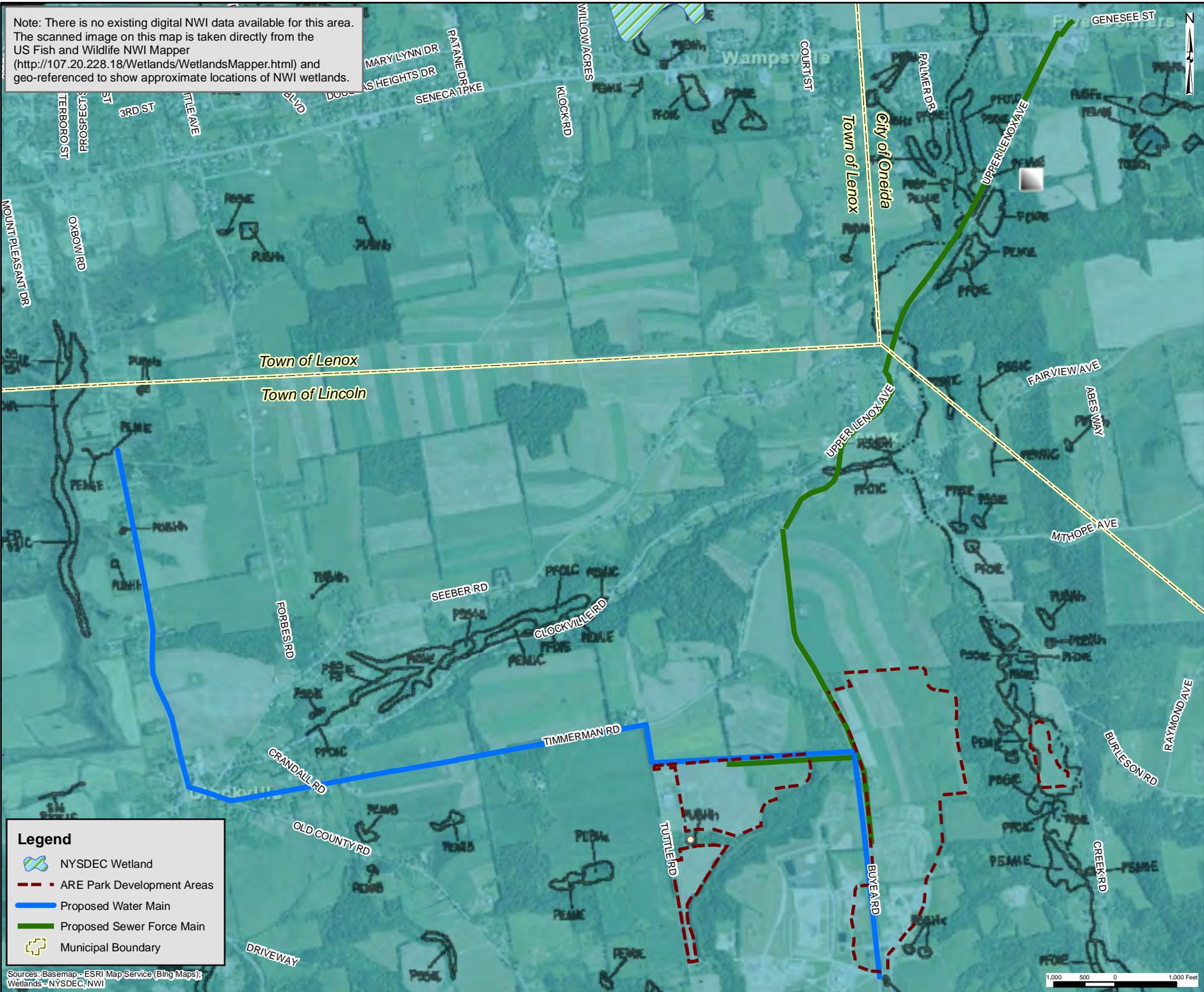
Figure Number
3

Project Number
154.091

Figures 4

National Wetland Inventory and Mapped NYSDEC Freshwater Wetlands

Note: There is no existing digital NWI data available for this area. The scanned image on this map is taken directly from the US Fish and Wildlife NWI Mapper (<http://107.20.228.18/Wetlands/WetlandsMapper.html>) and geo-referenced to show approximate locations of NWI wetlands.



- Legend**
- NYSDEC Wetland
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps); Wetlands - NYSDEC, NWI

Madison County ARE Park

Wetland Locations

Town of Seneca

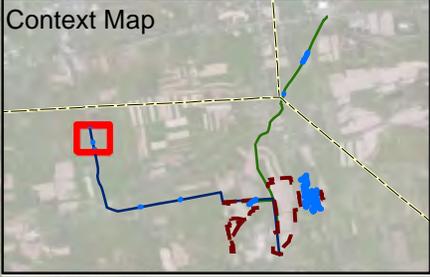
Madison County, New York



Date	September, 2011
Scale	As Shown
Figure Number	4
Project Number	154.091

Figure 5a to 5h

Wetland Delineation Maps and Hydrology



- Legend**
- Delineated Wetland Boundary
 - Approximate Stream Location
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
Delineated Wetlands - B&L



Madison County ARE Park

Delineated Wetlands

Madison County, New York

Town of Seneca

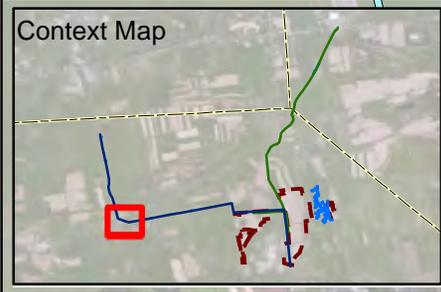


Date
September, 2011

Scale
As Shown

Figure Number
5a

Project Number
154.091



- Legend**
- Delineated Wetland Boundary
 - Approximate Stream Location
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
Delineated Wetlands - B&L



Madison County ARE Park
Delineated Wetlands

Town of Seneca



Date
September, 2011

Scale
As Shown

Figure Number
5b

Project Number
154.091

Madison County, New York



- Legend**
- Delineated Wetland Boundary
 - Approximate Stream Location
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
 Delineated Wetlands - B&L



Madison County ARE Park

Delineated Wetlands

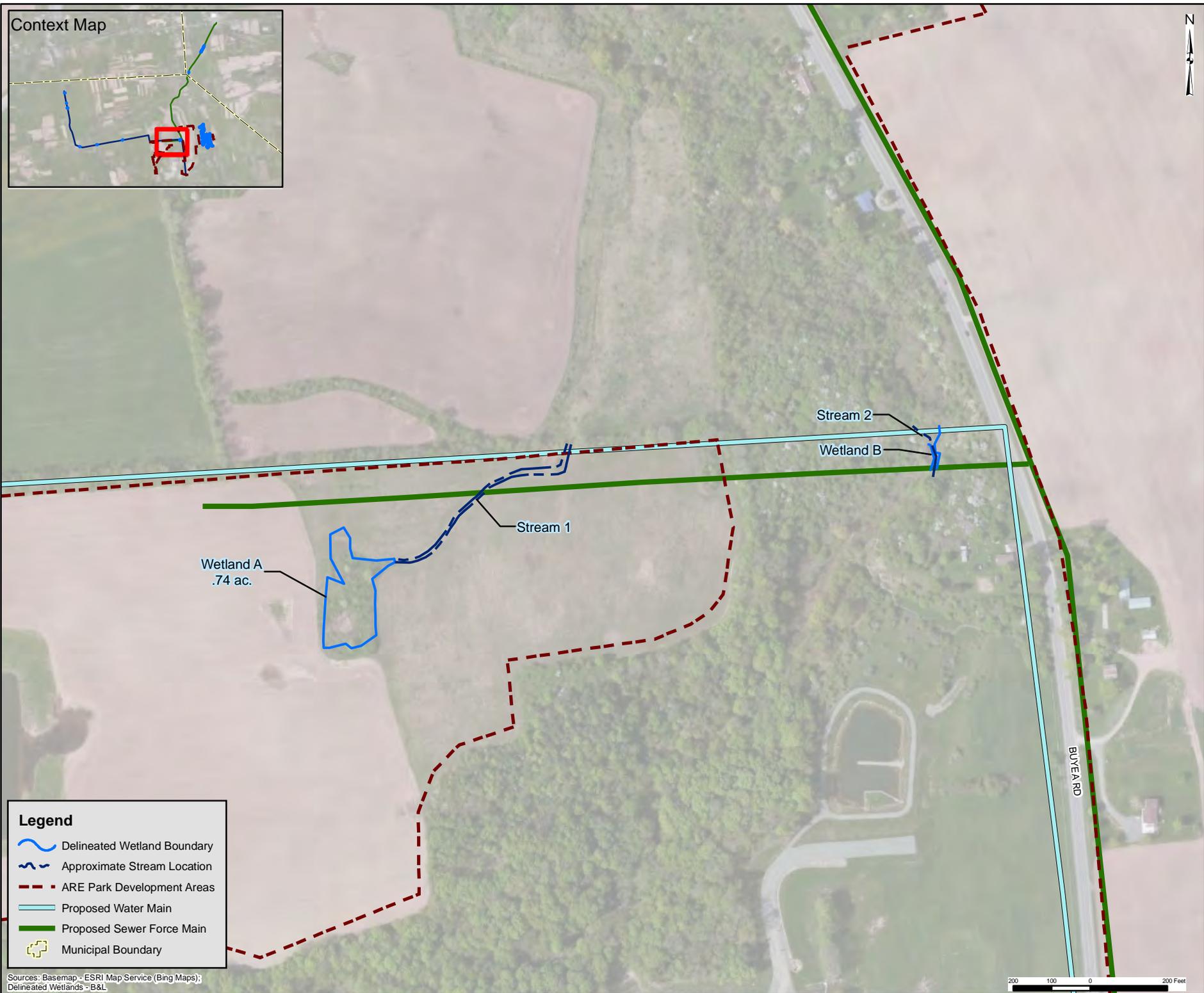
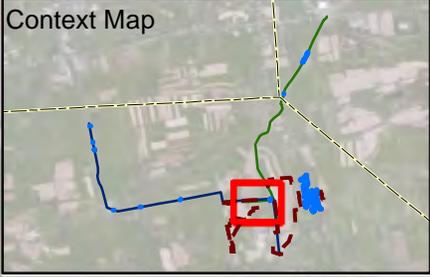
Madison County, New York

Town of Seneca



Barton Ogardice, P.C.
 Engineers, Environmental Scientists, Planners & Geotechnical Engineers

Date	September, 2011
Scale	As Shown
Figure Number	5c
Project Number	154.091



Wetland A
.74 ac.

Stream 1

Stream 2

Wetland B

BUYEA RD

Legend

- Delineated Wetland Boundary
- Approximate Stream Location
- ARE Park Development Areas
- Proposed Water Main
- Proposed Sewer Force Main
- Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
Delineated Wetlands - B&L



Madison County ARE Park

Delineated Wetlands

Madison County, New York

Town of Seneca

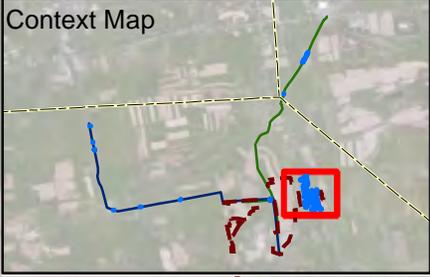


Date
September, 2011

Scale
As Shown

Figure Number
5d

Project Number
154.091



Legend

- Delineated Wetland Boundary
- Approximate Stream Location
- ARE Park Development Areas
- Proposed Water Main
- Proposed Sewer Force Main
- Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
Delineated Wetlands - B&L



Madison County ARE Park

Delineated Wetlands

Madison County, New York

Town of Seneca

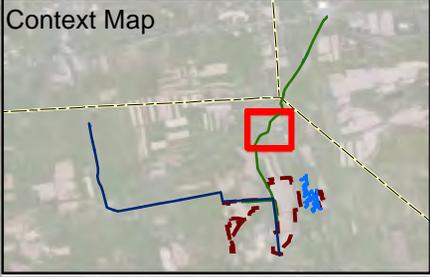


Date
September, 2011

Scale
As Shown

Figure Number
5e

Project Number
154.091



- Legend**
- Delineated Wetland Boundary
 - Approximate Stream Location
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
Delineated Wetlands - B&L



Madison County ARE Park
Delineated Wetlands

Madison County, New York

Town of Seneca

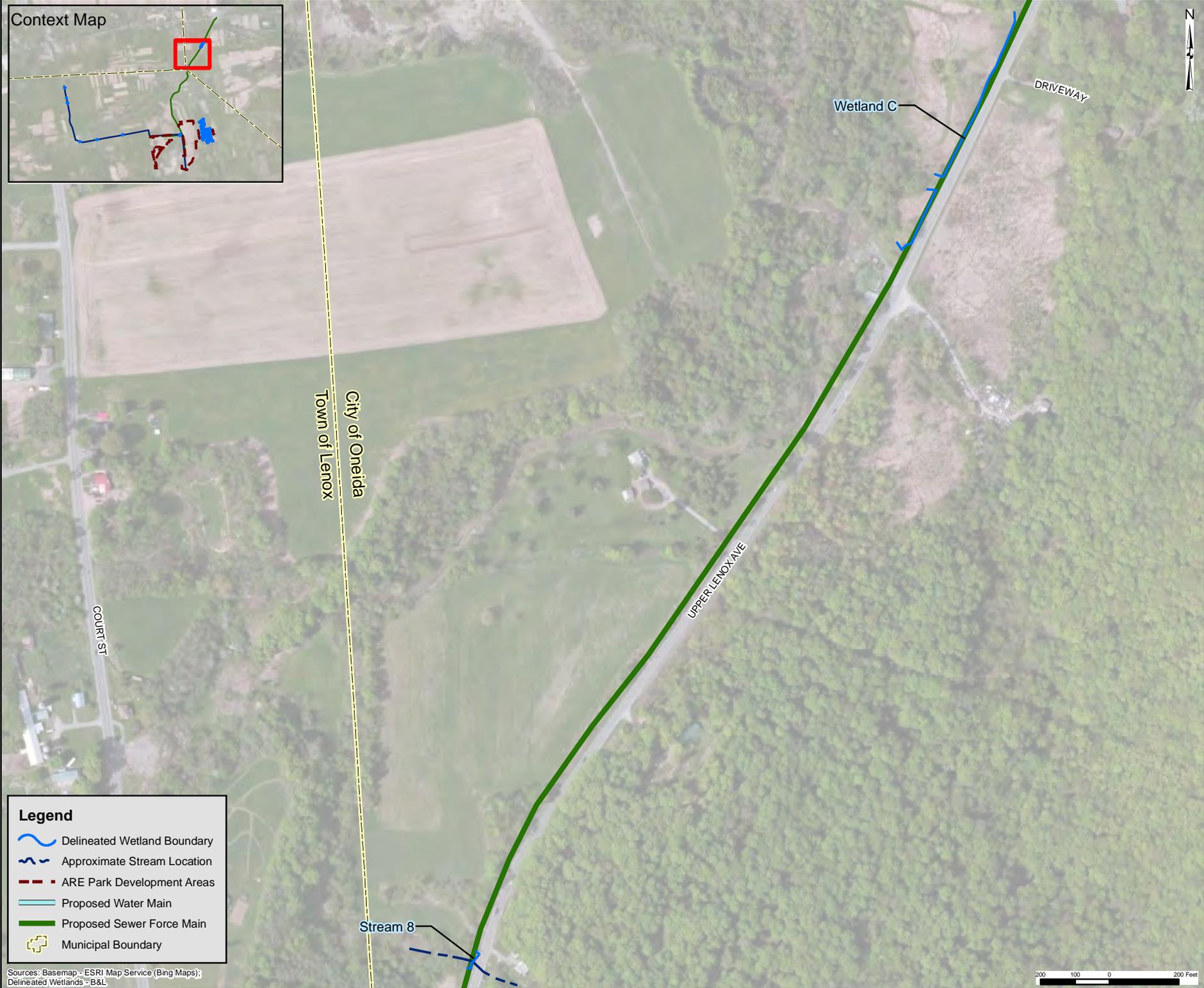


Date
September, 2011

Scale
As Shown

Figure Number
5f

Project Number
154.091



- Legend**
- Delineated Wetland Boundary
 - Approximate Stream Location
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
Delineated Wetlands - B&L



Madison County ARE Park

Delineated Wetlands

Madison County, New York

Town of Seneca



Date
September, 2011

Scale
As Shown

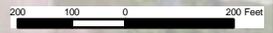
Figure Number
5g

Project Number
154.091



- Legend**
- Delineated Wetland Boundary
 - Approximate Stream Location
 - ARE Park Development Areas
 - Proposed Water Main
 - Proposed Sewer Force Main
 - Municipal Boundary

Sources: Basemap - ESRI Map Service (Bing Maps);
 Delineated Wetlands - B&L



Madison County ARE Park Delineated Wetlands

Date September, 2011
Scale As Shown
Figure Number 5h
Project Number 154.091

Madison County, New York
Town of Seneca

Appendices

Appendix A

Wetland Field Delineation Datasheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Madison County Sewer/Water Mains and ARE Park City/County: Madison Sampling Date: 8/2/11

Applicant/Owner: Madison County State: NY Sampling Point: DP-A

Investigator(s): Todd J. Phillips Section, Township, Range: Town/City of Oneida

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): concave

Slope (%): Level Lat: 43.043 Long: 75.711 Datum: NAD 83

Soil Map Unit Name: LaB-Lairdville silt loam NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes? X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	If yes, optional Wetland Site ID: <u>A</u>	
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks: (Explain alternative procedures here or in a separate report.)			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches):	
Water Table Present	Yes _____ No <u>X</u>	Depth (inches):	
Saturation Present	Yes _____ No <u>X</u>	Depth (inches):	
(includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
Multiple primary hydrology indicators.			

VEGETATION – Use scientific names of plants.

Sampling Point: A

<i>Tree Stratum</i> (Plot Size: 30 feet)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.	<i>Acer rubrum</i>	10	Yes	FAC			
2.							
3.							
4.							
5.							
6.							
7.							
		10	= Total Cover				
<i>Sapling/Shrub Stratum</i> (Plot Size: 15 feet)							Prevalence Index Worksheet: Total % Cover of: <u> </u> Multiply by: OBL species <u> </u> x 1 = <u> </u> FACW species <u> </u> x 2 = <u> </u> FAC species <u> </u> x 3 = <u> </u> FACU species <u> </u> x 4 = <u> </u> UPL species <u> </u> x 5 = <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A =
1.	<i>Cornus racemosa</i>	5	Yes	FAC			
2.							
3.							
4.							
5.							
6.							
7.							
		5	= Total Cover				
<i>Herb Stratum</i> (Plot Size: 5 feet)							Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation X Dominance Test is >50% Prevalence Index is #3.0 ¹ Morphological Adaptations ¹ (Provide supporting Data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must Be present, unless disturbed or problematic.
1.	<i>Leersia oryzoides</i>	10	No	OBL			
2.	<i>Scirpus cyperinus</i>	15	Yes	OBL			
3.	<i>Lysimachia nummularia</i>	20	Yes	OBL			
4.	<i>Symphotrichum novae-angliae</i>	10	No	FACW-			
5.	<i>Onoclea sensibilis</i>	5	No	FACW			
6.	<i>Euthamia graminifolia</i>	5	No	FAC			
7.	<i>Juncus effusus</i>	5	No	FACW			
8.							
9.							
10.							
11.							
12.							
13.							
14.							
		70	= Total Cover				
<i>Woody Vine Stratum:</i> (Plot Size:)							Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
1.	<i>Vitis riparia</i>	5	Yes	FACW			
2.							
3.							
4.							
5.							
6.							
7.							
		5	= Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)							

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Madison County Sewer/Water Mains and ARE Park City/County: Madison Sampling Date: 10/14/2009
 Applicant/Owner: Madison County State: NY Sampling Point: DP-B
 Investigator(s): Todd J. Phillips Section, Township, Range: Town/City of Oneida
 Landform (hillslope, terrace, etc.): Ravine-floodplain Local relief (concave, convex, none): none
 Slope (%): Steep Lat: 43.045 Long: 75.706 Datum: NAD 83
 Soil Map Unit Name: SEE Schoharie-Cazenovia Complex NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes? No
 Are Vegetation , Soil , or Hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	If yes, optional Wetland Site ID: <u>B</u>
Remarks: (Explain alternative procedures here or in a separate report.)			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): 9-inches

Saturation Present? Yes No Depth (inches): 4-inches **Wetland Hydrology Present?** Yes No

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DP-B

<i>Tree Stratum</i> (Plot Size: 30 feet)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.							
2.							
3.							
4.							
5.							
6.							
7.							
				= Total Cover			Prevalence Index Worksheet: Total % Cover of: Multiply by: OBL species x 1 = _____ FACW species x 2 = _____ FAC species x 3 = _____ FACU species x 4 = _____ UPL species x 5 = _____ Column Totals: (A) (B) Prevalence Index = B/A = _____
<i>Sapling/Shrub Stratum</i> (Plot Size: 15 feet)							
1.	Cornus amomum	5	Yes	FACW			
2.							
3.							
4.							
5.							
6.							
7.							
				5 = Total Cover			
<i>Herb Stratum</i> (Plot Size: 5 feet)							
1.	Impatiens capensis	15	Yes	FACW			
2.	Eupatoriadelphus maculatus	10	Yes	FACW			
3.	Aster spp.	-	-	-	X		
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
				25 = Total Cover			
<i>Woody Vine Stratum:</i> (Plot Size:)							
1.							
2.							
3.							
4.							
5.							
6.							
7.							
				= Total Cover			
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is #3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting Data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must Be present, unless disturbed or problematic.							
Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.							
Hydrophytic Vegetation Present? Yes <u>X</u> No _____							
Remarks: (Include photo numbers here or on a separate sheet.)							

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Madison County Sewer/Water Mains and ARE Park City/County: Madison Sampling Date: 10/14/2009
 Applicant/Owner: Madison County State: NY Sampling Point: DP-C
 Investigator(s): Todd J. Phillips Section, Township, Range: Town/City of Oneida
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): concave
 Slope (%): Level Lat: 43.069 Long: 75.696 Datum: NAD 83
 Soil Map Unit Name: Wn-Wayland Silt Loam NWI classification: PEM1E

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes? No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____		If yes, optional Wetland Site ID: <u>C</u>

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:
 Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present Yes No _____ Depth (inches): 6-inches
 Saturation Present Yes No _____ Depth (inches): 2-inches **Wetland Hydrology Present?** Yes No _____
 (includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DP-C

<i>Tree Stratum</i> (Plot Size: 30 feet)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:			
1.	Populus tremuloides			5	Yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)		
2.							Total Number of Dominant Species Across All Strata:	3 (B)		
3.							Percent of Dominant Species That Are OBL, FACW, or FAC:	67 (A/B)		
4.										
5.										
6.										
7.										
				5	= Total Cover					
<i>Sapling/Shrub Stratum</i> (Plot Size: 15 feet)										
1.	Cornus amomum			5	Yes	FACW	Total % Cover of:		Multiply by:	
2.							OBL species	_____ x 1 = _____		
3.							FACW species	_____ x 2 = _____		
4.							FAC species	_____ x 3 = _____		
5.							FACU species	_____ x 4 = _____		
6.							UPL species	_____ x 5 = _____		
7.							Column Totals:	_____ (A)	_____ (B)	
				5	= Total Cover		Prevalence Index = B/A =			
<i>Herb Stratum</i> (Plot Size: 5 feet)										
1.	Typha latifolia			60	Yes	OBL	Hydrophytic Vegetation Indicators:			
2.	Lythrum salicaria			10	No	OBL	_____ Rapid Test for Hydrophytic Vegetation			
3.	Lysimachia nummularia			10	No	OBL	_____ Dominance Test is >50%			
4.	Symphytotrichum novae-angliae			5	No	FACW-	_____ Prevalence Index is #3.0 ¹			
5.	Onoclea sensibilis			5	No	FACW	_____ Morphological Adaptations ¹ (Provide supporting Data in Remarks or on a separate sheet)			
6.	Solidago spp.			-	-	-	_____ Problematic Hydrophytic Vegetation ¹ (Explain)			
7.							_____ ¹ Indicators of hydric soil and wetland hydrology must Be present, unless disturbed or problematic.			
8.							Definitions of Vegetation Strata:			
9.							Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
10.							Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.			
11.							Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
12.							Woody vines – All woody vines greater than 3.28 ft in height.			
13.							Hydrophytic Vegetation Present?			
14.							Yes	X	No	_____
				90	= Total Cover					
<i>Woody Vine Stratum:</i> (Plot Size:)										
1.										
2.										
3.										
4.										
5.										
6.										
7.										
					= Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)										

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Madison County Sewer/Water Mains and ARE Park City/County: Madison Sampling Date: 10/12/2011
 Applicant/Owner: Madison County State: NY Sampling Point: DP-D
 Investigator(s): Todd J. Phillips Section, Township, Range: Town of Lincoln
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 15-25% Lat: 43.046 Long: 75.695 Datum: NAD 83
 Soil Map Unit Name: CfD-Cazenovia silt loam NWI classification: PSS1E/PFO1E/PEM1E

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes? No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	If yes, optional Wetland Site ID: <u>D</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:
 Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present Yes No _____ Depth (inches): 3-inches
 Saturation Present Yes No _____ Depth (inches): SURFACE **Wetland Hydrology Present?** Yes No _____
 (includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

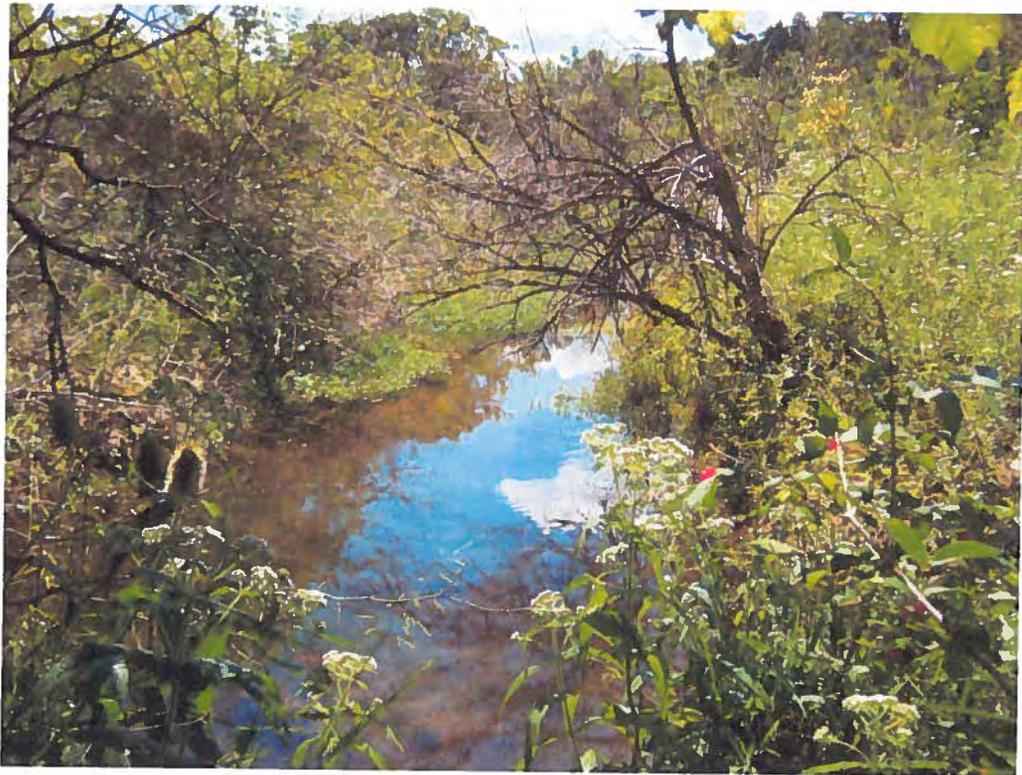
Sampling Point: DP-D

Tree Stratum (Plot Size: 30 feet)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1.	Betula nigra			7	Yes	FACW	
2.							
3.							
4.							
5.							
6.							
7.							
				7	= Total Cover		
Sapling/Shrub Stratum (Plot Size: 15 feet)							Prevalence Index Worksheet: Total % Cover of: Multiply by: OBL species x 1 = _____ FACW species x 2 = _____ FAC species x 3 = _____ FACU species x 4 = _____ UPL species x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1.	Thuja occidentalis			3	Yes	FACW	
2.	Carpinus caroliniana			3	Yes	FAC	
3.							
4.							
5.							
6.							
7.							
				6	= Total Cover		
Herb Stratum (Plot Size: 5 feet)							Hydrophytic Vegetation Indicators: Rapid Test for Hydrophytic Vegetation X Dominance Test is >50% Prevalence Index is #3.0 ¹ Morphological Adaptations ¹ (Provide supporting Data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must Be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1.	Onoclea sensibilis			20	Yes	FACW	
2.	Osmunda cinnamomea			20	Yes	FACW	
3.	Geum canadense			10	No	FACU	
4.	Impatiens capensis			10	No	FACW	
5.	Solidago rugosa			7	No	FAC	
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
				67	= Total Cover		
Woody Vine Stratum: (Plot Size:)							
1.							
2.							
3.							
4.							
5.							
6.							
7.							
				= Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)							

Appendix B
Site Photographs



Photograph of Wetland C on west side Upper Lenox Avenue.



Open water wetland habitat within Wetland D.



Natural groundwater spring located within Wetland D.



Inundation within Wetland D due to groundwater discharges from springs.



View of emergent cover type within Wetland A.



View of upland-wetland interface of Wetland A.



Photograph of sewer main crossing location of Cowaselon Creek, Stream 10B.



View northeast of Stream 1, drainage of Wetland A.

Appendix F
Traffic Impact Analyses

Agricultural and Renewable Energy Park

**Town of Lincoln
Madison County, New York**

**Appendix F
Traffic Impact Analysis**

November 2011

Agricultural and Renewable Energy Park

Town of Lincoln
Madison County, New York

Appendix F
Traffic Impact Analysis

November 2011

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1.0 Introduction

A traffic impact analysis was conducted for the proposed Madison County Agriculture and Renewable Energy Park (ARE Park) located in a rural area in the Town of Lincoln, Madison County, New York. The purpose of the traffic assessment is to determine existing background traffic conditions at the proposed site, and use this information to assess potential traffic impacts on roadways adjacent to the project site due to the proposed ARE Park operations.

2.0 Existing Conditions

2.1 Road Conditions and Setting

Sites 1A and 1B will have access on Tuttle Road. Tuttle Road is owned and maintained by the Town of Lincoln and is classified as a Local Rural Road. The section of Tuttle Road adjacent to the project site has a north-south orientation and consists of a horizontal tangent. Land use along Tuttle Road near the project site is mostly agriculture. The Town of Lincoln highway garage is located at the north end of Tuttle Road near Timmerman Road. The existing roadway consists of 20-ft total pavement width with 2-ft gravel shoulders. Terrain on Tuttle Road is considered rolling with limited sight distances. The pavement surface on Tuttle Road is in good condition. No speed limit is posted for Tuttle Road in the project area. Therefore this stretch of road has a statutory speed limit of 55 MPH.

Site 2 will have access on Buyea Road. Buyea Road (CR 54) is owned and maintained by Madison County and is classified as a Minor Collector Road. Buyea Road has a north/south orientation through the ARE Park site and consists of a tangent and horizontal curve at the north end of the site. Land uses along Buyea Road include residential, agriculture, and commercial. Buyea Road also contains several entrances to the Madison County Landfill and other businesses. The existing roadway consists of one 11-ft travel lane in each direction with 2-ft paved shoulders. Terrain on Buyea Road is considered rolling with limited sight distances and is a no-passing zone. The pavement surface on Buyea Road is in good condition. No speed limit for Buyea Road is posted in the project area. Therefore, this roadway has a statutory speed limit of 55 MPH within the project area.

2.2 Existing Traffic

Traffic data including vehicle count, vehicle classification, and speed data were collected on Buyea Road and Tuttle Road with traffic tubes in 2011. Traffic on Buyea Road consists of local traffic, commercial trucks, and agricultural vehicles. Traffic on Tuttle Road consists of mostly local traffic and agricultural vehicles. Table 1 summarizes the existing traffic conditions.

	AADT (vpd)	DHV (vph)	% Trucks¹	85th Percentile Speed
Buyea Road	1251	188	10%	56 MPH
Tuttle Road	221	42	<1%	53 MPH

1. FHWA Classes F4-F13

3.0 Traffic Impact Assessment

3.1 Future No-Build Traffic Volumes

Future No-Build traffic volumes were estimated based on an analysis of the existing population growth trends for the Town of Lincoln and Madison County. These volumes represent traffic that would exist without construction of the proposed ARE Park site. Based on a historical population growth in this area, a traffic growth rate of 0.5% per year was applied to the 2011 existing traffic volumes to account for background growth. Table 2 summarizes the future no-build traffic forecast.

	AADT (vpd)	DHV (vph)	% Trucks
Buyea Road	1382	207	10%
Tuttle Road	244	46	<1%

3.2 Trip Generation

The number of trips expected to be generated by the proposed project at build-out was estimated using the methodology of the Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition. The study used land use code (LUC) 130 – Industrial Park to estimate the number of trips generated by the project. For the purposes of this study, the number of employees at build-out was used as the independent variable to estimate the number of trip ends during the AM and PM peak hours of traffic. Based on the ITE trip generation rates and the build out estimate of 506 employees, the proposed project is estimated to generate 255 new vehicle trips during the AM peak hour (220 trips entering and 36 trips existing) and 254 trips during the PM peak hour (51 trips entering and 203 trip exiting). Table 3 summarizes the trip generation estimate for ARE Park.

Table 3. Vehicle Trips Generated			
	Entering	Exiting	Total
AM Peak Hour	219	36	255
PM Peak Hour	51	203	254

3.3 Trip Distributions

Traffic generated by the proposed project was distributed among the three sites based on the relative percentage of area of each site. It is expected that approximately 80% of the site generated trips will be from the Buyea Road Site 2 access, 15% will be from Tuttle Road Site 1A access, and 5% will be from Tuttle Road Site 1B access. Table 4 summarizes the expected trip distribution at each site.

Table 4. Trip Distribution			
AM Peak Hour			
	Entering	Exiting	Total
Site 1A - Tuttle	33	5	38
Site 1B - Tuttle	11	2	13
Site 2 - Buyea	175	29	204
PM Peak Hour			
	Entering	Exiting	Total
Site 1A - Tuttle	8	30	38
Site 1B - Tuttle	3	10	13
Site 2 – Buyea	41	162	203

3.4 Level of Service

A Level of Service traffic analysis was completed to determine the current and future use and capacity of the transportation system adjacent to the ARE Park site. The level of service evaluation was performed using Highway Capacity Software (HCS+, version 5.3) which automates the procedures

contained in the 2000 Highway Capacity Manual. The level of service calculation for the future condition includes the development of the proposed ARE Park site. Level of service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Letters designate each level of service, from A to F, with a LOS A representing the best operating conditions and a LOS F the worst. Each level of services represents a range of operating conditions and the driver's perception of those conditions. Traffic data collected with the 2011 tube counts were used to determine peak hour LOS for both Buyea Road and Tuttle Road. Table 5 summarizes the Peak Hour Level of Service for the existing condition, the projected No-Build condition and the projected 2031 Build Out condition.

	2011 Existing	2031 No-Build	2031 Build
Buyea Road	B	B	C
Tuttle Road	A	A	A

The level of service summary indicates that Buyea Road currently operates at a LOS B during peak hours with a design hourly volume of 188 vph. Given the existing conditions on Buyea Road, an additional 76 vehicles per hour would cause the level of service to degrade to a LOS C. With the additional 204 vehicles per hour expected for Buyea Road with the build-out of ARE Park, the resulting level of service will be LOS C for Buyea Road under the future build conditions. Traffic flows under this build condition are considered stable but are susceptible to congestion due to slow-moving vehicles such as trucks climbing grades and farm vehicles. Average travel speed during peak hours is expected to be 43 MPH and percent time-spent-following to be 59%. The no-passing

restriction on Buyea Road adjacent to the project site has a significant impact on the percent time-spent-following and subsequently the level of service grade.

The level of service for Tuttle Road currently operates at a LOS A during peak hours. With additional traffic generated by ARE Park and background growth, the level of service is expected to remain the same. Average travel speed during peak hours is expected to be 44 MPH and percent time-spent-following to be 31%.

3.5 Mitigation

The ARE Park site is estimated to generate 255 new vehicle trips during the AM peak hour (220 trips entering and 36 trips existing) and 254 new vehicle trips during the PM peak hour (51 trips entering and 203 trip exiting). Given the rural character of the area, it is possible that the actual traffic volumes generated by the project may be less than estimated upon completion of the project.

The level of service analysis indicates that the level of service along Buyea Road could degrade from an existing LOS B to a LOS C upon build-out. As described in the analysis, traffic flows are expected to be stable but are susceptible to congestion due to slow moving vehicles.

According to the New York State Department of Transportation *Highway Design Manual*, LOS C or better is desirable and LOS D is the minimum for the design year of a non-interstate project.

An analysis was completed to determine the traffic volume thresholds that would trigger a change in level of service from the projected build out volumes. This analysis is presented in Table 6.

Table 6. Thresholds for Changes in Level of Service				
Buyea Rd	(with 100% no passing)			LOS
Year	AADT	DHV	% Trucks	
2011	1251	188	10%	B
2031	1382	207	10%	B
2011 Build	2775	392	10%	C
2031 Build	2906	411	10%	C
LOS C Threshold		264	10%	C
LOS D Threshold		747	10%	D
Tuttle Rd	with (50% no passing)			LOS
Year	AADT	DHV	% Trucks	
2011	221	42	1%	A
2031	244	46	1%	A
2011 Build	603	93	9%	A
2031 Build	626	97	9%	A
LOS B Threshold		166	9%	B
LOS C Threshold		409	9%	C

An additional 483 vehicles per hour would be required during the peak hour to bring the level of service on Buyea Road from LOS C to LOS D, which is considered undesirable. This scenario is considered to be highly unlikely, given the rural nature of the project area.

No mitigation measures are proposed for either Tuttle Road or Buyea Road because the projected level of service for both roads is considered to be acceptable based upon New York State Department of Transportation standards.

4.0 Conclusions

Based on the traffic volumes evaluated herein, it is unlikely that the project area will experience unacceptable traffic impacts.

5.0 References

Institute of Transportation Engineers. December, 2008. *Trip Generation Manual*. 8th edition, 1919 pages.

McTrans Moving Technology. *Highway Capacity Software*, 2010.

New York State Department of Transportation. *Highway Design Manual*, Chapter 5. Basic Design. April 13, 2011. Available from:
https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/hdm-repository/chapt_5_final.pdf?nd=nysdot

Transportation Research Board. *Highway Capacity Manual 2000*. 1134 pages.