DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

CAYUGA COUNTY
EMERGENCY RADIO COMMUNICATIONS PROJECT

VOLUME II OF II

Lead Agency:

Cayuga County Legislature
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Accepted by Lead Agency: October 26, 2010

Public Comments Due by: November 29, 2010

October 2010

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT
CAYUGA COUNTY EMERGENCY RADIO COMMUNICATIONS PROJECT

VOLUME II OF II

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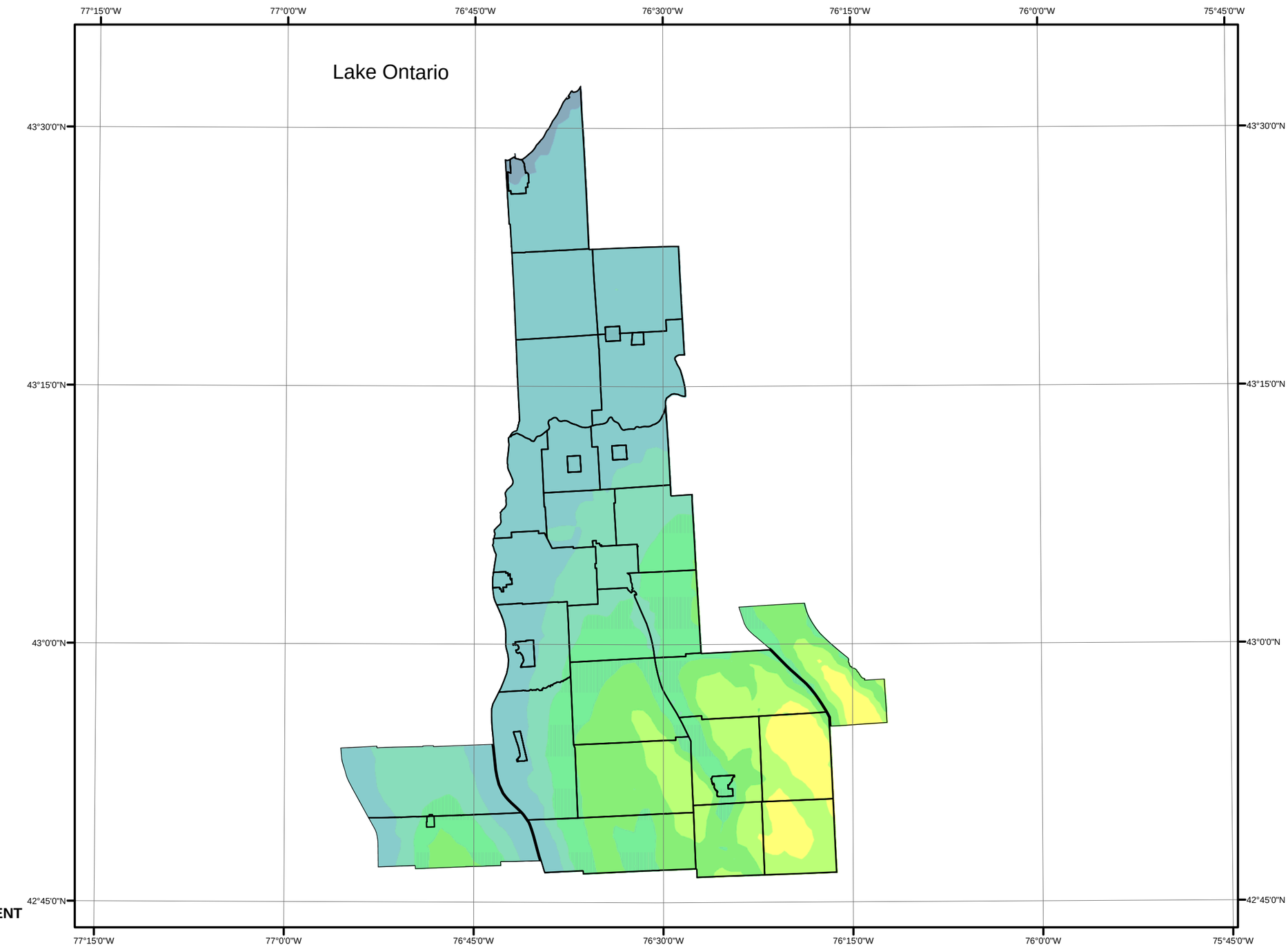
Reference: Evaluation of Potential Uncontrolled Exposure to Microwave Frequency Electromagnetic Fields Generated by the Planned Cayuga County, New York Emergency Telecommunications Network, RAM TRAC Corporation, April 2010 ("Oswego EMF Study")

APPENDIX A

GEOLOGY RESOURCES

STUDY AREA ELEVATION



Legend

- Municipal Boundaries
- County Boundary

Elevation

- < 0
- 0 - 297 ft
- 298 - 529 ft
- 530 - 762 ft
- 763 - 995 ft
- 996 - 1227 ft
- 1228 - 1538 ft
- 1539 - 2003 ft
- 2004 - 2701 ft
- 2702 - 3632 ft
- 3632 - 4717 ft
- 4718 - 8387 ft

NOTE: DATA OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE GEOSPATIAL DATA GATEWAY.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
ELEVATION
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix A, Figure 1

STUDY AREA
BEDROCK GEOLOGY

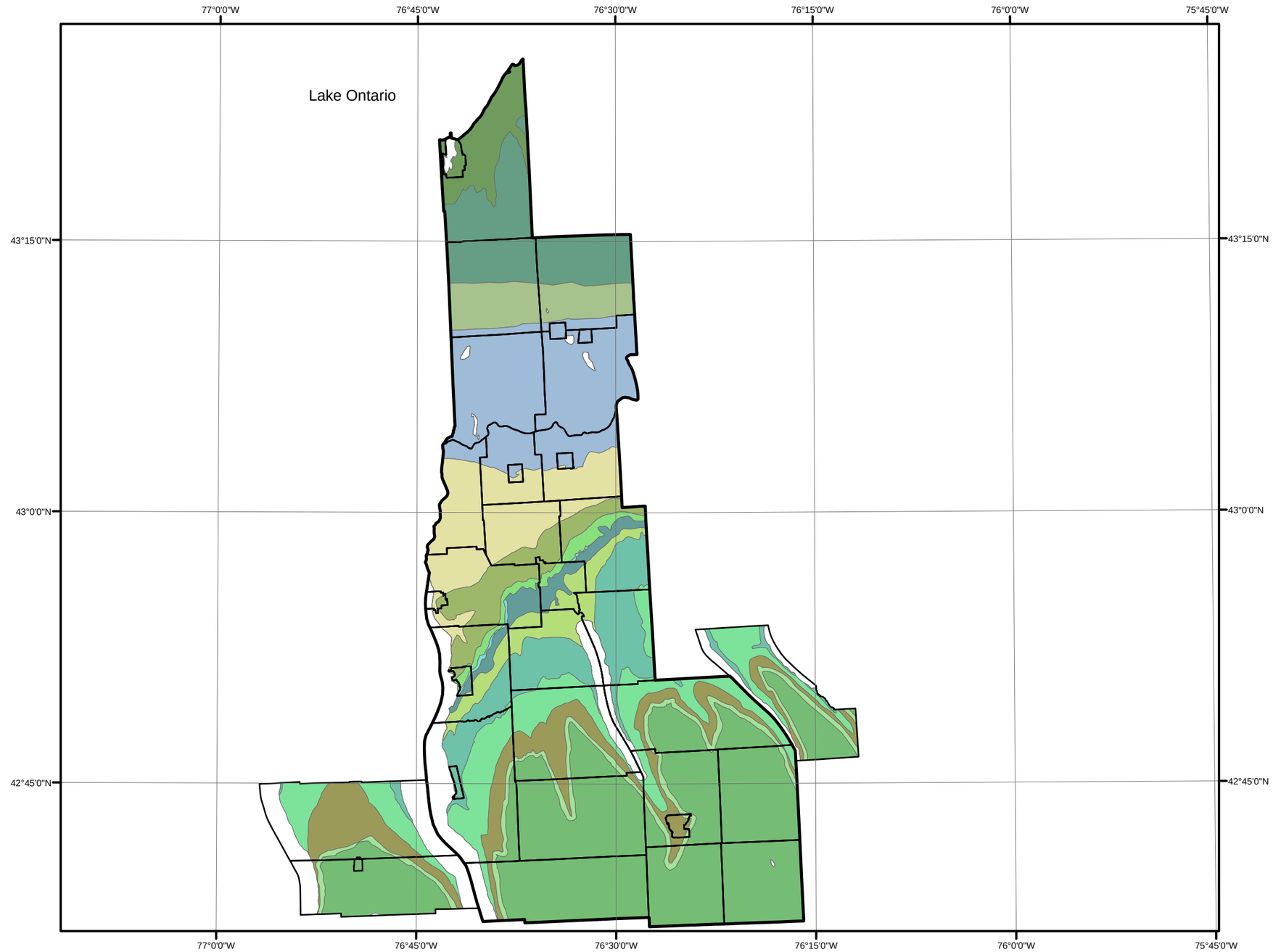
Legend

- County Boundary
- Municipal Boundaries

Bedrock Geology

- Dg -West River Shale
- Dhg - Port Ewen Formation
- Dhld - Ludlowville Formation
- Dhmo - Moscow Formation
- Dhmr - Marcellus Formation
- Dhsk - Skaneateles Formation
- Do - Oriskany Sandstone
- Don - Onondaga Limestone
- Dt - Tully Limestone
- Sab - Akron Dolostone
- Scl - Rochester Shale
- Scy - Syracuse Formation
- Sl - Geulph Dolostone
- SmOq - Grimsby Formation
- Ssy - Syracuse Formation
- Sv - Vernon Formation
- Water

NOTE: DATA OBTAINED FROM NYS MUSEUM.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

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SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110		STUDY AREA BEDROCK GEOLOGY *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182	DATE: 10/12/2010	FIGURE NO: Appendix A, Figure 2

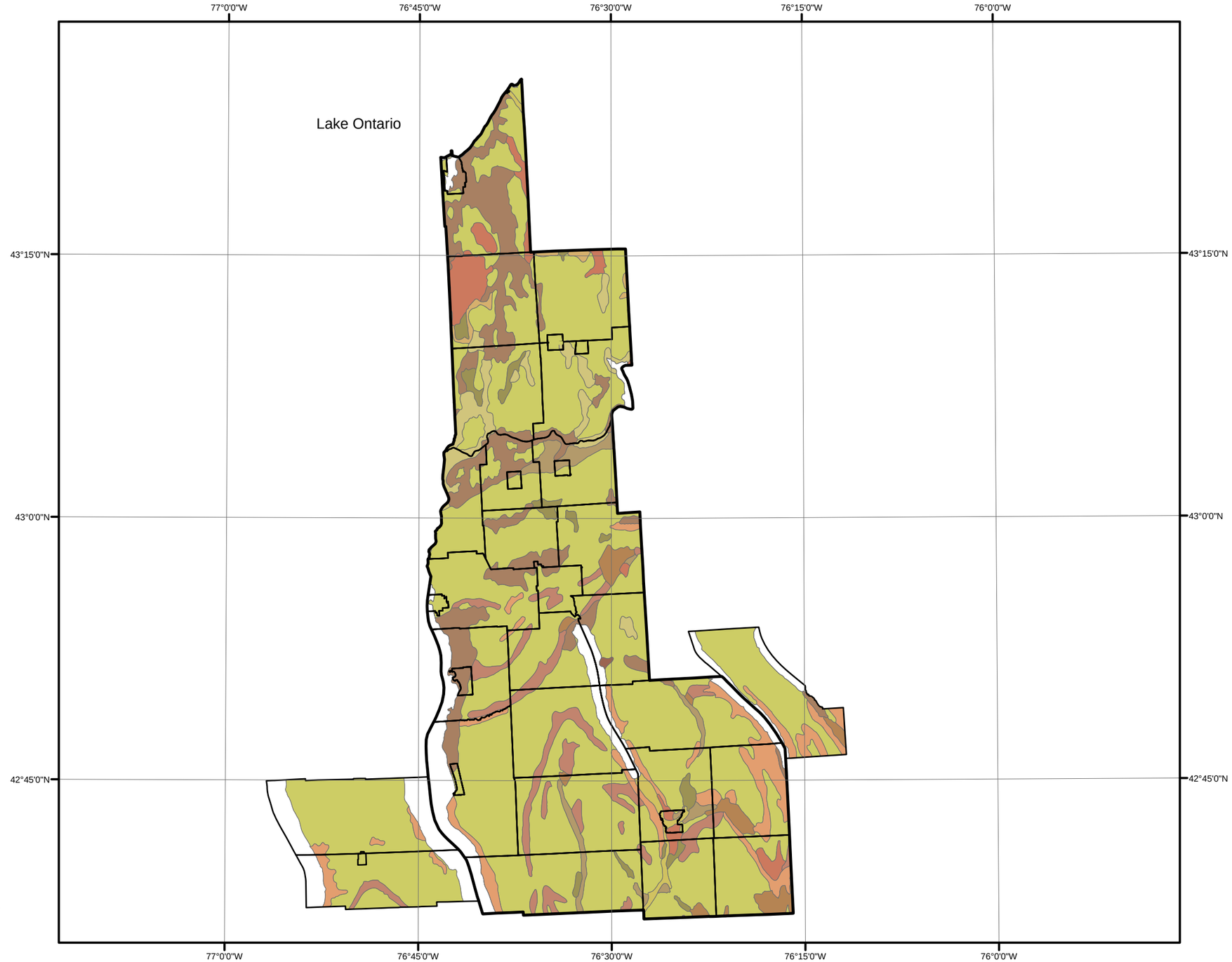
STUDY AREA
SURFICIAL GEOLOGY

Legend

- County Boundary
- Municipal Boundaries

Surficial Geology

- al - Recent alluvium
- alf - Alluvial fan
- Surface water
- k -Kame deposits
- km - Kame moraine
- lb - Lacustrine beach
- ls - Lacustrine sand
- lsc - Lacustrine silt and clay
- og - Outwash sand and gravel
- pm - Swamp deposits
- r - Bedrock
- t - Till
- tm - Till moraine



NOTE: DATA OBTAINED FROM NEW YORK STATE MUSEUM.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

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LATHAM, NEW YORK 12110

STUDY AREA
SURFICIAL GEOLOGY
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/10 | FIGURE NO: Appendix A, Figure 3

APPENDIX B
WATER RESOURCES

STUDY AREA
RECOGNIZED AQUIFERS

Legend

Municipal Boundaries

County Boundary

Sole Source Aquifer
Cortland-Homer Preble Aquifer

Unconsolidated Primary Aquifer

1 Fulton
2 Syracuse
3 Cortland

Unconsolidated Principal/Primary Aquifers

Unconfined Aquifer, 10-100 gpm

Unconfined Aquifer, >100 gpm

Confined Aquifer, 5->500 gpm

Potentially Productive Bedrock Aquifers

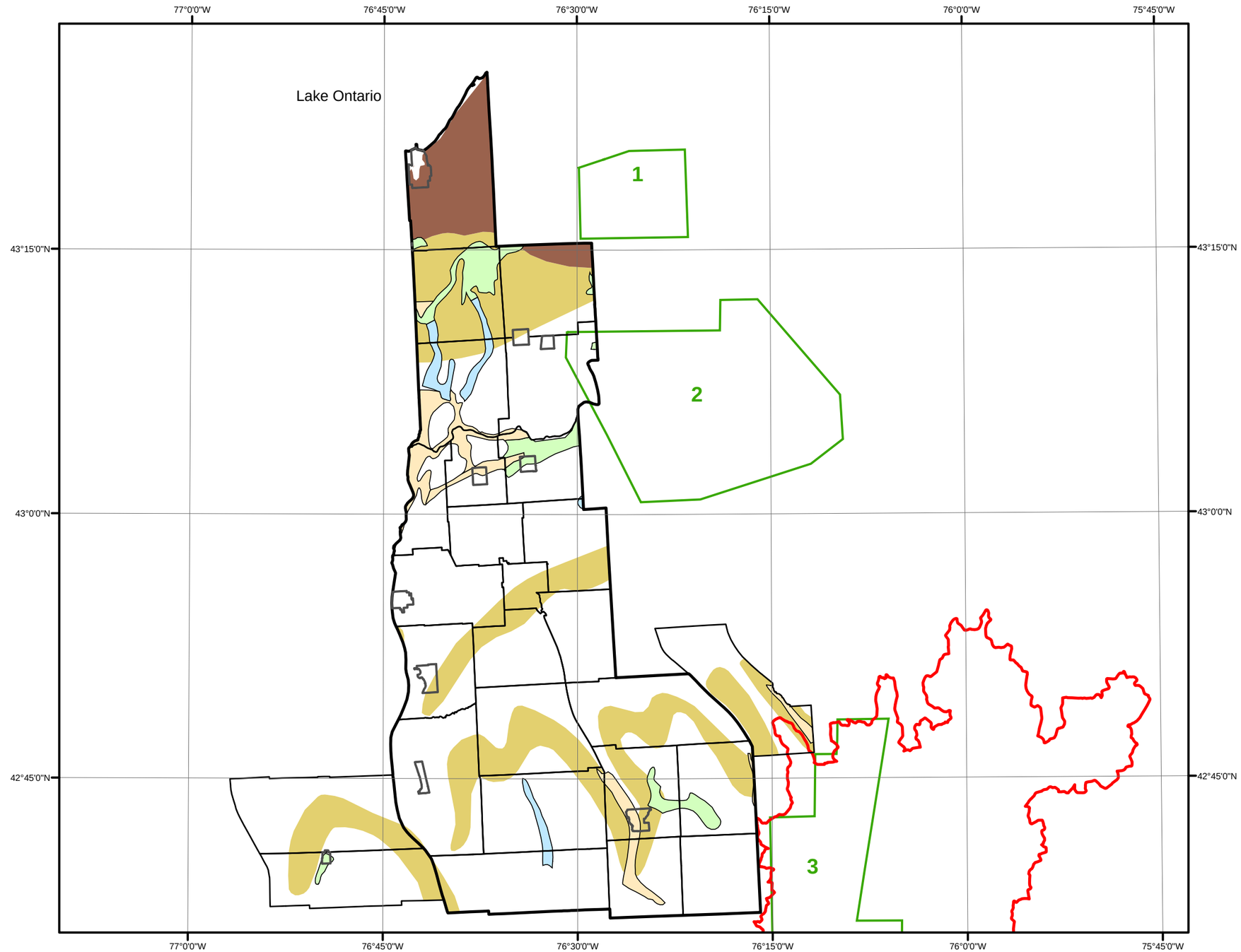
Carbonate-rock aquifers

Sandstone and carbonate-rock aquifers

Sandstone aquifers

Semiconsolidated sand aquifers

NOTE: DATA OBTAINED FROM NYS GIS CLEARINGHOUSE.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

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LATHAM, NEW YORK 12110

STUDY AREA
RECOGNIZED AQUIFERS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

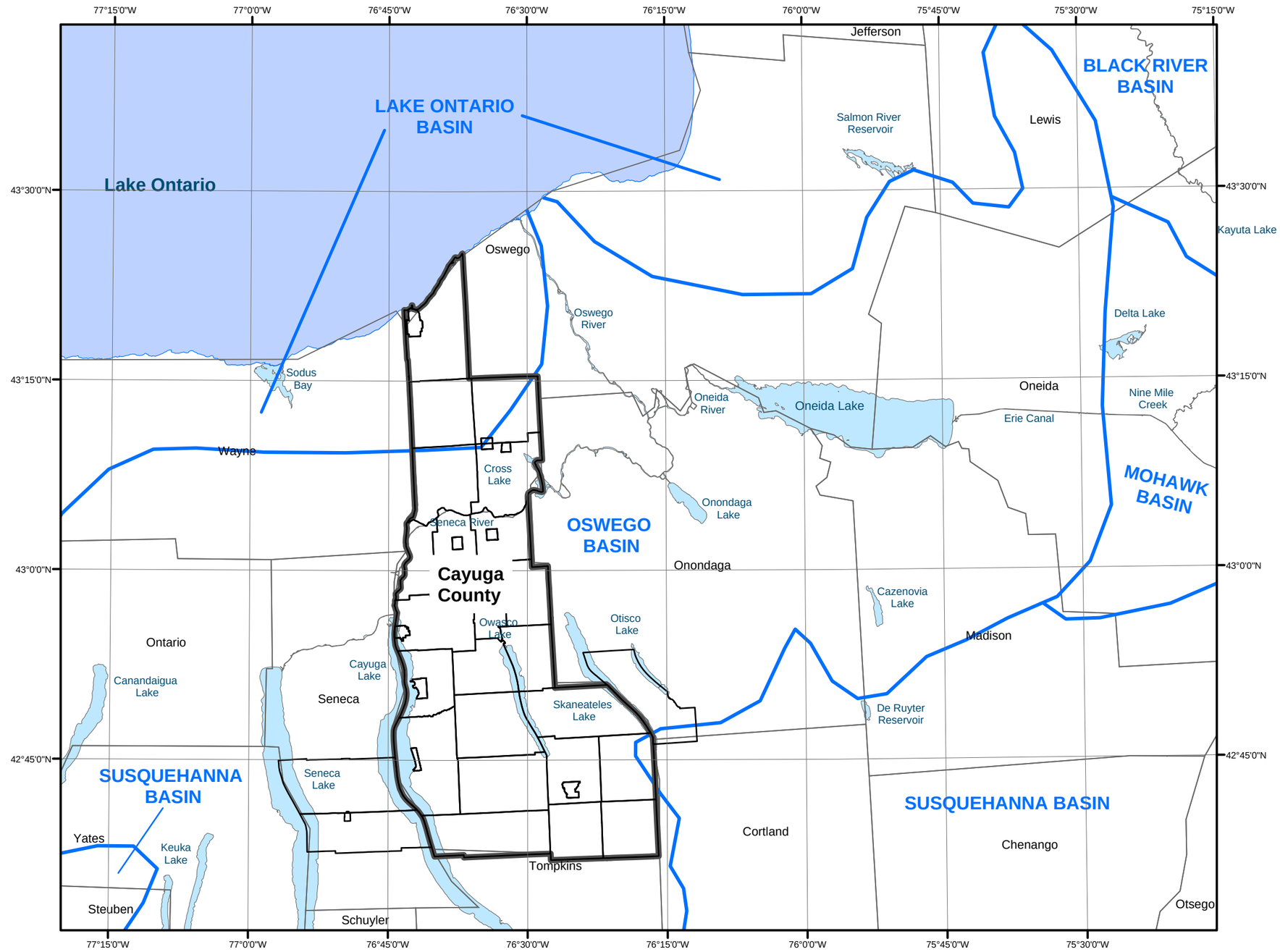
PROJECT NO: 10182 | DATE:10/12/2010 | FIGURE NO: Appendix B, Figure 1

STUDY AREA
MAJOR DRAINAGE BASINS AND WATER BODIES

Legend

- Cayuga County Boundary
- Major Drainage Basins
- Municipal Boundaries
- Lake Ontario
- Water Bodies

NOTE: DATA OBTAINED FROM CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY.



0 5 10 20 30 40 Miles

1 INCH = 10 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110	STUDY AREA MAJOR DRAINAGE BASINS AND WATER BODIES *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182 DATE: 10/12/2010	FIGURE NO: Appendix B, Figure 2

STUDY AREA
MEAN ANNUAL RUNOFF
1951-1980

Legend

Mean Annual Runoff (inches)

County Boundary

SOURCE: D. A. RANDALL, 1996

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

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ENVIRONMENTAL GROUP, INC.
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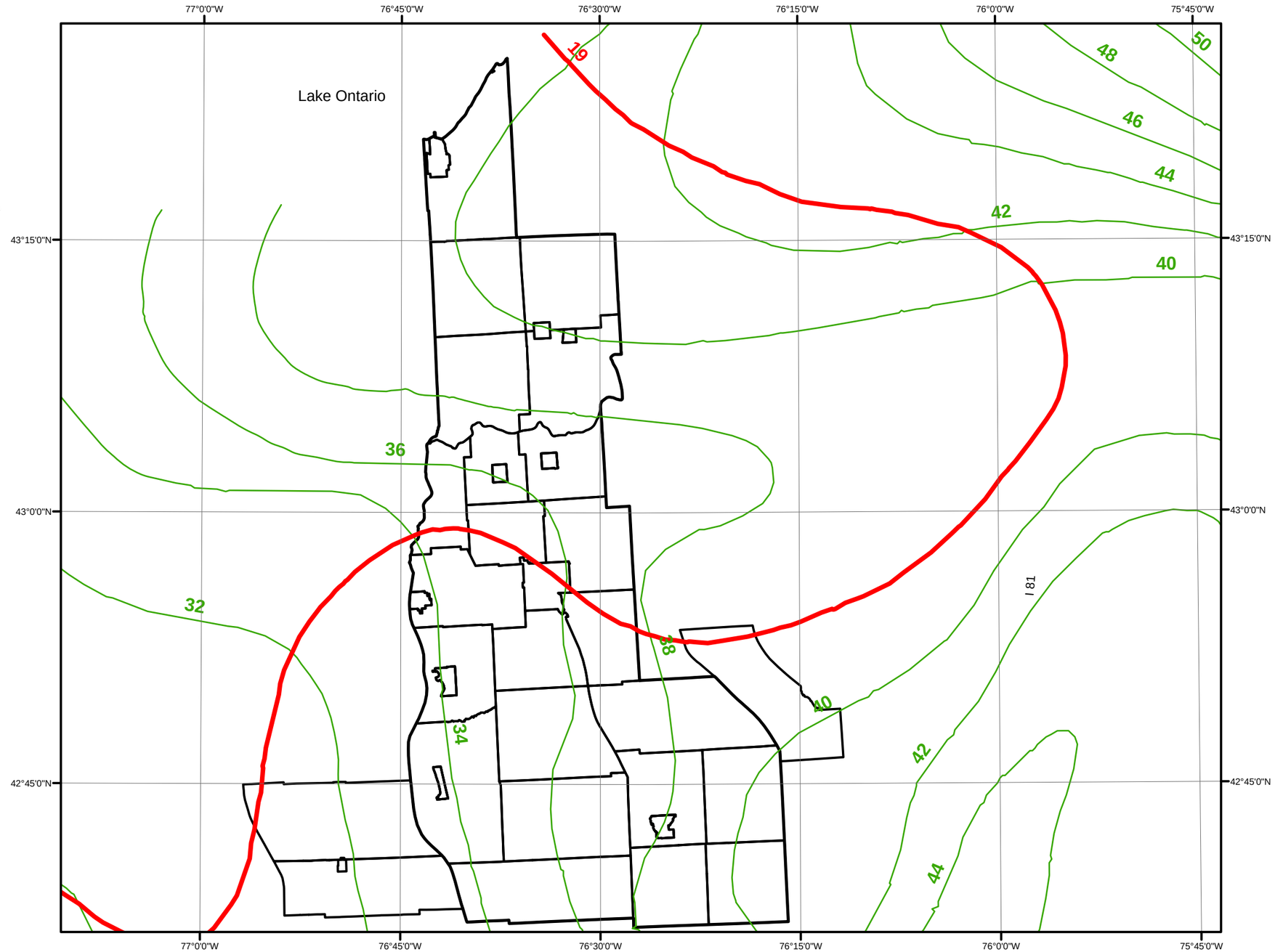
LATHAM, NEW YORK 12110

STUDY AREA
MEAN ANNUAL RUNOFF
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182	DATE: 10/12/2010	FIGURE NO: Appendix B, Figure 3

STUDY AREA
MEAN ANNUAL PRECIPITATION
AND EVAPOTRANSPIRATION DATA
1951-1980



Legend

- Mean Annual Evapotranspiration (inches)
- Mean Annual Precipitation (inches)
- County Boundary

SOURCE: D. A. RANDALL, 1996 AND LYFORD AND COHEN, 1988

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110	STUDY AREA - MEAN ANNUAL PRECIPITATION AND EVAPOTRANSPIRATION DATA *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182 DATE: 10/12/2010	FIGURE NO: Appendix B, Figure 4

APPENDIX C

TERRESTRIAL AND AQUATIC RESOURCES

STUDY AREA
ECOLOGICAL REGIONS

Legend

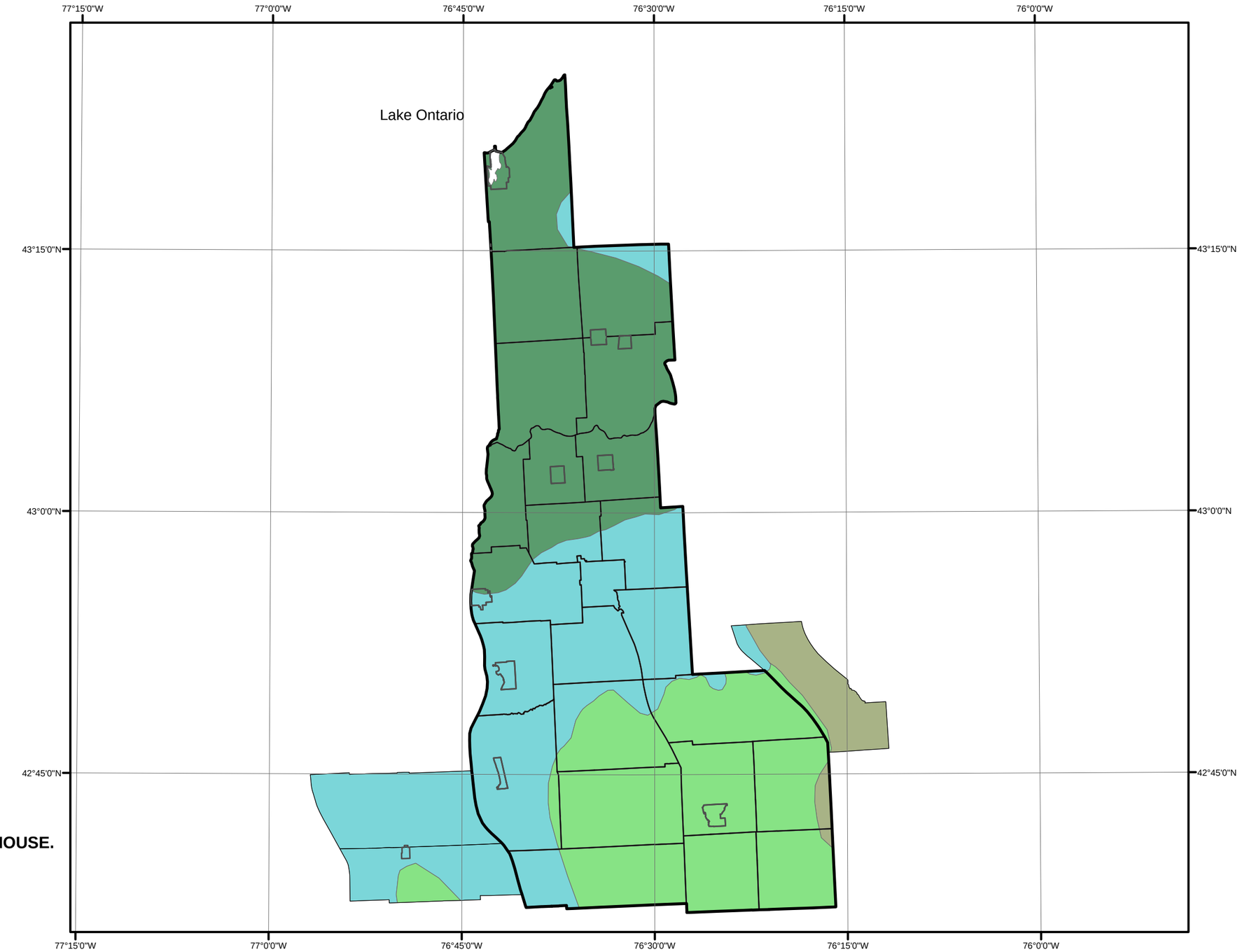
New York State Ecozones

Minor Zones

- CENTRAL APPALACHIANS
- FINGER LAKE HIGHLANDS
- ERIE-ONTARIO PLAIN
- DRUMLIN

- Municipal Boundaries
- County Boundary

NOTE: DATA OBTAINED FROM NYS GIS CLEARINGHOUSE.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

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LATHAM, NEW YORK 12110

STUDY AREA
ECOLOGICAL REGIONS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix C, Figure 1

STUDY AREA
DEC MAPPED WETLANDS

Legend

DEC Mapped Wetlands

Class

- **I**
- **II**
- **III**
- **IV**

Municipal Boundaries

County Boundary

NOTE: DATA OBTAINED FROM CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

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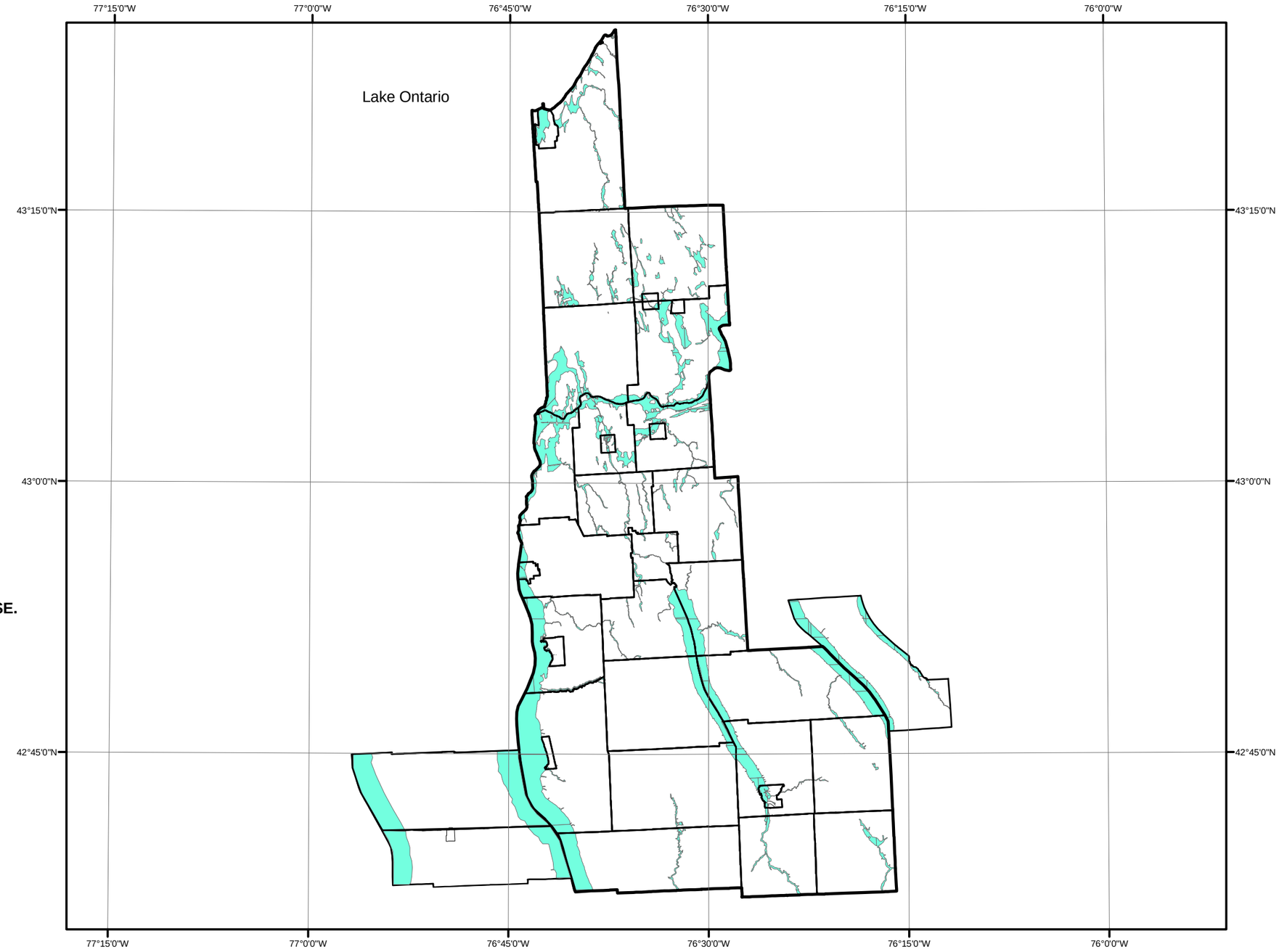
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
DEC MAPPED WETLANDS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix C, Figure 2

STUDY AREA
SPECIAL FLOOD HAZARD AREAS



Legend

County Boundary

Municipal Boundaries

Special Flood Hazard Areas

NOTES: DATA OBTAINED FROM NYS GIS CLEARINGHOUSE.

DIGITAL COVERAGE OF SENECA COUNTY IS CURRENTLY UNAVAILABLE. ALL AVAILABLE PAPER FEMA MAPS HAVE BEEN ALIGNED AND SUBSTITUTED.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

3

SEAL OF CAYUGA COUNTY NEW YORK

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LATHAM, NEW YORK 12110

STUDY AREA
SPECIAL FLOOD HAZARD AREAS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix C, Figure 3

STUDY AREA
FEDERAL WETLANDS

Legend

Federal Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

- Municipal Boundaries
- County Boundary

NOTE: DATA OBTAINED FROM NATIONAL WETLAND INVENTORY DATABASE.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

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19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
FEDERAL WETLANDS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix C, Figure 4

APPENDIX C

Table 1 - Definitions of Global and State Ranks

Global Rank	State Rank
G1 – Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining acres, or miles of stream), or especially vulnerable to extinction because of some factor of its biology.	*S1* – Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in the State.
G2 – Imperiled globally because of rarity (6 to 20 occurrences, or few remaining acres or miles of stream) or very vulnerable to extinction throughout its range because of other factors.	*S2* – Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in the State.
G3 – Either rare and local throughout its range (21 to 100 occurrences) or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or vulnerable to extinction throughout its range because of other factors.	*S3* – Typically 21 to 100 occurrences, limited individuals, acreage, or miles of stream in the State.
G4 – Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.	*S4* – Apparently secure in the State.
G5 – Demonstrably secure globally, though it may be quite rare.	*S5* – Demonstrably secure in the State.
GH – Historically known, with the expectation that it might be rediscovered.	*SH* – Historically known in the State, but not seen in the past 15 to 20 years.
GX – Species believed to be extinct.	*SX* – Apparently extirpated from the State.
GU – Status unknown.	*SE* – Exotic, not native to the State.
	SR – Report only, no verified specimens known from the State.
	SU – Status unknown.

APPENDIX C

Table 2 - Protected Plants and Natural Communities of the Study Area

Plants					
Common Name	Federal	State	Common Name	Federal	State
Angled Spikerush	---	E	Startwell's Sedge	---	T
Basil-balm	---	E	Scarlet Indian-paintbrush	---	E
Bear's-foot	---	E	Schweinitz's Flatsedge	---	R
Big Shellbark Hickory	---	T	Seaside Bulrush	---	E
Bushy Cinquefoil	---	E	Podgrass	---	R
Button-bush Dodder	---	E	Seaside Crowfoot	---	E
Cloud Sedge	---	E	Small-flowered Tick-trefoil	---	E
Common Mare's-tail	---	E	Smooth Bur-marigold	---	T
Cooper's Milkvetch	---	E	Southern Water-nymph	---	E
Dragon's Mouth Orchid	---	T	Spiny Water-nymph	---	E
Elk Sedge	---	E	Spreading Globeflower	---	R
Erect Knotweed	---	E	Straight-leaf Pondweed	---	E
Fairy Wand	---	T	Salt-marsh Spikerush	---	T
False Hop Sedge	---	R	Swamp Lousewort	---	T
Golden Dock	---	E	Schweinitz's Sedge	---	T
Golden-seal	---	T	Tall White Aster	---	E
Hair-like Sedge	---	E	Troublesome Sedge	---	T
Handsome Sedge	---	T	Twin-leaf	---	T
Heartleaf Plantain	---	T	Violet Bush-clover	---	R
Lesser Bladderwort	---	T	Willdenow's Sedge	---	T
Marsh Arrow-grass	---	T	Southern Twyblade	---	E
Narrow-leaved Sedge	---	E	Woodland Agrimony	---	T
Nodding Pogonia	---	E	Woodland Bluegrass	---	E
Nodding Wild Onion	---	T	Yellow Giant-hyssop	---	T
Oakes' Evening-primrose	---	T	Straw Sedge	---	E
Red Pigweed	---	T	Blunt-lobe Grape Fern	---	E
Reflexed Sedge	---	E	Smooth Scouring Rush	---	E
Rough Avens	---	E	Nothern False Foxglove	---	T
Northern Bog Aster	---	T	Nothern Pondweed	---	T
Salt-meadow Grass	---	E	American Hart's-tongue fern	T	---
Eastern Prairie Fringed Orchid	T	---	Small Whorled Pogonia	T	---
Natural Communities					
Calcareous Shoreline Outcrop	---	---	Rich Hemlock-Hardwood Peat Swamp	---	---
Great Lakes Bluff	---	---	Shallow Emergent Marsh	---	---
Maple-Basswood Rich Mesic Forest	---	---	Red maple-Tamarack Peat Swamp	---	---
Inland Salt Marsh	---	---	Rich Shrub Fen	---	---
Rich Graminoid Fen	---	---	Great Lakes Aquatic Bed	---	---

Notes:
E – Endangered
T- Threatened
R - Rare

APPENDIX C

Table 3 - Endangered, Threatened and Special Concern Species in Study Area

ENDANGERED	THREATENED	SPECIAL CONCERN
BIRDS		
Black Tern (S) Short-eared Owl (S)	Pied-billed Grebe (S) Common Tern (S) Henslow's Sparrow (S) Least Bittern (S) Bald Eagle (S&F)[1]	American Bittern (S) Northern Goshawk (S) Red-headed Woodpecker (S) Golden-winged Warbler (S) Grasshopper Sparrow (S) Cerulean Warbler (S) Common Loon (S) Cooper's Hawk (S) Horned Lark (S) Ospray (S) Red Shouldered Hawk (S) Vesper Sparrow (S) Yellow-breasted Chat (S)
MAMMALS		
Indiana Bat (S&F)		
REPTILES		
	Bog Turtle (F)	Spotted Turtle (S) Wood Turtle (S) Eastern Massasauga (F)
AMPHIBIANS		
		Southern Leopard Frog (S)
FISH		
Pugnose Shiner (S) Spoonhead Sculpin (S)	Lake Sturgeon (S)	Lake Sturgeon (F)

Notes:
S- State listed
F- Federally listed
S&F - State and Federally listed
[1]Bald Eagle - The bald eagle was delisted on August 8, 2007. While there are no ESA requirements for bald eagles after this date, the eagles continue to receive protection under the Bald and Golden Eagle Protection Act (BGEPA).
No Endangered, Threatened or Special Concern Insect or Mollusk Species were identified by the NYSDEC/New York Nature Explorer as being present in the study area.

APPENDIX C

Table 4 – Protected Herpetofauna of the Study Area

AMPHIBIANS-Toads & Frogs			AMPHIBIANS- Mudpuppy & Salamanders		
Common Name	Federal	State	Common Name	Federal	State
Southern leopard Frog	Un	GN-SC	Common Mudpuppy	Un	GN
			Jefferson Salamander	Un	GN-SC
			Blue-spotted Salamander	Un	GN-SC
			Spotted Salamander	Un	GN
			Red-spotted Newt	Un	GN
			Northern Dusky Salamander	Un	GN
			Northern Spring Salamander	Un	GN
			NorthernTwo-lined Salamander	Un	GN
			Allegheny Dusky Salamander	Un	GN
			Northern Slimy Salamander	Un	GN
			Northern Redback Salamander	Un	GN
REPTILES- Turtles			**REPTILES- Snakes**		
Common Name	Federal	State	Common Name	Federal	State
Common Musk	Un	GN	Northern Brownsnake	Un	GN
Spotted	Un	GN-SC	Northern Redbelly	Un	GN
Wood	Un-CA2	GN-E	Northern Ring-necked	Un	GN
Painted	Un	GN	Eastern Milk	Un	GN
Blandings	Un	GN-T	Northern Water	Un	GN
Common Map	Un	GN	Eastern Ribbon	Un	GN
Eastern Spiny Softshell	Un	GN-T	Common Garter	Un	GN
Eastern Redbelly Turtle	Un	GN	Black Rat Snake	Un	GN

Notes:

Un- Unprotected
GN- Game (No Season - Cannot be Hunted)

E - Endangered
T- Threatened
SC- Special Concern

CA2 – Species not currently endangered but which may become so if unrestricted trade occurs.

Sources: New York State Amphibian and Reptile Atlas & Checklist of Amphibians, Reptiles, Birds and Mammals of New York State (including their legal status, revised September 2007) - NYSDEC

ATTACHMENT 1

NYSDEC AND USFWS LETTERS

SPECTRA
ENVIRONMENTAL GROUP, INC.
ENGINEERING, ARCHITECTURE AND SURVEYING, PC

August 16, 2010

United States Department of the Interior
Fish & Wildlife Service
3817 Luker Road
Cortland, New York 13045

RE: Telecommunication Project in Cayuga County, New York State

Dear Sir/Madam:

On behalf of Cayuga County, Spectra Environmental Group, Inc. has been retained to conduct an environmental assessment in accordance with the National Environmental Protection Act for a county-wide telecommunications project.

Cayuga County is in the process of developing an Emergency Radio Communications System for voice and data radio communications services, to enable public safety and public service entities operating within the County to improve communications for homeland security, public safety, fire and emergency service providers in the area.

Specifically, this project will involve construction of several new communication towers and refurbishing a number of existing communication towers at various locations (between 10 and 20 locations) throughout Cayuga County. Figure 1 provides a Map that shows county boundaries in addition to towns and cities within the county (north-central portion of New York State).

A number of the sites are expected to meet one or more of the criteria below:

1. Co-location of new equipment and antennae with an existing structure (tower, water tank, large building, etc.) where all ground disturbance occurs within previously disturbed areas and where such activities do no increase the existing height or require the addition of guy wires;
2. Routine maintenance of existing tower sites (e.g. painting, antennae replacement);
3. Repair or replacement of existing towers and/or equipment, provided that such activities do not increase the existing tower height or require the addition of guy wires

We are seeking confirmation that these types of actions are not likely to adversely affect Federally listed species or critical habitat in Cayuga County, nor have any significant impacts on migratory

ONE CIVIC CENTER PLAZA, SUITE 401
POUGHKEEPSIE, NY 12601
(845) 454-9440
FAX (845) 454-9206

19 BRITISH AMERICAN BOULEVARD
LATHAM, NY 12110
(518) 782-0882
FAX (518) 782-0973

307 SOUTH TOWNSEND STREET
SYRACUSE, NY 13202
(315) 471-2101
FAX (315) 471-2111

WWW.SPECTRAENV.COM

birds or other trust resources, and therefore no further coordination or consultation with Fish & Wildlife would be necessary.

Additionally, we request information from the Fish and Wildlife Service regarding what Federally listed species or critical habitat may be present in Cayuga County. If you have any questions, or require additional information, please contact me at 518-782-0882, extension 13 or via email at padel@spectraenvcom.

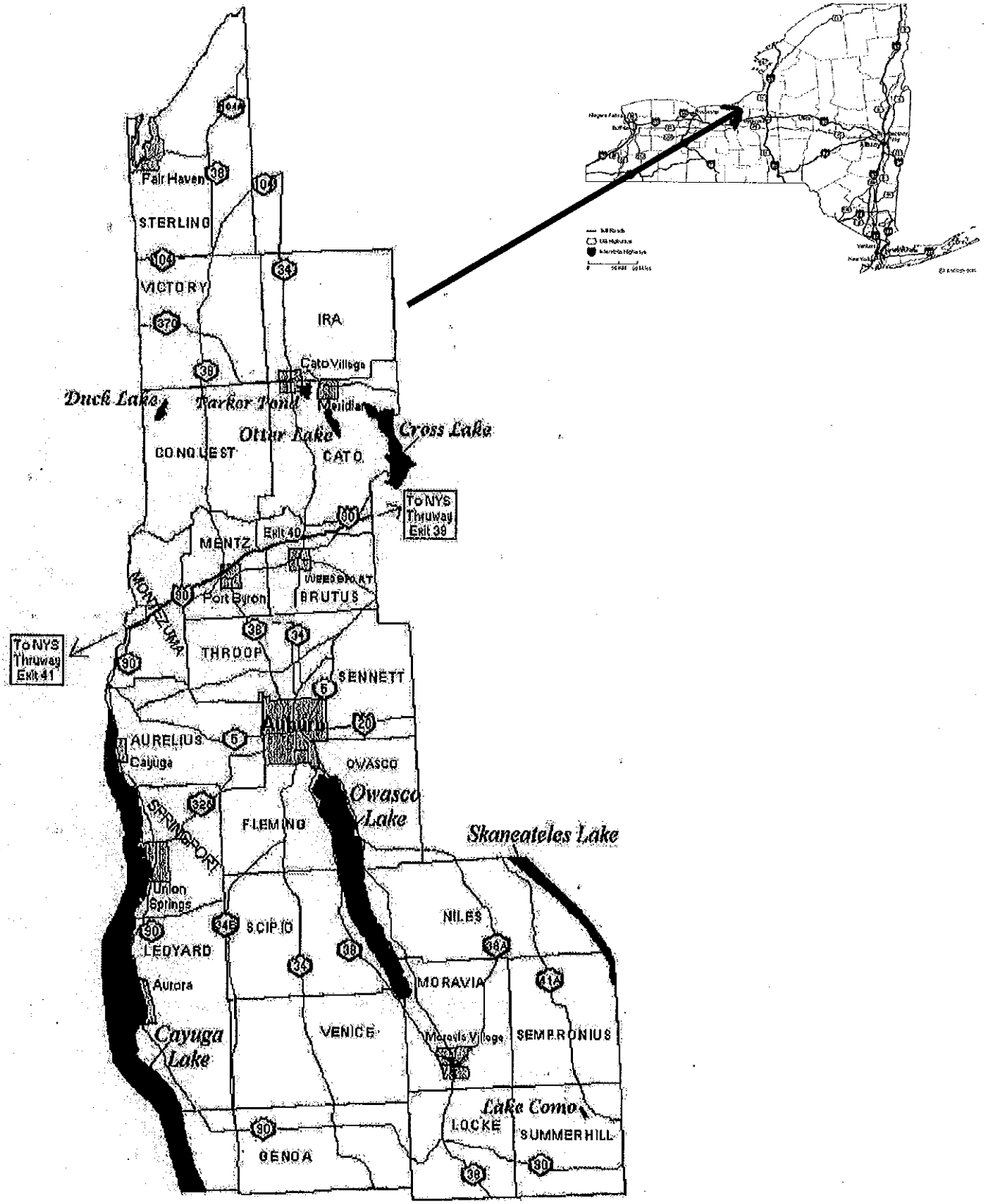
Sincerely,

SPECTRA ENVIRONMENTAL GROUP, INC.

Paul Adel

Paul Adel, P.E.
Director of Technical Services

Encl.



SPECTRA ENGINEERING, ARCHITECTURE AND SURVEYING P.C.
1 Civic Center Plaza, Suite 401
Poughkeepsie, NY 12601
TEL (845) 454-9440 FAX (845) 454-9206

LOCATION MAP
CAYUGA COUNTY
NEW YORK

PROJ. No.: 10182	DATE: 08-17-10	SCALE: NTS	FIGURE 1

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
http://www.fws.gov/northeast/nyfo

Project Number: 100550

To: Paul Adel Date: Aug 24, 2010

Regarding: 10-20 sites for emergency radio communication system

Town/County: Cayuga County

We have received your request for information regarding occurrences of Federally-listed threatened and endangered species within the vicinity of the above-referenced project/property. Due to increasing workload and reduction of staff, we are no longer able to reply to endangered species list requests in a timely manner. In an effort to streamline project reviews, we are shifting the majority of species list requests to our website at http://www.fws.gov/northeast/nyfo/es/section7.htm. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response. Step-by-step instructions are found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (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 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.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above document control number in any future correspondence.

Endangered Species Biologist: Sandra Doran *Sandra Doran*

*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.

SPECTRA
ENVIRONMENTAL GROUP, INC.
ENGINEERING, ARCHITECTURE AND SURVEYING, PC

August 17, 2010

New York State Department of
Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway
Albany, New York 12233-4757

RE: Telecommunication Project in Cayuga County, NYSDEC Region 7

Dear Sir/Madam:

On behalf of Cayuga County, Spectra Environmental Group, Inc. has been retained to conduct an environmental assessment under the State Environmental Quality Review Act for a county-wide telecommunications project.

Cayuga County is in the process of developing an Emergency Radio Communications System for voice and data radio communications services, to enable public safety and public service entities operating within the County to improve communications for homeland security, public safety, fire and emergency service providers in the area.

Specifically, this project will involve construction of several new communications towers and refurbishing a number of existing communication towers at various locations (between 10 and 20 locations) throughout Cayuga County. Figure 1 provides a Map that shows county boundaries in addition to towns and cities within the county (north-western corner of NYSDEC Region 7).

A number of the sites are expected to meet one or more of the criteria below:

1. New antennae or panels on existing towers, or new communications equipment installed within existing fenced equipment areas, provided that all new work is confined within existing equipment areas, no previously undisturbed land is disturbed, and no new access roads or expansion of existing access roads is involved.
2. New or existing towers, antennae, and associated equipment installed at a location currently wholly occupied by lawn, pavement, and/or gravel.
3. New or existing towers, antennae, and associated equipment installed on or in existing buildings, rooftops, billboards, basements or bridges

ONE CIVIC CENTER PLAZA, SUITE 401
POUGHKEEPSIE, NY 12601
(845) 454-9440
FAX (845) 454-9206

19 BRITISH AMERICAN BOULEVARD
LATHAM, NY 12110
(518) 782-0882
FAX (518) 782-0973

307 SOUTH TOWNSEND STREET
SYRACUSE, NY 13202
(315) 471-2101
FAX (315) 471-2111

WWW.SPECTRAENV.COM

We are seeking concurrence that consultation with the New York Natural Heritage Program would not be necessary for sites that meet these criteria because such activity is not likely to adversely affect occurrences of rare plants and animals, including those listed by New York State as endangered or threatened, and on significant ecological communities.

Additionally, we request information from the New York Natural Heritage Program regarding what rare or listed species or significant natural communities may be present in Cayuga County.

If you have any questions, or require additional information, please contact me at 518-782-0882, extension 13 or via email at padel@spectraenv.com.

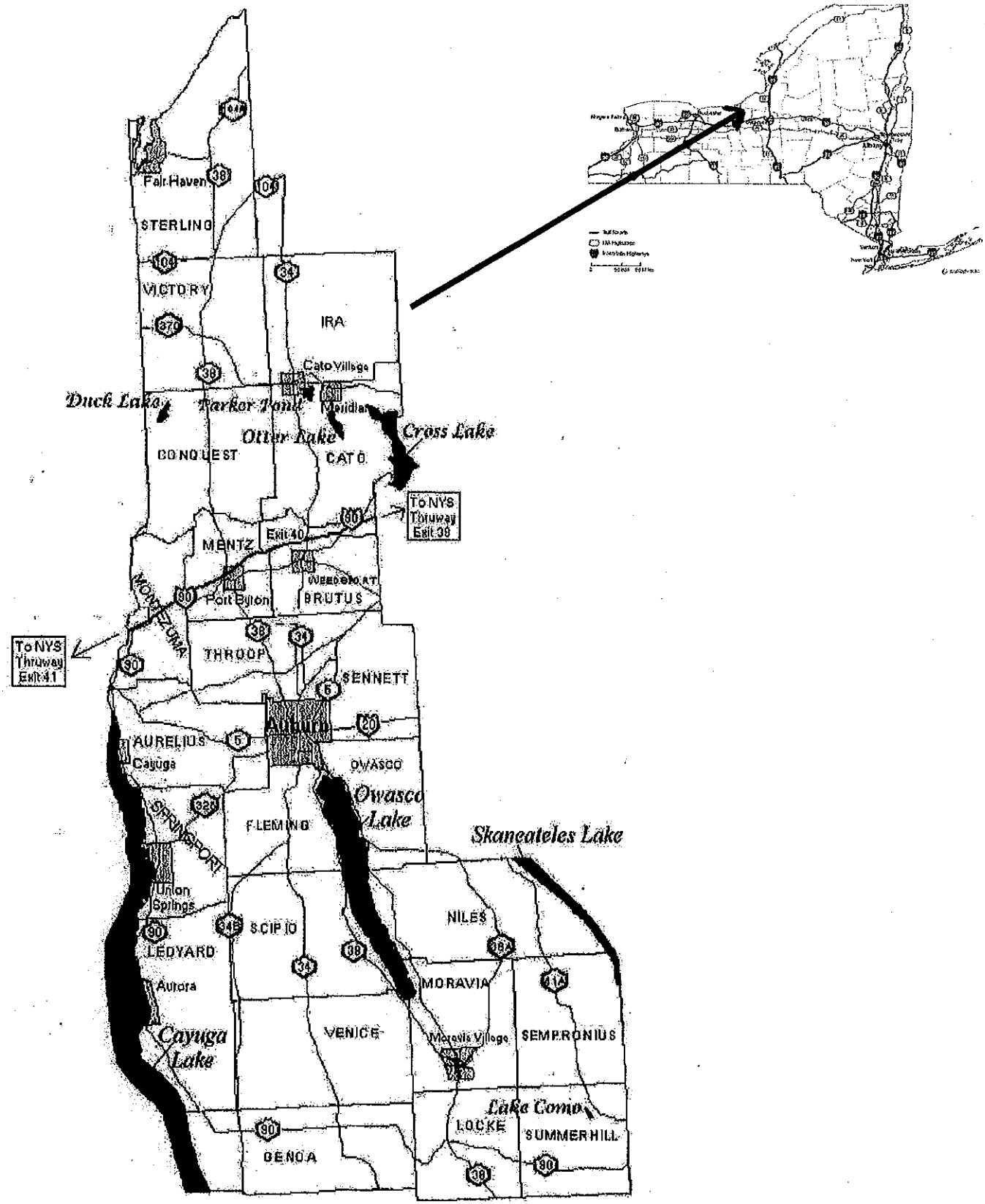
Sincerely,

SPECTRA ENVIRONMENTAL GROUP, INC.

Paul Adel

Paul Adel, P.E.
Director of Technical Services

Encl.



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LOCATION MAP
CAYUGA COUNTY
NEW YORK

PROJ. No.: 10182	DATE: 08-17-10	SCALE: NTS	FIGURE 1

Melissia A. Pentz

From: Tara Salerno [tmsalern@gw.dec.state.ny.us]

Sent: Tuesday, August 24, 2010 11:35 AM

To: Melissia A. Pentz

Subject: NY Nature Explorer

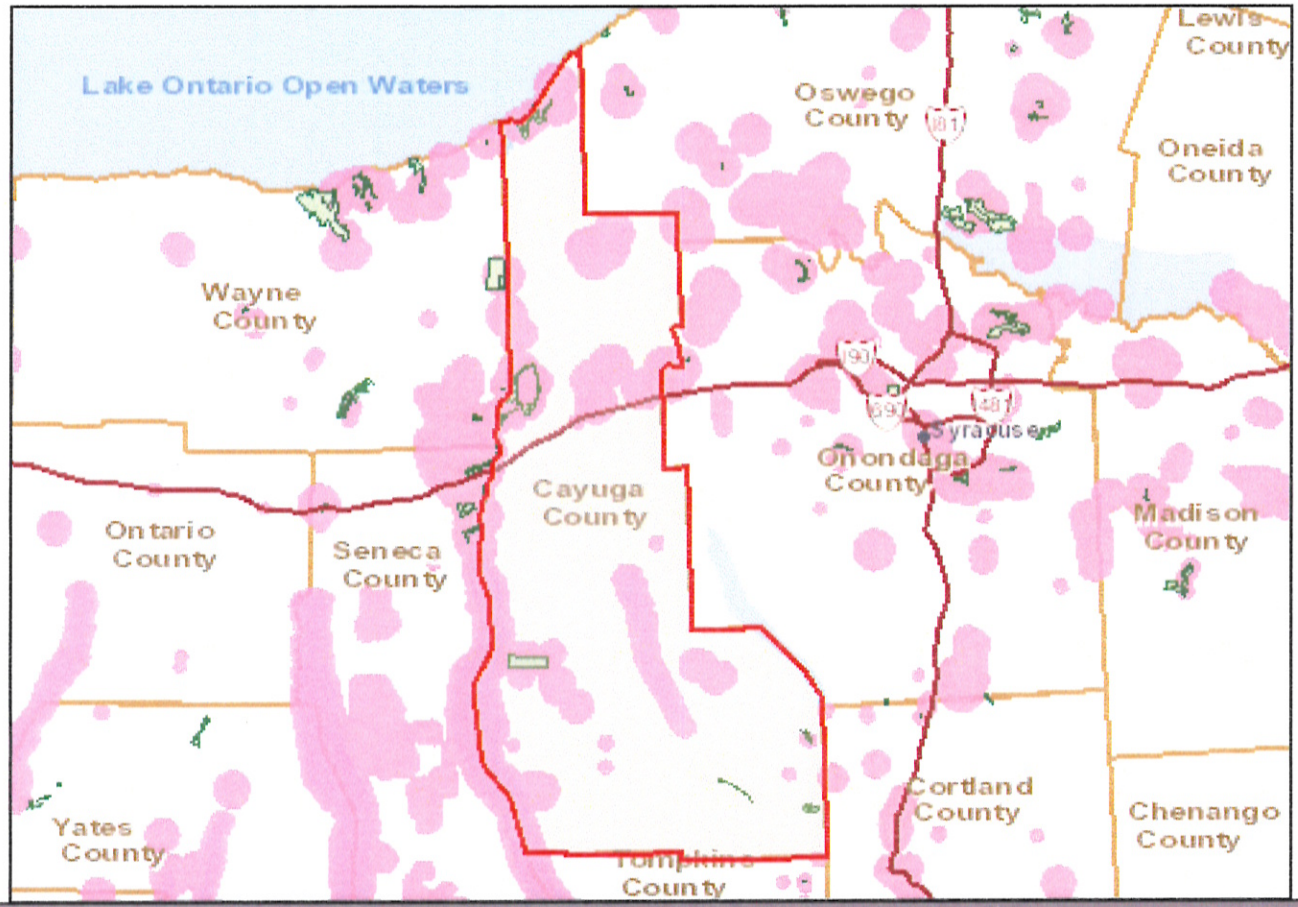
Attachments: countySearchResultsReport19027.PDF; nature_exlorer_export19028.XLS

Hi,
After I got off the phone with you the website finally worked, just took it a while. I was able to get it to produce a list for Cayuga County. I saved it as both a PDF and Excel file and attached it here. Let me know if you still have any problems with it.
Thanks,
Tara

Tara Salerno
Environmental Review Specialist
NY Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757
Office: 518-402-8926
Fax: 518-402-8925
tmsalern@gw.dec.state.ny.us

New York Nature Explorer
County Results Report

Criteria: County: Cayuga



Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status State	Protection Status Federal	Conservation Rank State	Conservation Rank Global
County: Cayuga							
Animal: Mammals							
Indiana Bat *Myotis sodalis*	Bats	Recently Confirmed	2008	Endangered	Endangered	S1	G2

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
American Bittern *Botaurus lentiginosus*	Herons, Bitterns, Egrets, Ibises	Recently Confirmed	2000-2005	Special Concern		S4	G4
American Black Duck *Anas rubripes*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S4	G5
American Coot *Fulica americana*	Rails, Coots and Cranes	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S3	G5
American Crow *Corvus brachyrhynchos*	Crows and Jays	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
American Goldfinch *Carduelis tristis*	Finches and Crossbills	Recently Confirmed	2000-2005	Protected Bird		S5	G5
American Kestrel *Falco sparverius*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Protected Bird		S5	G5
American Redstart *Setophaga ruticilla*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
American Robin *Turdus migratorius*	Thrushes and Bluebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
American Wigeon *Anas americana*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S3	G5
American Woodcock *Scolopax minor*	Gulls, Terns, Plovers, Shorebirds	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Bald Eagle *Haliaeetus leucocephalus*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2008	Threatened		S2S3B,S2N	G5
Baltimore Oriole *Icterus galbula*	Blackbirds and Orioles	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Barred Owl *Strix varia*	Owls	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Belted Kingfisher *Megaceryle alcyon*	Kingfishers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Black Tern *Chlidonias niger*	Gulls, Terns, Plovers, Shorebirds	Historically Confirmed	1973	Endangered		S2B	G4
Black-and-white Warbler *Mniotilta varia*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Black-billed Cuckoo *Coccyzus erythropthalmus*	Cuckoos	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Black-capped Chickadee *Poecile atricapillus*	Chickadees and Titmice	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Black-crowned Night-Heron *Nycticorax nycticorax*	Herons, Bitterns, Egrets, Ibises	Recently Confirmed	2000-2005	Protected Bird		S3	G5
Black-throated Blue Warbler *Dendroica caerulescens*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Black-throated Green Warbler *Dendroica virens*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Blackburnian Warbler *Dendroica fusca*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Blue Jay *Cyanocitta cristata*	Crows and Jays	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Blue-gray Gnatcatcher *Polioptila caerulea*	Gnatcatchers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Blue-headed Vireo *Vireo solitarius*	Vireos	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Brewster's Warbler *Vermivora pinus x chrysoptera*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		SNA	GNA
Broad-winged Hawk *Buteo platypterus*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Brown Creeper *Certhia americana*	Creepers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Brown Thrasher *Toxostoma rufum*	Mockingbirds and Thrashers	Recently Confirmed	2000-2005	Protected Bird		S3S4	G5
Brown-headed Cowbird *Molothrus ater*	Blackbirds and Orioles	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Canada Goose *Branta canadensis*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Canada Warbler *Wilsonia canadensis*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Carolina Wren *Thryothorus ludovicianus*	Wrens	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Cattle Egret *Bubulcus ibis*	Herons, Bitterns, Egrets, Ibises	Recently Confirmed	2000-2005	Protected Bird		S2	G5
Cedar Waxwing *Bombycilla cedrorum*	Waxwings	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Cerulean Warbler *Dendroica cerulea*	Wood-Warblers	Recently Confirmed	2000-2005	Special Concern		S4B	G4
Chestnut-sided Warbler *Dendroica pensylvanica*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Chimney Swift	Hummingbirds and Swifts	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Common Grackle *Quiscalus quiscula*	Blackbirds and Orioles	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Common Loon *Gavia immer*	Loons	Recently Confirmed		Special Concern		S3	G5
Common Merganser *Mergus merganser*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Common Moorhen *Gallinula chloropus*	Rails, Coots and Cranes	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S4	G5
Common Raven *Corvus corax*	Crows and Jays	Recently Confirmed	2000-2005	Protected Bird		S4	G5
Common Tern *Sterna hirundo*	Gulls, Terns, Plovers, Shorebirds	Historically Confirmed		Threatened		S3B	G5
Common Yellowthroat *Geothlypis trichas*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Cooper's Hawk *Accipiter cooperii*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Special Concern		S4	G5
Dark-eyed Junco *Junco hyemalis*	Sparrows and Towhees	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Double-crested Cormorant *Phalacrocorax auritus*	Pelicans and Cormorants	Recently Confirmed	2000-2005	Protected Bird		S3	G5
Downy Woodpecker *Picoides pubescens*	Woodpeckers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Eastern Bluebird *Sialia sialis*	Thrushes and Bluebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Eastern Kingbird	Flycatchers	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Eastern Towhee *Pipilo erythrophthalmus*	Sparrows and Towhees	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Eastern Wood-Pewee *Contopus virens*	Flycatchers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
European Starling *Sturnus vulgaris*	Starlings	Recently Confirmed	2000-2005			SNA	G5
Evening Grosbeak *Coccothraustes vespertinus*	Finches and Crossbills	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Field Sparrow *Spizella pusilla*	Sparrows and Towhees	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Fish Crow *Corvus ossifragus*	Crows and Jays	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S4	G5
Gadwall *Anas strepera*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S3	G5
Golden-crowned Kinglet *Regulus satrapa*	Kinglets	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Golden-winged Warbler *Vermivora chrysoptera*	Wood-Warblers	Recently Confirmed	2000-2005	Special Concern		S4	G4
Grasshopper Sparrow *Ammodramus savannarum*	Sparrows and Towhees	Recently Confirmed	2000-2005	Special Concern		S4	G5
Gray Catbird *Dumetella carolinensis*	Mockingbirds and Thrashers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Great Blue Heron *Ardea herodias*	Herons, Bitterns, Egrets, Ibises	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Great Crested Flycatcher	Flycatchers	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Hairy Woodpecker *Picoides villosus*	Woodpeckers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Henslow's Sparrow *Ammodramus henslowii*	Sparrows and Towhees	Recently Confirmed	2000-2005	Threatened		S3B	G4
Hermit Thrush *Catharus guttatus*	Thrushes and Bluebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Hooded Merganser *Lophodytes cucullatus*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S4	G5
Hooded Warbler *Wilsonia citrina*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Horned Lark *Eremophila alpestris*	Larks	Recently Confirmed	2000-2005	Special Concern		S3S4	G5
House Finch *Carpodacus mexicanus*	Finches and Crossbills	Recently Confirmed	2000-2005	Protected Bird		SNA	G5
House Sparrow *Passer domesticus*	Old World Sparrows	Recently Confirmed	2000-2005			SNA	G5
House Wren *Troglodytes aedon*	Wrens	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Indigo Bunting *Passerina cyanea*	Cardinals and Buntings	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Killdeer *Charadrius vociferus*	Gulls, Terns, Plovers, Shorebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Least Bittern *Ixobrychus exilis*	Herons, Bitterns, Egrets, Ibises	Recently Confirmed	2003	Threatened		S3B,S1N	G5
Least Flycatcher	Flycatchers	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Mallard *Anas platyrhynchos*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Mallard x Am. Black Duck Hybrid *Anas platyrhynchos x rubripes*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		SNA	GNA
Marsh Wren *Cistothorus palustris*	Wrens	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Merlin *Falco columbarius*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Protected Bird		S3?	G5
Mourning Dove *Zenaida macroura*	Pigeons and Doves	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Mourning Warbler *Oporornis philadelphia*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Mute Swan *Cygnus olor*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird		SNA	G5
Nashville Warbler *Vermivora ruficapilla*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Northern Bobwhite *Colinus virginianus*	Grouse, Pheasants, Turkeys	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S4	G5
Northern Cardinal *Cardinalis cardinalis*	Cardinals and Buntings	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Northern Flicker *Colaptes auratus*	Woodpeckers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Northern Goshawk *Accipiter gentilis*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Special Concern		S4B,S3N	G5
	Hawks, Falcons, Eagles	Recently					

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Northern Saw-whet Owl *Aegolius acadicus*	Owls	Recently Confirmed	2000-2005	Protected Bird		S3	G5
Northern Waterthrush *Seiurus noveboracensis*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Orchard Oriole *Icterus spurius*	Blackbirds and Orioles	Recently Confirmed	2000-2005	Protected Bird		S4	G5
Osprey *Pandion haliaetus*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Special Concern		S4B	G5
Ovenbird *Seiurus aurocapilla*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Pied-billed Grebe *Podilymbus podiceps*	Grebes	Recently Confirmed	2005	Threatened		S3B,S1N	G5
Pileated Woodpecker *Dryocopus pileatus*	Woodpeckers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Pine Siskin *Carduelis pinus*	Finches and Crossbills	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Pine Warbler *Dendroica pinus*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Prairie Warbler *Dendroica discolor*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Prothonotary Warbler *Protonotaria citrea*	Wood-Warblers	Recently Confirmed		Protected Bird		S2	G5
Purple Finch *Carpodacus purpureus*	Finches and Crossbills	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Purple Martin *Progne subis*	Swallows	Recently Confirmed	2000-2005	Protected Bird		S4	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Red-eyed Vireo *Vireo olivaceus*	Vireos	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Red-headed Woodpecker *Melanerpes erythrocephalus*	Woodpeckers	Recently Confirmed	2000-2005	Special Concern		S2?	G5
Red-shouldered Hawk *Buteo lineatus*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Special Concern		S4B	G5
Red-tailed Hawk *Buteo jamaicensis*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Red-winged Blackbird *Agelaius phoeniceus*	Blackbirds and Orioles	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Ring-necked Pheasant *Phasianus colchicus*	Grouse, Pheasants, Turkeys	Recently Confirmed	2000-2005	Protected Bird - Game with open season		SNA	G5
Rock Pigeon *Columba livia*	Pigeons and Doves	Recently Confirmed	2000-2005			SNA	G5
Rose-breasted Grosbeak *Pheucticus ludovicianus*	Cardinals and Buntings	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Ruby-throated Hummingbird *Archilochus colubris*	Hummingbirds and Swifts	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Ruddy Duck *Oxyura jamaicensis*	Ducks, Geese, Waterfowl	Possible but not Confirmed		Protected Bird - Game with open season		S1	G5
Ruffed Grouse *Bonasa umbellus*	Grouse, Pheasants, Turkeys	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Sandhill Crane *Grus canadensis*	Rails, Coots and Cranes	Recently Confirmed	2000-2005	Protected Bird		SNA	G5
		Recently					

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Short-eared Owl *Asio flammeus*	Owls	Recently Confirmed	2001	Endangered		S2	G5
Song Sparrow *Melospiza melodia*	Sparrows and Towhees	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Sora *Porzana carolina*	Rails, Coots and Cranes	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S4	G5
Spotted Sandpiper *Actitis macularius*	Gulls, Terns, Plovers, Shorebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Swamp Sparrow *Melospiza georgiana*	Sparrows and Towhees	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Tree Swallow *Tachycineta bicolor*	Swallows	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Trumpeter Swan *Cygnus buccinator*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird		SNR	G4
Tufted Titmouse *Baeolophus bicolor*	Chickadees and Titmice	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Turkey Vulture *Cathartes aura*	Hawks, Falcons, Eagles, Vultures	Recently Confirmed	2000-2005	Protected Bird		S4	G5
Veery *Catharus fuscescens*	Thrushes and Bluebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Vesper Sparrow *Pooecetes gramineus*	Sparrows and Towhees	Recently Confirmed	2000-2005	Special Concern		S5	G5
Virginia Rail *Rallus limicola*	Rails, Coots and Cranes	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Warbling Vireo	Vireos	Recently Confirmed	2000-2005	Protected Bird		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Wild Turkey *Meleagris gallopavo*	Grouse, Pheasants, Turkeys	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Willow Flycatcher *Empidonax traillii*	Flycatchers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Wilson's Snipe *Gallinago delicata*	Gulls, Terns, Plovers, Shorebirds	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Winter Wren *Troglodytes troglodytes*	Wrens	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Wood Duck *Aix sponsa*	Ducks, Geese, Waterfowl	Recently Confirmed	2000-2005	Protected Bird - Game with open season		S5	G5
Wood Thrush *Hylocichla mustelina*	Thrushes and Bluebirds	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Worm-eating Warbler *Helmitheros vermivorum*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S4	G5
Yellow Warbler *Dendroica petechia*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Yellow-bellied Sapsucker *Sphyrapicus varius*	Woodpeckers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Yellow-billed Cuckoo *Coccyzus americanus*	Cuckoos	Recently Confirmed	2000-2005	Protected Bird		S5	G5
Yellow-breasted Chat *Icteria virens*	Wood-Warblers	Recently Confirmed	2000-2005	Special Concern		S2?	G5
Yellow-rumped Warbler *Dendroica coronata*	Wood-Warblers	Recently Confirmed	2000-2005	Protected Bird		S5	G5
		Recently					

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Common Map Turtle *Graptemys geographica*	Turtles	Recently Confirmed	1990-1999	Game with no open season		S3	G5
Common Musk Turtle *Sternotherus odoratus*	Turtles	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Dekay's Brownsnake *Storeria dekayi*	Snakes	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Eastern Ratsnake *Elaphe obsoleta*	Snakes	Recently Confirmed	1990-1999	Game with no open season		S4	G5
Milksnake *Lampropeltis triangulum*	Snakes	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Northern Watersnake *Nerodia sipedon*	Snakes	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Painted Turtle *Chrysemys picta*	Turtles	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Red-bellied Snake *Storeria occipitomaculata*	Snakes	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Ring-necked Snake *Diadophis punctatus*	Snakes	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Snapping Turtle *Chelydra serpentina*	Turtles	Recently Confirmed	1990-1999	Game with open season		S5	G5
Spiny Softshell *Apalone spinifera*	Turtles	Recently Confirmed	2001	Special Concern		S2S3	G5
Spotted Turtle *Clemmys guttata*	Turtles	Recently Confirmed	1990-1999	Special Concern		S3	G5
Wood Turtle *Clemmys insculpta*	Turtles	Recently Confirmed	1990-1999	Special Concern		S3	G4

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Bullfrog *Rana catesbeiana*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S5	G5
Dusky Salamander *Desmognathus fuscus*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Eastern Newt *Notophthalmus viridescens*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Gray Treefrog *Hyla versicolor*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S5	G5
Green Frog *Rana clamitans*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S5	G5
Jefferson Salamander *Ambystoma jeffersonianum*	Salamanders	Recently Confirmed	1990-1999	Special Concern		S4	G4
Jefferson Salamander Complex *Ambystoma jeffersonianum x laterale*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		SNA	GU
Mudpuppy *Necturus maculosus*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S4	G5
Northern Leopard Frog *Rana pipiens*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S5	G5
Northern Slimy Salamander *Plethodon glutinosus*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Northern Two-lined Salamander *Eurycea bislineata*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Pickerel Frog *Rana palustris*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S5	G5
Redback Salamander *Plethodon cinereus*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S5	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Spring Salamander *Gyrinophilus porphyriticus*	Salamanders	Recently Confirmed	1990-1999	Game with no open season		S5	G5
Western Chorus Frog *Pseudacris triseriata*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S4	G5
Wood Frog *Rana sylvatica*	Frogs and Toads	Recently Confirmed	1990-1999	Game with open season		S5	G5

Animal: Fish

Blackchin Shiner *Notropis heterodon*	Minnows, Shiners, Suckers	Historically Confirmed	1941			S1	G5
Brindled Madtom *Noturus miurus*	Catfishes	Historically Confirmed				S1	G5
Freshwater Drum *Aplodinotus grunniens*	Darters and Sunfishes	Possible but not Confirmed				S2	G5
Iowa Darter *Etheostoma exile*	Darters and Sunfishes	Historically Confirmed				S2	G5
Lake Sturgeon *Acipenser fulvescens*	Sturgeons and Paddlefish	Possible but not Confirmed		Threatened		S1S2	G3G4
Pugnose Shiner *Notropis anogenus*	Minnows, Shiners, Suckers	Historically Confirmed	1939	Endangered		S1	G3
Shortjaw Cisco *Coregonus zenithicus*	Salmon and Trout	Historically Confirmed				SX	G3
Spoonhead Sculpin *Cottus ricei*	Sculpins	Historically Confirmed		Endangered		SH	G5
Western Pirate Perch *Aphredoderus sayanus gibbosus*	Perches	Recently Confirmed	1999			S1	G5T5

New York Nature Explorer

Plant: Flowering Plants

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
American Bittersweet *Celastrus scandens*	Other Flowering Plants	Historically Confirmed				S3	G5
Angled Spikerush *Eleocharis quadrangulata*	Sedges	Recently Confirmed	2002	Endangered		S1	G4
Basil-balm *Monarda clinopodia*	Other Flowering Plants	Historically Confirmed		Endangered		S1S2	G5
Bear's-foot *Smallanthus uvedalius*	Asters, Goldenrods and Daisies	Historically Confirmed	1991	Endangered		SH	G4G5
Big Shellbark Hickory *Carya laciniosa*	Other Flowering Plants	Recently Confirmed	2004	Threatened		S2	G5
Bushy Cinquefoil *Potentilla paradoxa*	Other Flowering Plants	Recently Confirmed	2002	Endangered		S1	G5
Butternut *Juglans cinerea*	Other Flowering Plants	Historically Confirmed				S4	G4
Button-bush Dodder *Cuscuta cephalanthi*	Other Flowering Plants	Historically Confirmed	1947	Endangered		S1	G5
Carey's Sedge *Carex careyana*	Sedges	Historically Confirmed	1939			S1S2	G4G5
Cloud Sedge *Carex haydenii*	Sedges	Historically Confirmed		Endangered		S1	G5
Common Mare's-tail *Hippuris vulgaris*	Other Flowering Plants	Historically Confirmed		Endangered		S1	G5
Cooper's Milkvetch	Other Flowering Plants	Recently Confirmed	1995	Endangered		S1	G4

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Dragon's Mouth Orchid *Arethusa bulbosa*	Orchids	Historically Confirmed	1916	Threatened		S2	G4
Elk Sedge *Carex garberi*	Sedges	Historically Confirmed		Endangered		S1	G5
Emmons' Sedge *Carex albicans var. emmonsii*	Sedges	Historically Confirmed				S3	G5T5
Erect Knotweed *Polygonum erectum*	Other Flowering Plants	Historically Confirmed		Endangered		S2S3	G5
Fairy Wand *Chamaelirium luteum*	Other Flowering Plants	Possible but not Confirmed		Threatened		S1S2	G5
False Hop Sedge *Carex lupuliformis*	Sedges	Historically Confirmed		Rare		S2	G4
Golden Dock *Rumex fueginus*	Other Flowering Plants	Historically Confirmed	1930	Endangered		S1	G4G5
Golden-seal *Hydrastis canadensis*	Other Flowering Plants	Recently Confirmed	2004	Threatened		S2	G4
Hair-like Sedge *Carex capillaris*	Sedges	Historically Confirmed		Endangered		S1	G5
Hairy Angelica *Angelica venenosa*	Other Flowering Plants	Historically Confirmed				S3	G5
Handsome Sedge *Carex formosa*	Sedges	Historically Confirmed	1868	Threatened		S2	G4
Heartleaf Plantain *Plantago cordata*	Other Flowering Plants	Historically Confirmed		Threatened		S3	G4
Hoary Puccoon *Lithospermum canescens*	Other Flowering Plants	Possible but not Confirmed				SX	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Lesser Bladderwort *Utricularia minor*	Other Flowering Plants	Recently Confirmed		Threatened		S3	G5
Marsh Arrow-grass *Triglochin palustre*	Other Flowering Plants	Historically Confirmed		Threatened		S2	G5
Muhlenberg's Sedge *Carex muehlenbergii var. enervis*	Sedges	Possible but not Confirmed				S3	G5T5
Narrow-leaved Sedge *Carex amphibola*	Sedges	Historically Confirmed		Endangered		S1	G5
Neckweed *Veronica peregrina ssp. xalapensis*	Other Flowering Plants	Recently Confirmed				S3	G5T5
Nodding Pogonia *Triphora trianthophora*	Orchids	Recently Confirmed	2007	Endangered		S2	G3G4
Nodding Wild Onion *Allium cernuum var. cernuum*	Other Flowering Plants	Recently Confirmed		Threatened		S2	G5T5
Northeastern Sedge *Carex cryptolepis*	Sedges	Recently Confirmed				S3	G4
Northern Bog Aster *Symphyotrichum boreale*	Asters, Goldenrods and Daisies	Recently Confirmed	1992	Threatened		S2	G5
Northern False Foxglove *Agalinis paupercula var. borealis*	Other Flowering Plants	Historically Confirmed		Threatened		S3	G5T4?
Northern Pondweed *Potamogeton alpinus*	Other Flowering Plants	Historically Confirmed		Threatened		S2	G5
Oakes' Evening-primrose *Oenothera oakesiana*	Other Flowering Plants	Possible but not Confirmed		Threatened		S2	G4G5Q
Pod Grass *Scheuchzeria palustris*	Other Flowering Plants	Historically Confirmed		Rare		S3	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Red Pigweed *Chenopodium rubrum*	Other Flowering Plants	Possible but not Confirmed		Threatened		S2	G5
Red-rooted Flatsedge *Cyperus erythrorhizos*	Sedges	Historically Confirmed				S3	G5
Reflexed Sedge *Carex retroflexa*	Sedges	Historically Confirmed		Endangered		S2S3	G5
Rough Avens *Geum virginianum*	Other Flowering Plants	Historically Confirmed		Endangered		S2	G5
Rusty Flatsedge *Cyperus odoratus*	Sedges	Historically Confirmed				S3	G5
Salt-marsh Spikerush *Eleocharis uniglumis var. halophila*	Sedges	Historically Confirmed		Threatened		S2	G4T4
Salt-meadow Grass *Leptochloa fusca ssp. fascicularis*	Grasses	Recently Confirmed	1993	Endangered		S1	G5T5
Sartwell's Sedge *Carex sartwellii*	Sedges	Historically Confirmed	1919	Threatened		S1S2	G4G5
Scarlet Indian-paintbrush *Castilleja coccinea*	Other Flowering Plants	Possible but not Confirmed		Endangered		S1	G5
Schweinitz's Flatsedge *Cyperus schweinitzii*	Sedges	Historically Confirmed		Rare		S3	G5
Schweinitz's Sedge *Carex schweinitzii*	Sedges	Historically Confirmed	1947	Threatened		S2S3	G3G4
Seaside Bulrush *Bolboschoenus maritimus ssp. paludosus*	Sedges	Recently Confirmed	2004	Endangered		S2	G5T5
Seaside Crowfoot *Ranunculus cymbalaria*	Other Flowering Plants	Recently Confirmed	1990	Endangered		SH	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Small-flowered Tick-trefoil *Desmodium pauciflorum*	Other Flowering Plants	Possible but not Confirmed		Endangered		SH	G5
Smooth Bur-marigold *Bidens laevis*	Asters, Goldenrods and Daisies	Historically Confirmed		Threatened		S2	G5
Southern Twayblade *Listera australis*	Orchids	Historically Confirmed	1916	Endangered		S1S2	G4
Southern Water-nymph *Najas guadalupensis ssp. olivacea*	Other Flowering Plants	Recently Confirmed	2006	Endangered		S1	G5T4?
Spiny Water-nymph *Najas marina*	Other Flowering Plants	Historically Confirmed	1919	Endangered		S1	G5
Spreading Globeflower *Trollius laxus*	Other Flowering Plants	Recently Confirmed	2006	Rare		S3	G4T3
Straight-leaf Pondweed *Potamogeton strictifolius*	Other Flowering Plants	Historically Confirmed	1922	Endangered		S1	G5
Straw Sedge *Carex straminea*	Sedges	Historically Confirmed		Endangered		S1	G5
Swamp Lousewort *Pedicularis lanceolata*	Other Flowering Plants	Historically Confirmed		Threatened		S2	G5
Tall White Aster *Symphyotrichum lanceolatum var. interior*	Asters, Goldenrods and Daisies	Historically Confirmed		Endangered		SH	G5T5
Troublesome Sedge *Carex molesta*	Sedges	Historically Confirmed		Threatened		S2S3	G4
Twin-leaf *Jeffersonia diphylla*	Other Flowering Plants	Recently Confirmed	1997	Threatened		S2	G5
Violet Bush-clover *Lespedeza frutescens*	Other Flowering Plants	Historically Confirmed		Rare		S3	G5

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Willdenow's Sedge *Carex willdenowii*	Sedges	Historically Confirmed		Threatened		S2S3	G5
Woodland Agrimony *Agrimonia rostellata*	Other Flowering Plants	Recently Confirmed	2004	Threatened		S2	G5
Woodland Bluegrass *Poa sylvestris*	Grasses	Historically Confirmed	1918	Endangered		S1	G5
Yellow Giant-hyssop *Agastache nepetoides*	Other Flowering Plants	Recently Confirmed	1992	Threatened		S2S3	G5

Plant: Ferns and Fern Allies

Blunt-lobe Grape Fern *Botrychium oneidense*	Ferns	Historically Confirmed		Endangered		S2S3	G4
Smooth Scouring Rush *Equisetum laevigatum*	Horsetails	Extirpated	1943	Endangered		SX	G5

Plant: Mosses

Hair-pointed moss *Cirriphyllum piliferum*	Other Mosses	Recently Confirmed	2005			S2	G5

Natural Community: Uplands

Calcareous Shoreline Outcrop *Calcareous shoreline outcrop*	Open Uplands	Recently Confirmed	2002			S2	G3G4
Great Lakes Bluff *Great Lakes bluff*	Open Uplands	Recently Confirmed	2002			S2S3	G4
Maple-Basswood Rich Mesic Forest *Maple-basswood rich mesic forest*	Forested Uplands	Recently Confirmed	1996			S3	G4

New York Nature Explorer

Common Name	Subgroup	Distribution Status	Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
Inland Salt Marsh *Inland salt marsh*	Open Peatlands	Recently Confirmed	1993			S1	G2
Red Maple-Tamarack Peat Swamp *Red maple-tamarack peat swamp*	Forested Peatlands	Recently Confirmed	2004			S2S3	G3G4
Rich Graminoid Fen *Rich graminoid fen*	Open Peatlands	Recently Confirmed	1992			S1S2	G3
Rich Hemlock-Hardwood Peat Swamp *Rich hemlock-hardwood peat swamp*	Forested Peatlands	Recently Confirmed	1992			S2S3	G3G4
Rich Shrub Fen *Rich shrub fen*	Open Peatlands	Recently Confirmed	2004			S1S2	G3G4
Shallow Emergent Marsh *Shallow emergent marsh*	Open Mineral Soil Wetlands	Recently Confirmed	2002			S5	G5

Natural Community: Lakes and Ponds

Great Lakes Aquatic Bed *Great Lakes aquatic bed*	Natural Lakes and Ponds	Recently Confirmed	2002			S3	G4

ATTACHMENT 2

POTENTIAL AVIAN RISK AT THE STATEWIDE WIRELESS NETWORK, CURRY & KERLINGER, LLC, JULY 2004

Potential Avian Risk at the Statewide Wireless Network (SWN)

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I. Introduction

This analysis was conducted to assess the potential risk to birds posed by the SWN. For more than 50 years, collision fatalities have been recorded at communication towers in the United States and it is well known that some types of communication towers pose a risk to birds. Various reviews have summarized what is known about the types of impacts and risk demonstrated or suspected at communication towers, as well as other tall structures (Avery et al. 1980, Trapp 1998, Shire et al. 2000, www.towerkill.com, and Kerlinger 2000). Currently, the U. S. Fish and Wildlife Service estimates that between 2 and 4 million birds are killed each year in the United States, but impacts could be as high as 40 million per annum (Manville 2000). Whether these fatalities are biologically significant has yet to be determined. With respect to federally endangered and threatened species, very few have been found at such towers, although species listed at the New York State level have been found in slightly higher numbers. A vast majority of these collisions have been at tall, guyed television towers (Shire et al. 2000, Kerlinger, unpublished analysis), with few to no birds being reported killed by cellular, state public safety systems, or AM radio system towers. Fewer studies have been conducted at the latter towers.

The level of fatalities at communication towers has recently been scrutinized by the U. S. Fish and Wildlife Service and has become a priority at that agency. A result of the concern by the U. S. Fish and Wildlife Service is a document that was written to provide guidance in reducing and minimizing potential impacts of communication tower development. Those guidelines include several best practices or practices that are believed to have the potential to reduce risk. The Service's guidance document has not been peer reviewed.

This analysis is divided into the following sections: II. Legal and ecological issues pertaining to bird impacts; III. A review of known impacts and risk factors; IV. An assessment of risk at the SWN; and V. Literature cited. The risk assessment section provides the important details potential risk to birds that can be anticipated from the development of the SWN.

II. Legal and Ecological Issues Pertaining to Bird Impacts

This section identifies legal and ecological issues that need to be addressed, with respect to birds, as part of the SWN development process. The permitting process, both New York State and federal, could focus on these issues as part of NEPA, SEQRA, or other permitting processes. The intent of this section is to inform the reader regarding the underlying laws that protect birds rather than how those laws may be implemented in the permitting process or during operation of the SWN after construction. How such laws are used varies from jurisdiction to jurisdiction and describing their use is beyond the scope of this section.

Both legal and ecological issues must be considered when assessing risk at proposed tower sites. The legal issues include federal and state laws protecting birds, as well as the regulatory and permitting processes that take avian impacts into consideration.

Regulatory/Legal Issues (See Caveat at the end of this section).

- Migratory Bird Treaty Act (federal) – MBTA - The Migratory Bird Treaty Act is a federal law that protects virtually all birds. The MBTA is a strict liability statute that stipulates birds cannot be taken (killed) without a federal permit ("take" permit, scientific permit, hunting license, depredation, or other permit). Although officials at the U.S. Fish & Wildlife Service and other federal agencies have stated that bird collisions with communication towers could be subject to prosecution under the MBTA, no enforcement action has occurred to date for incidents at such facilities, nor have actions been initiated (at least publicly). The U. S. Justice Department seems to be exercising prosecutorial discretion with respect to the MBTA for corporate, state, and federal agencies that own and operate communication towers. There is no provision under MBTA for Incidental take permits and they have generally not been granted for accidental takings. The MBTA does not take into account whether a taking is intentional or unintentional, nor does it take into account whether takings are likely to result in biologically significant issues. With respect to unintentional takings of MBTA protected birds, few prosecutions have occurred despite high levels of such fatalities. For example, in New York State, tens of thousands or more grassland birds are killed during hay mowing and there are many other practices that kill thousands of birds per year, but have not been scrutinized by the Justice Department or the U. S. Fish and Wildlife Service.

- Endangered Species Act (federal and state) – ESA - The Endangered Species Act is a federal law that provides for criminal prosecution of those who kill, harm, or harass species listed by the U. S. government as Endangered or Threatened. The penalties include fines and/or imprisonment. The primary agency entrusted with responsibility for this law is the U. S. Fish and Wildlife Service. The Act is most often invoked when listed (endangered or threatened) species are killed or harassed. The Act also

includes the protection of habitats of listed species. There are also state counterparts to the ESA and lists of endangered, threatened, and candidate species. The New York State Department of Environmental Conservation also maintains a list of endangered and threatened species, although the state law affords a different level of protection for those species.

- Bald & Golden Eagle Protection Act (federal) - B&GEPA - This law protects these species from killing, harming, and harassment. It provides for penalties (fine and/or imprisonment) that are greater than those provided by the MBTA, and similar to those provided by the ESA. It has been used to prosecute people who shoot eagles as well as companies whose power lines have electrocuted these birds. The latter has only occurred a few times; in instances where utilities have not diligently sought to remedy or mitigate a recognized problem (e.g. no insulation added to wires to prevent electrocution) when recommended by the U. S. Fish & Wildlife Service. In New York State, about 15 Bald Eagles have been killed by Amtrak trains, but no prosecutions have moved forward. Thus, there seems to be some degree of prosecutorial discretion depending on various factors.

- Species of Special Concern (state and federal) - SSC – The federal government and New York State Department of Environmental Conservation maintain lists of species of concern. These species are believed to be declining or rare and in some cases are candidates for official listing as endangered or threatened. With respect to federal authority and jurisdiction, the birds on these lists are legally protected by the MBTA.

- National Environmental Policy Act – NEPA – Projects involving federal dollars, federal agencies, federal licensing or permitting, or federal lands are subject to NEPA review, usually in the form of a Biological Assessment, Environmental Assessment, or Environmental Impact Study, depending on the size and type of project and the potential degree of impact. Strict adherence to the ESA (and B&GEPA) is the norm, although attention to the MBTA has rarely been brought up as an issue by federal agencies (see Caveat below). The U. S. Fish and Wildlife Service has the authority to review or comment on many NEPA applications and they also comment on issues relating to the three federal laws listed above. The FCC licensing process for communication facilities will undoubtedly provide a review opportunity to the U. S. Fish and Wildlife Service. In addition to legal issues, NEPA often requests analyses of biological significance, as well as cumulative impacts resulting from a project.

- State Environmental Quality Review – SEQR. This law pertains to state level permit review. It covers various types of developments including some communications projects. The SEQR rules and regulations are complex and the reader is referred to the actual documents. The SEQR process does take the above listed avian laws into consideration, although the state statutes seem to rely more on the biological significance of impacts rather than the federal legality of such impacts. In addition, cumulative impacts of facilities are sometimes requested.

<u>Caveat/Disclaimer.</u> The above should not be construed as legal interpretation or advice. It should be noted that various U.S. Fish & Wildlife officials have stated publicly that even one fatality is illegal and could be the subject of prosecution under the MBTA. The applicability of the laws and acts protecting wildlife provided above should under go legal review.

III. Review of Known Impacts and Risk Factors

Two types of impacts may potentially result from the development of communication facilities. The first, and best known, is collision fatality. Such fatalities occur predominantly among night migrating birds such as songbirds and songbird like species. Also involved are rails and smaller numbers of shorebirds and waterfowl. It is likely that night migrating birds collide as they pass during night flight. A few birds have been demonstrated to collide with towers during daylight hours, but their numbers are but a very small percentage of the overall total (Avery et al. 1980, Shire et al. 2000). The types of birds involved are detailed in Shire et al. (2000) and in general migration treatises (Kerlinger 1995, Able 1999).

A second impact can result from the construction of new towers. Birds may avoid an area during construction or they may be displaced from an area after a tower is constructed. Construction of towers necessitate the clearing of habitat in some cases, as well as the presence of people, and machines. Because this activity is short-lived, it is unlikely to be a major issue, especially if conducted outside the nesting season. The habitat disturbance and presence of a imposing tower and guy wires may cause some birds to be displaced or avoid an area. This has rarely been studied and it is likely that most of the types of birds that are displaced habituate rapidly to tower presence. For this reason, the following paragraphs primarily detail collision fatalities and risk factors associated with collisions.

<u>Collision Fatality Impacts – How They Occur During Migration</u>

During migration, birds migrate over a broad front through the night airspace over much of the United States. They are spread rather evenly over the landscape, although there are some concentrations known from coastal areas. There are also concentrations during daylight hours in areas where there is good stopover habitat in which to rest and feed before undertaking the next leg of the migratory journey. The migrants that fly through New York include birds that nest in New England, eastern Canada (Quebec and Maritime Provinces, Ontario, and portions of the Northwest Territories. These birds pass through New York on their way to the southeastern MidAtlantic United States or the tropics where they spend the winter. As these birds fly over New York they are spread out from the western tier to Long Island in a broad front. Aside from concentrations at the shores of the Great Lakes and along a few river valleys (probably the Hudson) and along the Atlantic shore areas, there are no real concentration areas. In other words there are few interior corridors.

Night migration commences at about 30-60 minutes after sunset, whereupon the vast majority of warblers, vireos, tanagers, sparrows, flycatchers, orioles, buntings, and other night migrants takeoff. Waterfowl and shorebirds follow this schedule to a lesser extent, but they are most active in migration after 1 hour after sunset. During the initial few minutes of migration birds climb, rather rapidly, usually to more than 500 feet above ground level (AGL). By 1-2 hours after the sun sets, about 75% of all night migrants can

be found between 300 and 2,000 feet AGL (Able 1970, Kerlinger and Moore 1989). A few birds are scattered below about 500 feet and a slightly larger number are spread above this level. Waterfowl and shorebirds generally tend to migrate at higher altitudes than night migrating songbirds, and may be found as high as 10,000 feet AGL.

With respect to night migrating species that are killed by communication towers, there has been only 1 federally listed species known to be killed at this time. Two, Red-cockaded Woodpeckers were killed by tall, guyed communication towers in the southeastern United States (Shire et al. 2000), suggesting that listed species rarely are killed by such structures. New York State listed species have also been killed in small numbers by tall, guyed communication towers, although those species have been killed in different places. For example, Pied-billed Grebe, Least Bittern, Common Tern, Northern Harrier, Upland Sandpiper, Loggerhead Shrike, Sedge Wren, and Henslow's Sparrow. In addition, species listed as of special concern in New York State are also on the fatality lists from tall, guyed communication towers. Grebe's seem to be more at risk, for unknown reasons. Their numbers far exceed the numbers reported for the other species, which are represented by fewer than 5 individuals for most cases.

Migration of most night migrating birds usually continues through the night along relatively level and straight courses through the night with little correction for topography (Berthold 2001). Birds will alter their altitude dependent upon wind and other weather factors (Alerstam 1990). They fly until at least 2-3 in the morning and finally put down at or before dawn, or when suitable habitat is found.

During night flight, collisions with towers have been noted both during clear and poor weather. It is theorized that fewer collisions occur on clear nights such that birds cruising at normal migration altitudes simply do not see guy wires and fly into them. These events involve scattered fatalities rather than groups of fatalities, with a single bird colliding with a single guyed tower here and there, although multiple fatalities, involving 2-4 individuals have occurred at some towers on clear evenings. Large-scale fatality events, involving dozens to hundreds or even thousands of individuals have occurred, but have occurred exclusively during times of fog, low cloud cover, and light rain or snow. At these times, it is believed that birds are attracted to lights on communication towers There are some who believe that these birds are lured to lower altitudes by lights or made to fly lower to stay below cloud cover, but direct evidence is difficult to find. Either way, the birds fly toward FAA or other lights until they are near a tower. They then circle or mill around until they either tire and fly onward or they collide with tower guy wires. This is described in many of the references in the Avery et al. (1980) review, as well as by Cochran and Graber (1958). Large scale events triggered by weather are well documented in the literature at communication towers.

Known Risk Factors at Communication Towers

Three collision risk factors regarding tower configuration have emerged from studies of birds at communication towers. These factors generally do not operate alone, such that they interact as described below. The following bullets are based on an exhaustive

survey of the literature by the senior author, involving examination of hundreds of journal articles, newsletter Those references are listed in Avery et al. (1980), Trapp (1998), Shire et al. (2000), and Kerlinger (2000), as well as references listed at the end of the report.

➢ Height – A review of the literature shows that birds collide with towers of virtually all heights. However, large scale fatality events are limited, almost exclusively, to towers in excess of 500 feet in height. For example, a review of the original 47 studies listed in Shire et al. (2000) revealed that only 1 of the reports they reviewed was from a tower less than 500 feet and 3 of the towers of the 47 were less than 600 feet. The literature suggests a non-linear increase in risk that occurs somewhere between about 400 feet and 700 feet. Towers less than 500 feet have been involved in large scale fatality events but those have almost entirely been documented to involve non-FAA lights – as described below. Thus, it is likely that towers in excess of 500-600 feet present far greater risk to night migrating birds, on a per tower basis, than do towers less than 500 feet in height.

A critical study showing how height of guyed communication towers is a prime risk factor was published by Crawford and Engstrom (2001). At a site in northern Florida, a team of biologists studied a 1,000 foot tall, guyed and multiply lit (red lights) communication tower for more than 20 years. The tower was known to kill more than 1,000 birds per year in many years until the height was reduced to 308 feet. It was still guyed and lit, but following the height reduction large scale fatality events ended and the numbers of birds killed were reduced by something on the order of 90-98+% per year. This tower is one of the most intensely studied towers in the world and the best comparative study showing that shorter towers, even when located in the same place as a tall tower known to kill large numbers of birds, have much less impact on night migrating birds.

Additional supporting evidence that structures less than 500 feet are not involved in large scale fatality events comes from the wind power industry. In a paper presented by Kerlinger to the American Wind Energy Association and the American Bird Conservancy meeting on May 19, 2004, in Washington, DC, it was reported that large scale fatality events at communication towers have never been documented. Kerlinger concluded that because wind turbines were generally less than 300 feet in height and always shorter than 400 feet in height, they do not extend in to the height of migration in such a way that they pose a major risk to night migrating birds. Like communication towers shorter than 500 feet in height, fatalities occur, but at rates that are likely to be on the order of 1-10 birds per tower per year (see Erickson et al. 2001 for rates for wind turbines).

(There are several reports of large scale events occurring at towers less than 500 feet in height, but without exception, those towers have either been located adjacent to a source of bright lights, or they have had bright lights mounted on them. The best example is reported by Trapp (1998) at a site near Syracuse, Kansas. Trapp reported what was written in newspapers and other popular accounts. Some 10,000 birds had been found dead at three communication towers after a snowy night. This author visited the site and spoke with those who picked up the carcasses. The site was actually a natural gas

pumping station with many bright, sodium vapor lamps and other lighting. Birds were found dead on the fences around the facility, on equipment within the facility, impaled on wheat straw, and around three guyed communication towers at the facility. Clearly, this was not a normal communication tower situation. This is similar to the spotlight on the Washington Monument that was demonstrated to attract birds that eventually flew into the monument and died. Without such lighting, only one tower less than 500 feet in height (with FAA lighting) has been demonstrated to be involved in a large scale fatality event.)

➢ Guy Wires – Guy wires in and of themselves are the single most important risk factor with respect to bird collisions. It has long been suspected that guy wires are responsible for most of the fatalities at communication towers and guy wires on meteorology towers at wind power facilities (analogues of short, guyed, communication towers) do kill small numbers of birds (unguyed meteorology towers do not). This conclusion is based on the fact that not a single large scale fatality event has ever been reported from an unguyed tower. Because unguyed towers are generally not in excess of 500 feet in height, these types of towers do not extend, to a great degree, into the main range of night migrating birds. It should be stated that, to this author's knowledge, only one or two fatalities have been reported from unguyed communication towers. The only documentation that could be confirmed was of a single bird that flew into a 475 foot unguyed communication tower in Michigan State Police Communication System. A study currently being conducted by Dr. Joelle Gehring and the author of this report, revealed that searches conducted after 20 nights of migration in autumn 2003 under three 475 foot unguyed, lattice communication towers, not a single bird was found. During the spring of 2004, 6 nights of study at 6 towers of the same structure, only one dead migrant was found. Not a single reference is available from the published or unpublished literature that documents any fatalities at unguyed communication towers (Avery et al. 1980, Trapp 1998, Shire et al. 2000, Kerlinger 2000, Erickson 2001). This fatality may or may not have been a result of collision. Despite the fact that these types of towers are widely distributed and visited frequently, they rarely, if ever, kill birds. Thus, unguyed towers pose virtually no risk to birds.

➢ Lighting – The literature clearly shows that lights attract night migrating birds during periods of low cloud cover, fog, and light precipitation. Bright sodium vapor lamps and spotlights have been shown to be most attractive (Avery et al. 1980). Lights on communication towers have also been demonstrated to be highly attractive in specific weather conditions. The type of FAA lighting that has mostly been shown to attract night migrating birds has been the combination of flashing red (L-864) and steady burning red lights (L-810). This is the basic type of lighting that has been mounted on almost all (with a very few exceptions) towers studied to date. The fact that 1,000 foot tall towers have upwards of 9 steady burning lights and 5 flashing red lights also suggests that towers with more lights are more attractive. That conclusion is based on the fact that the incidence of larges scale fatalities occurs most often at towers in the range of 800-1,500+ feet AGL.

(Kerlinger presented a paper at both the National Wind Coordinating Committee Wildlife Working Group – November 2003, and at the American Wind Energy Association and the American Bird Conservancy meeting on May 19, 2004, in Washington, DC, that demonstrated that flashing red lights (L-864) as mounted on wind turbines (without the L-810s steady burning lights that are on communication towers) do not appear to attract night migrating birds. Despite their presence on wind turbines during nights with migration and fog, no large scale fatality events occurred at these turbines. In fact, hardly any fatalities were found despite studies being conducted at about a dozen wind power facilities in the United States. Also see Erickson et al. 2001.)

These results combined with the fact that there is no evidence that white strobes attract night migrating birds, strongly suggests that it is the multiple sets of steady burning red (L-810) lights that attract night migrating birds to communication towers. Towers with these types of lights pose a greater risk than do towers that are unlit or towers that have only flashing lights.

Suspected Risk Factors – Unsubstantiated

There is some speculation (see U. S. Fish and Wildlife Service communication tower guidelines document) that risk increases when towers are erected close to wildlife refuges, duck clubs, or areas where birds concentrate in large numbers. The guidelines document also suggests that communication towers placed in or near migration flyways are riskier. However, there is no evidence to support these contentions. Towers in the middle of corn fields in Wisconsin and other Midwestern states have been some of the most lethal in terms of night migrating birds. Those towers were nowhere near refuges, or other wildlife areas. They were however, tall towers with guy wires and combinations of red flashing and steady burning lights.

Type of Communication Tower and Risk

With respect to the types of communication towers that present risk to birds, the literature suggests that television towers are the riskiest. Virtually all of the 47 studies listed in the Shire et al. (2000) were conducted at television towers in excess of about 500-600 feet. To a lesser extent some of those tall towers were also used for FM transmission. A review of most of the hundreds of references in the literature (Avery et al. 1980, Trapp 1998, etc.) reveals that there are few or no known fatalities from towers used for AM radio, public safety systems (800 megahertz), or wireless telephone. The reason is likely the shorter height of AM and other towers and on the fact that many of thes types of towers are not guyed. It is likely that some fatalities do occur at these facilities, but that they occur at levels that do not interest researchers or environmentalists. After searching such towers a few times, people seem to give up because they have not been “rewarded” by finding large numbers or any birds. Studies like the one currently being conducted at the Michigan Public Safety Communication System by Dr. Gehring are showing that the unguyed towers in these systems are virtually free of collisions, whereas the guyed towers in the 475 foot range kill small numbers of birds per year. It is likely that the fatalities at these types of towers (with red flashing and red steady burning FAA lights)

kill perhaps 5-20 birds per tower per year, over much of the Midwest and eastern United States. Those rates will be better known in the near future.

IV. Assessment of Risk at the New York State Wireless Network (SWN)

A generic analysis of the type and magnitude of known impacts is provided below. Each of the following sections assesses the potential risk to birds the different types of communication structures that are likely to be used in the SWN.

For the SWN, between 500 and 1,200 antenna facilities will be required. The types of facilities are reviewed below.

- Microwave Dishes - These structures by themselves do not pose a significant risk to migrating birds. The towers on which they are mounted could pose risk, depending on the characteristics of those towers (see above section and below). If microwave dishes are placed on existing towers, risk will not be increased. The reason for this is that microwave dishes do not significantly raise the height of towers, nor do the change their structure in a great way. If such dishes require new towers, the risks discussed below for guyed and unguyed towers apply.

- Colocation of Antennas on Existing Structures (towers, buildings, electrical transmission towers, bridges, smoke stacks, tunnels, etc.).

Single or multiple whip antennas (typically 12 feet in length, tapering from 4-6 inches at the base to 1-2 inches at the top) are normally installed on existing communication towers or other structures. In the case of antennas placed on existing structures, there is not likely to be a demonstrable impact to birds. The towers on which these antennas are mounted may present some risk to birds, but the actual SWN antenna is unlikely to add to that risk. The literature provides no indication that such antennas present any risk to birds, so they are not likely to provide significant collision risk to migrants. Although the towers or structures on which these whip antennas are erected may pose risk to birds, the addition of antennas does not significantly add to that risk.

- Replacement Towers –

In some cases existing towers will either be reconstructed or renovated for the SWN. The degree of additional or new risk at these towers will depend on whether the new tower will be taller than the old tower, have more guy wires, or have lighting that will be more attractive to birds. If there is no change in any of these factors, risk is not likely to increase, so there is not likely to be an increase in impact. If, however, the tower height is increased, the number of guy wires is increased, and, or the amount of tower lighting increases, risk is likely to increase. For a detailed assessment of risk at taller towers or towers with more guy wires, see the next section.

- New Towers

Three types of new towers are likely to be proposed for construction. These towers may or may not be guyed. The range in height is likely to be from about 40 feet to upwards of 300+ feet AGL. Structures would include simple electrical/telephone poles

in the 40 foot tall range (existing distribution/telephone poles) without guy wires, unguyed lattice towers to 300+ feet, unguyed monopole towers to similar heights, and guyed towers to more than 300 feet AGL. The design and exact height of the towers, as well as exact lighting specifications has yet to be determined. The assessment that follows is generic for these general types of towers and general heights. It is assumed that towers in excess of 199 feet will have FAA lighting, usually flashing red L-864 lights on the top of the tower and possibly at mid-tower level, plus steady burning red L-810 lights at intermediate levels. The number, length, and position of guy wires varies depending on the site and tower design, for those towers that would have guy wires.

- Lattice - free standing (no guy wires) – heights up to 300 feet
- Monopole - free standing (no guy wires) – heights up to 300+ feet
- Guyed – guy wires will be present – heights up to 300 feet

Assessment of Potential Risk from the SWN. The following risk assessments examine potential risk to specific types of birds at guyed communication towers only. Because there is virtually no risk at collocated antennas and microwave dishes on existing towers, buildings, telephone poles, and other types of structures, these communication facilities are not considered. In addition, the demonstrated absence of risk at unguyed communication towers is not examined. The level of risk at unguyed towers of any height is likely to be deminimis.

Collision Risk to Endangered and Threatened Species. Because risk to listed species at short, guyed communication towers has not been demonstrated, these towers are not likely to result in a significant biological impact to state or federally listed species. Virtually all documented records of impact to listed species have occurred at guyed communication towers in excess of 500-600 feet, which is generally 200+ feet taller than the tallest towers that are likely to be constructed for the SWN. However, there is still a level of risk that is greater than zero, although very small.

Collision Risk to Raptors. Risk to raptors at guyed communication towers is almost nonexistent. Fewer than about 5 records of raptors colliding with communication towers can be found in the literature from across the continent and there do not seem to be records from New York State. Such impacts, if they occur in the SWN, are likely to involve very small numbers of individuals. Those isolated impacts are not likely to be biologically significant.

Collision Risk to Waterfowl and Waterbirds. Very few waterfowl or other waterbirds are on the lists of birds that collide with communication towers (Shire et al. 2000). The fact that almost all of the waterfowl and waterbirds listed in that report were found beneath communication towers in excess of 500-600 feet AGL, suggests that the new SWN towers will not pose a significant risk to waterfowl or waterbirds. A majority of the new, guyed towers in the SWN are likely to be less than 300 feet AGL The height of waterfowl migration is generally in excess of 500 feet (Bellrose 1976) and usually

proceeds at higher altitudes than for night migrating songbirds (Kerlinger and Moore 1989). Overall risk to these birds from the new SWN guyed communication towers is likely to be minimal and not biologically significant.

It is possible that very small numbers of non-waterfowl type waterbirds (rails, bitterns, etc.) may collide with the guyed towers in the SWN system, although it has not been demonstrated that these birds collide with shorter towers or other short structures. Risk to these birds is likely to be the same as for waterfowl, in terms of population scale risk.

Collision Risk to Shorebirds. Comparatively few shorebirds have been demonstrated to collide with communication towers or other tall structures. A list containing the numbers of these birds appears in Shire et al. (2000). As with waterfowl, shorebirds migrate at night and migrate at very high altitudes. They generally migrate at higher altitudes than night migrating songbirds, thereby reducing the potential for any collisions with the SWN towers. It is unlikely that the new, guyed SWN towers would likely pose a biologically significant risk and most, if not all, are likely to present no risk to these birds.

Risk to Night Migrating Songbirds. It is unlikely that the new SWN towers will pose a biologically significant risk to night migrating songbirds, although small numbers of birds are likely to collide with the guy wires of the tallest of these towers. This assessment is based on the fact that so few night migrating birds have been demonstrated to collide with guyed communication towers greater less than 500-600 feet in height, even when they are equipped with FAA lights. However, the issue of cumulative impact may be relevant, depending on the exact height and number of guyed towers that are added to the landscape of New York. Without more information on how many new guyed communication towers will be added to the landscape and their height and lighting, cumulative impacts cannot be quantitatively addressed.

Habitat Impacts. The issue of habitat impacts is relevant in the case of some new towers. Impacts from tower construction include clearing habitat and presence of construction and maintenance staff. It is possible that such habitat clearing would displace some species. This is especially relevant in the case of listed species and sensitive species. In addition, if clearings are made in forests that are large, contiguous and undisturbed, or grasslands of similar quality, fragmentation impacts may occur. This could change species composition, including the introduction of edge species, as well nest parasites and predators. Also, the presence of tall structures can displace some species of birds, especially those in grassland habitats. Leddy et al. (1999) demonstrated that some grassland nesting birds were displaced near wind turbines. Although communication towers do not have moving parts, their imposing size may cause some avoidance, although habituation of these birds has been demonstrated. In the case of species such as Henslow's Sparrows and Upland Sandpipers, both state listed species, the presence of a tall structure could be an issue. Large grassland sites should be checked for these types of species. The more common grassland birds such as Bobolinks, Eastern Kingbirds, and Savannah Sparrows do not avoid guyed towers, and even perch on the guy wires.

For collocation of antnennas and microwave dishes, there would be no additional habitat impact. Those structures will not be considered further.

Towers in the SWN may be erected in the following general types of habitat areas. Potential impact to birds from guyed and unguyed towers erected in those habitats are as follows.

- Major Metropolitan Areas – Because these areas are already highly disturbed and fragmented there is not likely to be any impact to nesting or foraging birds.
- Minor Metropolitan Areas – In most of these situations, the habitats are not considered to be high quality and birds present will not be impacted. Birds present in these types of habitats have long since habituated to a variety of structures and new communication towers will have either no impact or minimal impact.
- Town and Village Areas – Depending on the type of habitat (forest, field, etc.) in which new towers are erected in town and village areas, there may be some impact. However, these areas are generally not considered suitable for listed or sensitive species, so new towers would not likely have an impact to these birds. In the case of more common birds, that predominate in these areas, the impacts are likely to be minimal and not biologically significant.
- Rural Areas – The impact of new towers in rural areas is dependent upon the type of habitat in which they are situated. If towers are situated in tilled agriculture no impact is likely. Few birds use tilled agriculture to nest, although some forage in corn, soy, and wheat fields, mostly after harvest. Birds foraging in these habitats would not be disturbed by the presence of communication towers. If towers are situated in brush and forest edge habitat, impact is likely to be minimal or nonexistent. Birds of these areas are adapted to disturbance. If, however, the habitat in which new towers are proposed are large, contiguous forest or grassland, habitat impacts could occur. The degree of these impacts would have to be considered on a case by case basis, dependent on the habitat present.
- Recreation, Open Space, Forest Land & Park Land Areas – Impacts in these areas, in general, are expected to be minimal. However, if towers are planned for large, contiguous forests or grasslands, or other special or sensitive habitats, onsite work is likely to be needed to determine whether habitats will be significantly impacted. If there is indication of this, closer scrutiny of the bird species that are likely to be present would be indicated. Fragmentation of large contiguous grassland and forest would likely be the most important impact and such areas should be examined closely.
- Coastal Areas – Impacts in coastal areas are similar to those inland. Wetland habitats would likely not be developed. Areas adjacent to wetlands or open water could result in habitat impacts depending on the type of habitat and Such impacts are likely to be minimal, with the possible exception of some species.

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APPENDIX D

AIR RESOURCES

APPENDIX D

Table 1 - Criteria Air Pollutants - Sources and Effects

Pollutants and Their Sources	Public Health and Welfare Effects
*Ozone (O_3): O_3 is not emitted directly into the atmosphere. It results from a series of complex chemical reactions involving primarily nitrogen oxides and volatile organic compounds in the presence of heat and sunlight. These reactions are time-dependent and usually take place far downwind from the site where the ozone precursors were originally emitted. These precursors are emitted typically by motor vehicle and industrial processes using solvents.	Health: O_3 is a highly reactive gas that irritates the mucous membranes and other lung tissues, causing respiratory impairment. O_3 has been found to affect not only those with respiratory problems, such as asthma, but also healthy adults and children. Effects include breathing difficulty when exercising and reduced resistance to respiratory infections. Acute exposures cause bronchial constriction, lung edema and abnormal lung development. Welfare: Toxic to plants, causing leaf damage and decreased growth. Weakens materials such as rubber and fabrics.
Carbon Monoxide (CO): The major source of CO is the incomplete combustion of fuels used to power vehicles. Motor vehicles are the principal source of urban CO emissions. CO is a site-specific pollutant. High levels of CO are found near the source, e.g., heavily congested intersections. Other sources include power plants, industrial processes and space heating.	Health: CO enters the bloodstream by combining with hemoglobin, which reduces the amount of oxygen carried to organs and tissues by the blood. The health threat is most severe for those with cardiovascular disease. Healthy individuals are affected at higher concentrations (>30 ppm). Symptoms include shortness of breath, chest pain, headaches, confusion and loss of coordination. Welfare: No known effect on materials or vegetation.
Sulfur Dioxide (SO_2): SO_2 results largely from the combustion of sulfur-bearing fuels such as coal and oil in heat and power generation facilities. Other sources include pulp and paper mills, refineries and non-ferrous smelters. The combustion of gasoline and diesel fuels in motor vehicles accounts for a very small percentage of the total SO_2 emitted.	Health: SO_2 combines with water vapor to form acidic aerosols that irritate the respiratory tract. It aggravates symptoms associated with chronic lung diseases such as asthma and bronchitis. Welfare: SO_2 is a primary contributor to acid deposition that causes acidification of lakes and streams. Acid deposition also damages materials (corrodes metals and degrades rubber and fabrics), injures vegetation and causes visibility degradation.
Nitrogen Dioxide (NO_2): NO_2 is formed in the atmosphere from the oxidation of Nitrogen Dioxide (NO). NOx is the term used to describe the sum of NO, NO_2, and other oxides of nitrogen in the atmosphere. The major source of NOx is fuel combustion in boilers and engines associated with power plants, motor vehicles, industrial furnaces, and space heating.	Health: NO_2 can cause irritation to the lungs and lower resistance to respiratory infections, and can aggravate symptoms associated with asthma and bronchitis. Welfare: NO_2 decreases visibility by causing a reddish-brown haze. It contributes to acid deposition that cause acidification of lakes and streams, as well as plant injury and damage to materials (metals, rubber, and fabric).
Particulates (PM_{10} and $PM_{2.5}$): Particulate matter consists of tiny airborne particles or aerosols (dust, dirt, smoke and liquid droplets). It occurs as a result of incomplete fuel combustion. Sources include factories, power plants, motor vehicles, construction activities and fires. Diesel fuel contributes more particulates to the atmosphere than gasoline.	Health: PM_{10} and $PM_{2.5}$ particles, because of their small size, can be inhaled. Health effects are often not immediately noticed. The particulates can accumulate in the lungs after long-term exposure and affect breathing and respiratory symptoms. The lungs' natural cleansing and defense mechanisms are impaired. Welfare: Causes soiling and corrosion to materials. Decreases visibility by forming atmospheric haze.
Lead (Pb): The primary source for airborne Pb used to be motor vehicles, but the use of unleaded gas has dramatically reduced Pb emissions.	Health: Causes mental retardation and brain damage (especially in children) and liver disease. May be a factor in high blood pressure. Damages the nervous system. Welfare: No direct impact on vegetation.

*"Bad" ozone regulated by this standard is tropospheric or ground-level ozone arising from human activity, which has the adverse effects discussed above. This is different from "good" stratospheric ozone created by sunlight in the upper atmosphere, which prevents damaging ultraviolet radiation from the sun from reaching the earth's surface. For more information see EPA brochure EPA-451/K-03

001, June 2003,"Ozone: Good Up High, Bad Nearby", available at http://www.epa.gov/oar/oaqps/gooduphigh/

APPENDIX D

Table 2 - National and State Ambient Air Quality Standards

Pollutant and Averaging Time	Primary Standard[1]	Secondary Standard[1]
Carbon Monoxide		
8-Hour Maximum	9 ppm[3]	9 ppm
1-Hour Maximum	35 ppm[3]	35 ppm
Nitrogen Dioxide		
Annual Arithmetic Mean	100[2]	100
Ozone		
1-Hour Maximum	0.12 ppm[4]	0.12 ppm
8-Hour Maximum	0.08 ppm[5]	0.08 ppm
Particulate Matter[9]		
PM_{10}		
Annual Arithmetic Mean	50[2]	50
24-Hour Maximum	150[6]	150
$PM_{2.5}$		
Annual Arithmetic Mean	15[2]	15
24-Hour Maximum	65[7]	65
Lead		
Quarterly Arithmetic Mean	1.5[8]	1.5
Sulfur Dioxide		
Annual Arithmetic Mean	80[2]	---
24-Hour Maximum	365[3]	---
3-Hour Maximum	---	1300[3]

Notes:

1. All concentrations in micrograms per cubic meter of air ($\mu g/m^3$) or, except where noted, in parts per million (ppm).
2. Not to be exceeded during any calendar year.
3. Not to be exceeded more than once a year.
4. Expected number of exceedances shall not be more than once per year (3-year average).
5. Standard attained when 3-year average of annual 4th-highest daily maximum 8-hour concentration is below 0.08 ppm.
6. Standard attained when annual highest 99th percentile of 24-hour concentrations over 3 years is below 150 $\mu g/m^3$.
7. Standard attained when the annual highest 98th percentile of 24-hour concentration over 3 years is below 65 $\mu g/m^3$.
8. The quarterly lead standard is not to be exceeded during any calendar quarter.
9. PM_{10} - particulate matter diameter of 10 microns or less; $PM_{2.5}$ - particulate matter diameter of 2.5 microns or less.

Sources: 40 CFR 50; EPA Fact Sheets, July 1997; EPA Press Release, March 26, 2002.

Appendix D, Table 3

Cayuga County - Diesel Engine Emission Factors & Estimated Annual Emissions

Engine:	**John Deere**	
Rating, kW	50	
hp/kW	1.3410	
Rating, hp	67	See Footnote (1).
Fuel, gal/hr	4.3	
Fuel, BTU/gal.	137,000	
hr/yr	8760	

Criteria Pollutants

	grams/hp-hr	**lb/hr**	@8760 hrs **lb/yr**	@8760 hrs **tpy**
NOx	3.20	0.47	4144	2.07
HC	0.07	0.01	97	0.05
PM	0.15	0.02	194	0.10
CO	0.8	0.12	1036	0.52
SO_2	See (1)	9.13E-04	8.0	0.00

(1) Ultra Low Sulfur Diesel (ULSD) Calculations:

	gal/hr	**lb/gal**	**ppm**	**factor**	**lb/hr, S**	**SO_2/S, lb/lb**	**SO_2, lb/hr**
	4.3	7.08	15	0.000015	0.000457	2.00	**0.000913**

Hazardous Air Pollutants (HAPs)

	lb/mmBTU	**lb/hr**	@8760 hrs **lb/yr**	@8760 hrs **tpy**
Benzene	9.33E-04	5.50E-04	4.81	0.002
Formaldehyde	1.18E-03	6.95E-04	6.09	0.003
Toluene	4.09E-04	2.41E-04	2.11	0.001
Xylenes	2.85E-04	1.68E-04	1.47	0.001

(1) Diesel engine, 67 hp, exempt from permitting according to 6 NYCRR Part 201-3.2(c)(b).

Appendix D, Table 4

Summary - Maximum Localized Impacts - Criteria Pollutants & Volatile Organic Hazardous Air Pollutants (VOHAPs)

Values indicated below are maximum modeled concentrations for a
50 kW generator set firing diesel fuel.

	Criteria Pollutants							
Pollutant	**NO_2**	**CO**		**$PM\backslash PM_{10}\backslash PM_{2.5}$**		**SO_2**		
Averaging Period	**Annual**	**1-hour**	**8-hour**	**24-hour**	**Annual**	**3-hour**	**24-hour**	**Annual**
NAAQS, µg/m^3	**100**	**40,000**	**10,000**	**35**	**15**	**1300**	**365**	**80**
Engine Size, kW	**Maximum Modeled Concentration Firing Diesel Fuel, µg/m3**							
50	6.03	18.83	13.2	1.41	0.28	0.13	0.06	0.012

	HAPs							
Pollutant	**Benzene**		**Formaldehyde**		**Toluene**		**Xylenes**	
Averaging Period	**1-hour**	**Annual**	**1-hour**	**Annual**	**1-hour**	**Annual**	**1-hour**	**Annual**
NYSDEC Guideline Concentration, µg/m^3	**SGC** **1,300**	**AGC** **0.13**	**SGC** **30**	**AGC** **0.06**	**SGC** **37,000**	**AGC** **400**	**SGC** **4,300**	**AGC** **100**
Engine Size, kW	**Maximum Modeled Concentration Firing Diesel Fuel, µg/m3**							
50	0.022	NM*	0.030	NM*	0.046	NM*	0.01	NM*

* NM - Not modeled. Generator sets used for backup power only.

APPENDIX E

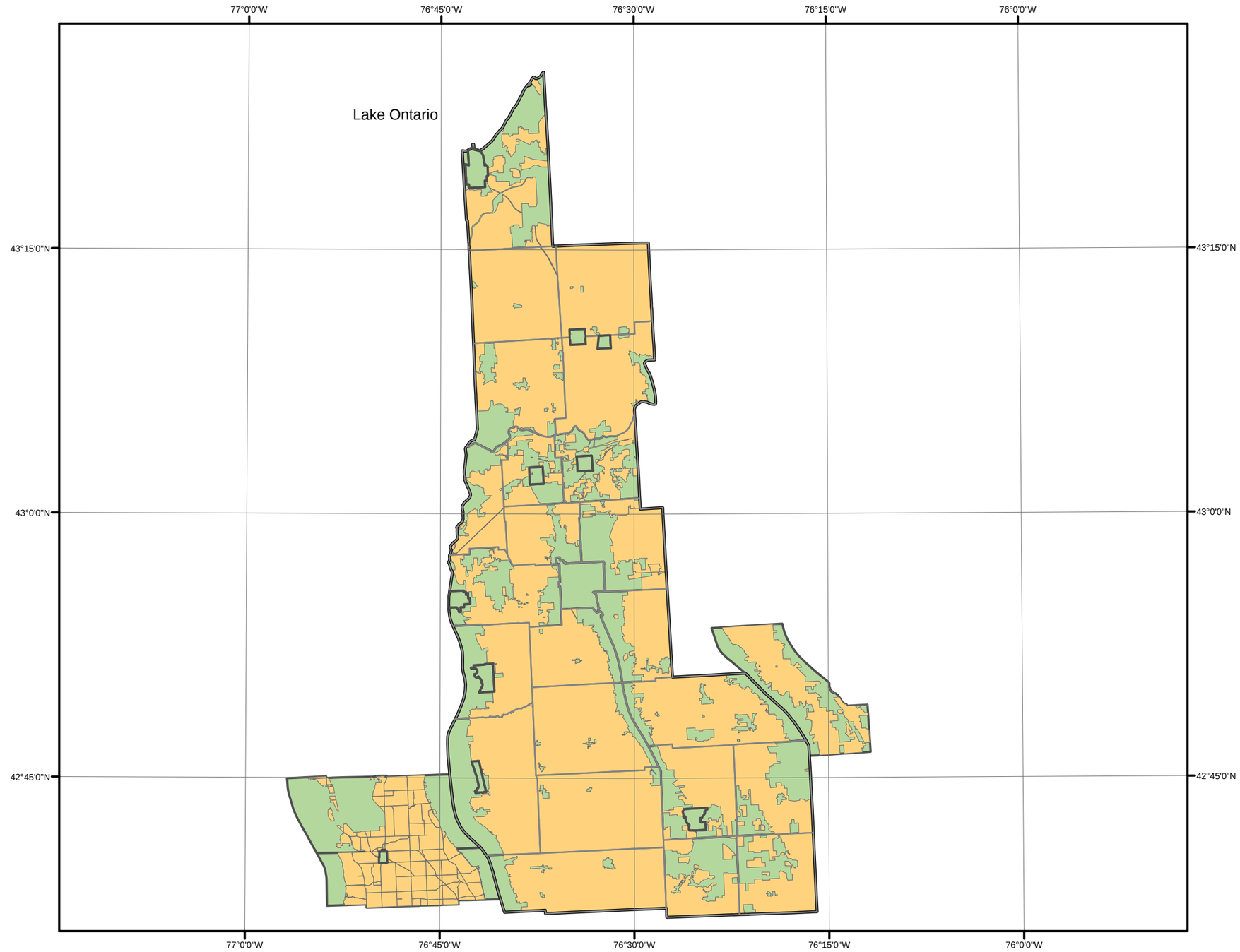
AGRICULTURAL RESOURCES

STUDY AREA
AGRICULTURAL DISTRICTS

Legend

- Agricultural Districts
- County Boundary
- Municipal Boundaries

NOTE: DATA OBTAINED FROM CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

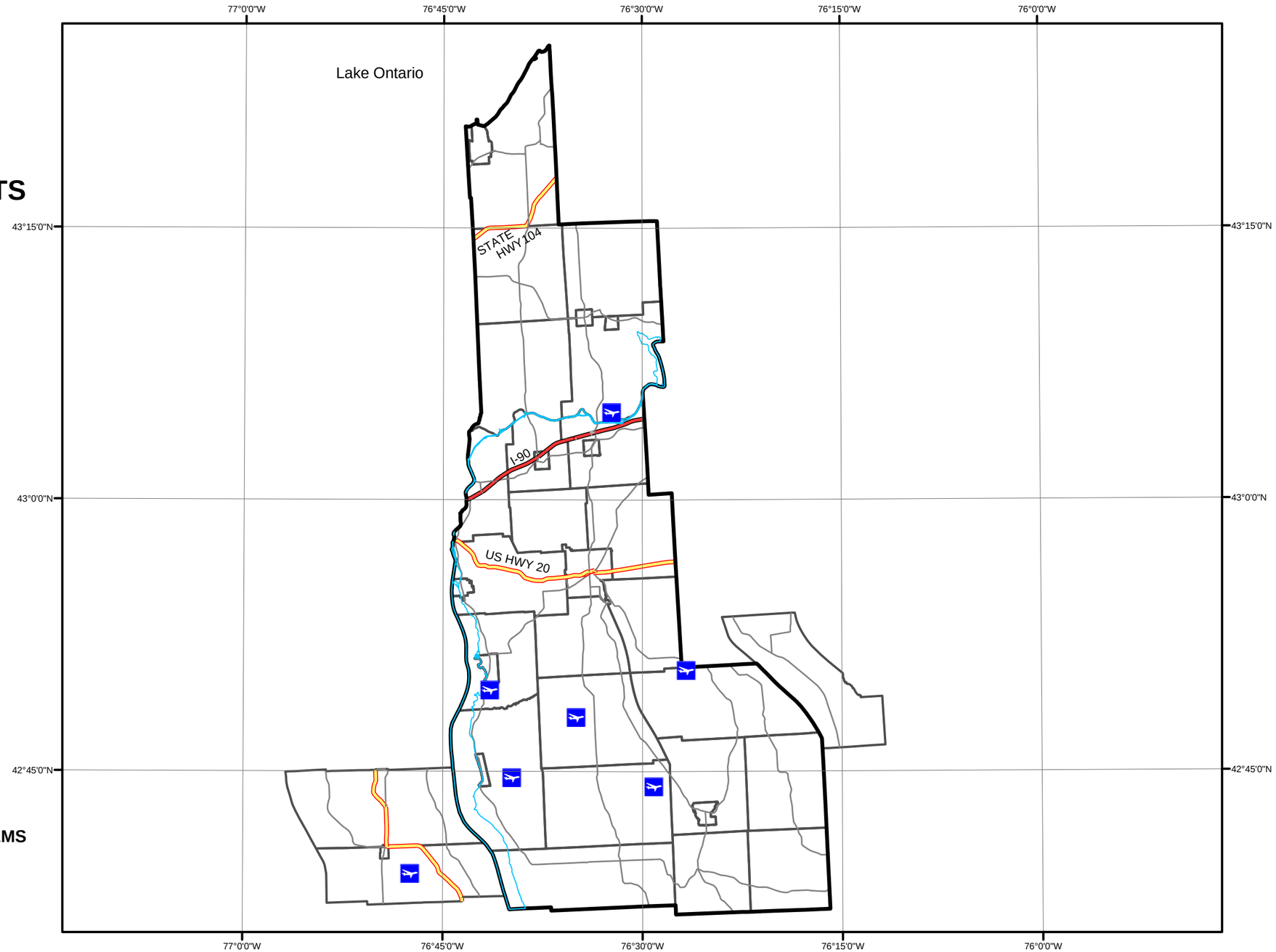
STUDY AREA
AGRICULTURAL DISTRICTS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix E, Figure 1

APPENDIX F

TRANSPORTATION RESOURCES

STUDY AREA
MAJOR ROADS, RAILS AND AIRPORTS



Legend

- Airports and Airfields
- New York State Canal System
- County Boundary
- Municipal Boundaries

Road Classification

- Limited Access Highways
- Highways
- Local Roads
- Ramps
- Railroads

NOTE: DATA OBTAINED FROM CAYUGA COUNTY AND NEW YORK STATE GEOGRAPHIC INFORMATION SYSTEMS CLEARINGHOUSE.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
MAJOR ROADS, RAILS AND AIRPORTS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182	DATE: 10/12/2010	FIGURE NO: Appendix F, Figure 1

APPENDIX F

Table 1 – Roadway Classifications

Roadways	Descriptions
Interstates	Generally, these are inter-regional high speed, high volume facilities with complete control of access.
Other Freeways	Local, intra-regional and inter-regional high speed, high volume roadways with controlled access.
Expressways	Divided highways for through traffic with full or partial access control and generally with grade separations at major crossroads.
Rural Arterials	These range from two-lane roadways to multilane, divided controlled access facilities. Generally, they are high speed, high volume roadways for travel between major points.
Urban Arterials	These carry large traffic volumes within and through urban areas. They vary from multilane, divided, controlled access facilities to two lane streets. They serve major areas of activity, carrying a high proportion of an area's traffic on a small proportion of the area's lane mileage.
Rural Collectors	These are two lane roadways connecting roadways of higher classification; they typically serve larger towns and smaller communities.
Urban Collectors	These streets link neighborhoods or areas of homogeneous land use with arterial streets. They serve the dual function of land access and traffic circulation.
Local Rural Roads	These are primarily town and county roads. Their primary purpose is access to the abutting property. They constitute a high proportion of the highway mileage but service a low proportion of the traffic volume.
Local Urban Streets	These are primarily village and city streets. Their primary purpose is access to abutting property.

APPENDIX G

LAND USE AND ZONING

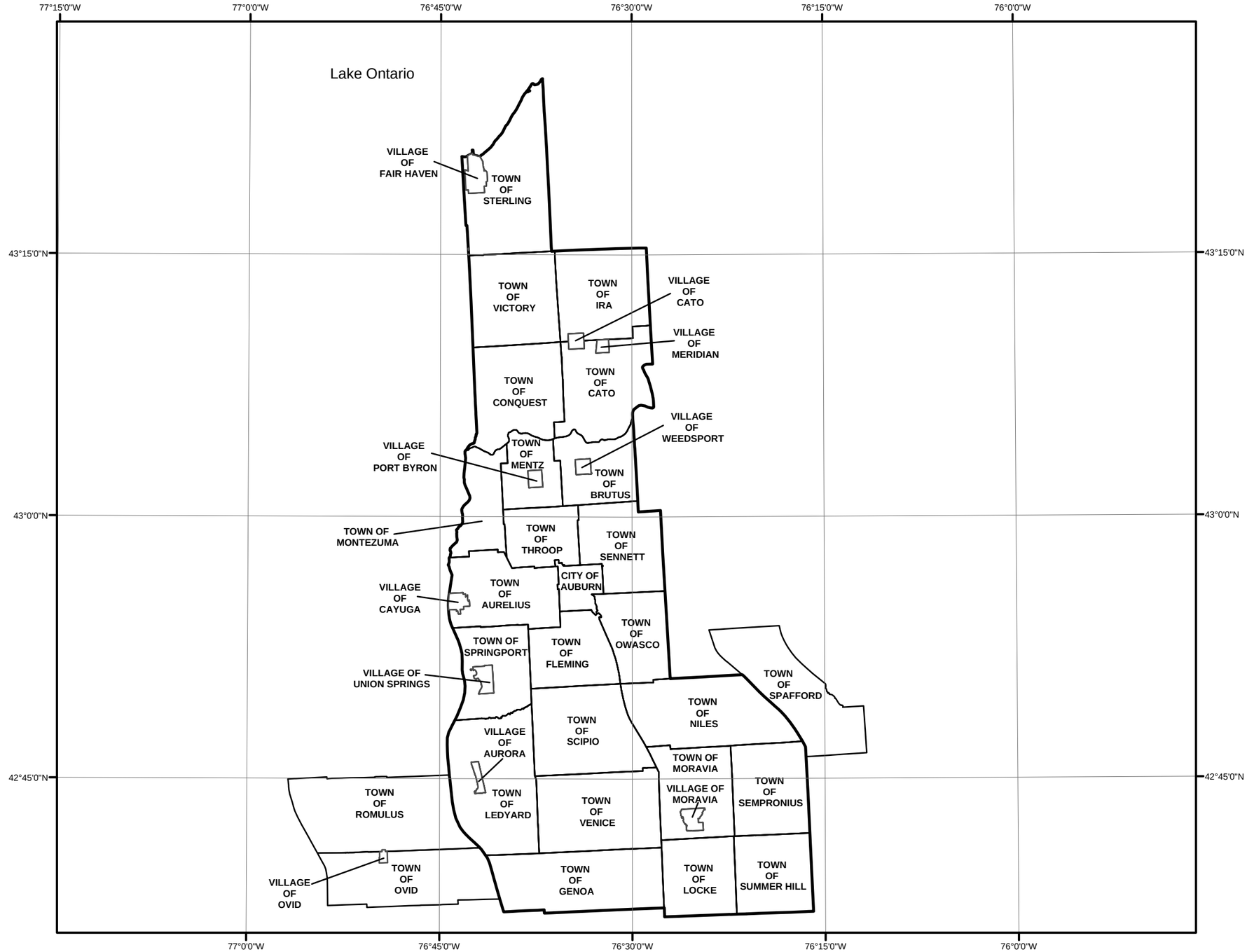
STUDY AREA
CITIES, TOWNS AND VILLAGES

Legend

County Boundary

Municipal Boundaries

NOTE: DATA OBTAINED FROM NEW YORK STATE GIS CLEARINGHOUSE.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

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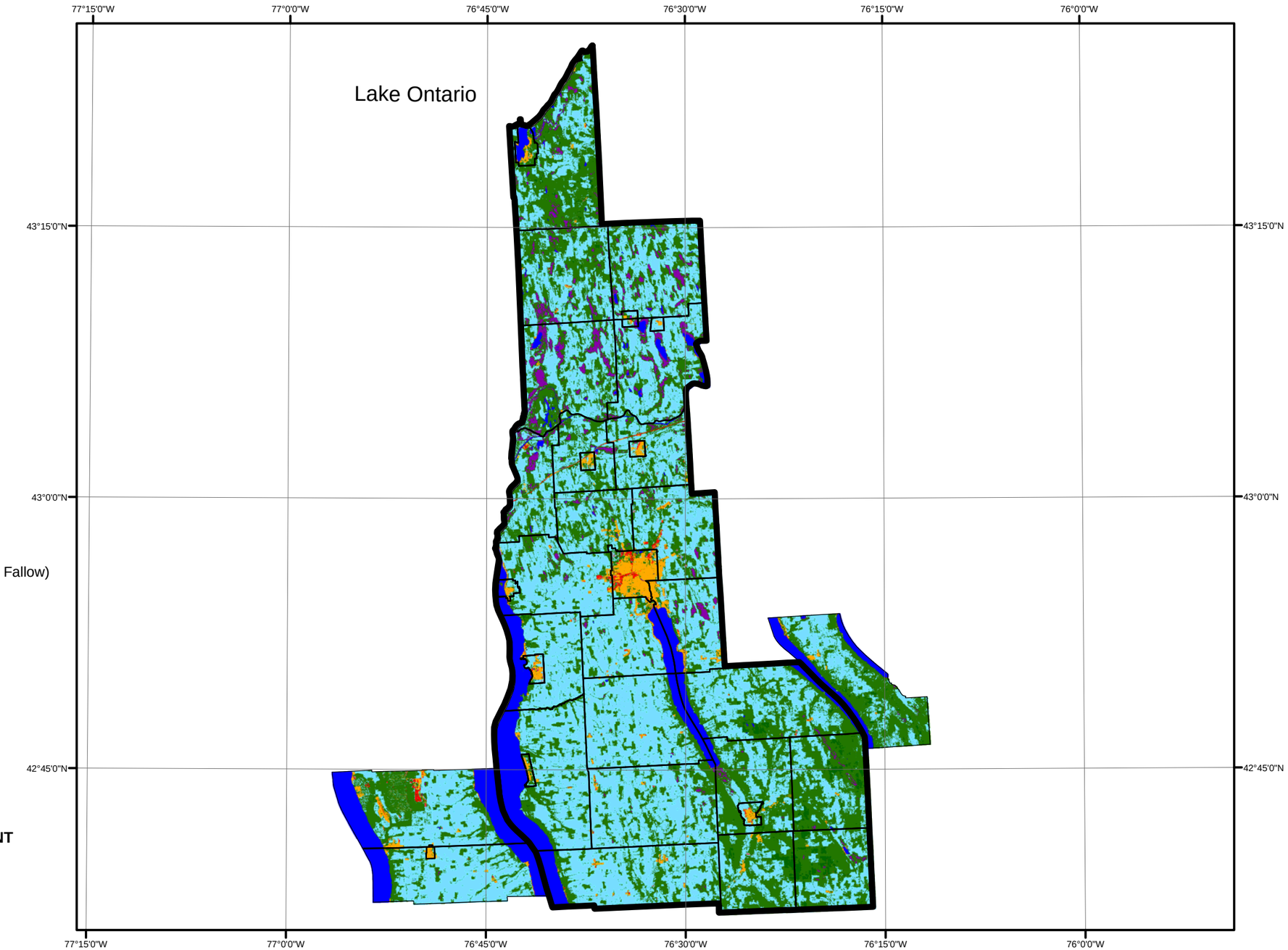
SPECTRA ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
CITIES, TOWNS AND VILLAGES
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix G, Figure 1

STUDY AREA
GENERALIZED LAND USE



Legend

Generalized Land Use

- Water
- Residential Development
- Commercial/Industrial Development
- Barren (Bare Rock, Sand, Clay, Quarries, Mines, Pits)
- Natural Forested Upland
- Shrubland/Herbaceous Upland
- Agriculture (Crops, Grains, Pasture, Vineyards, Orchards, Fallow)
- Wetlands
- Municipal Boundaries
- County Boundary

NOTE: DATA OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE GEOSPATIAL DATA GATEWAY .

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
GENERALIZED LAND USE
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix G, Figure 2

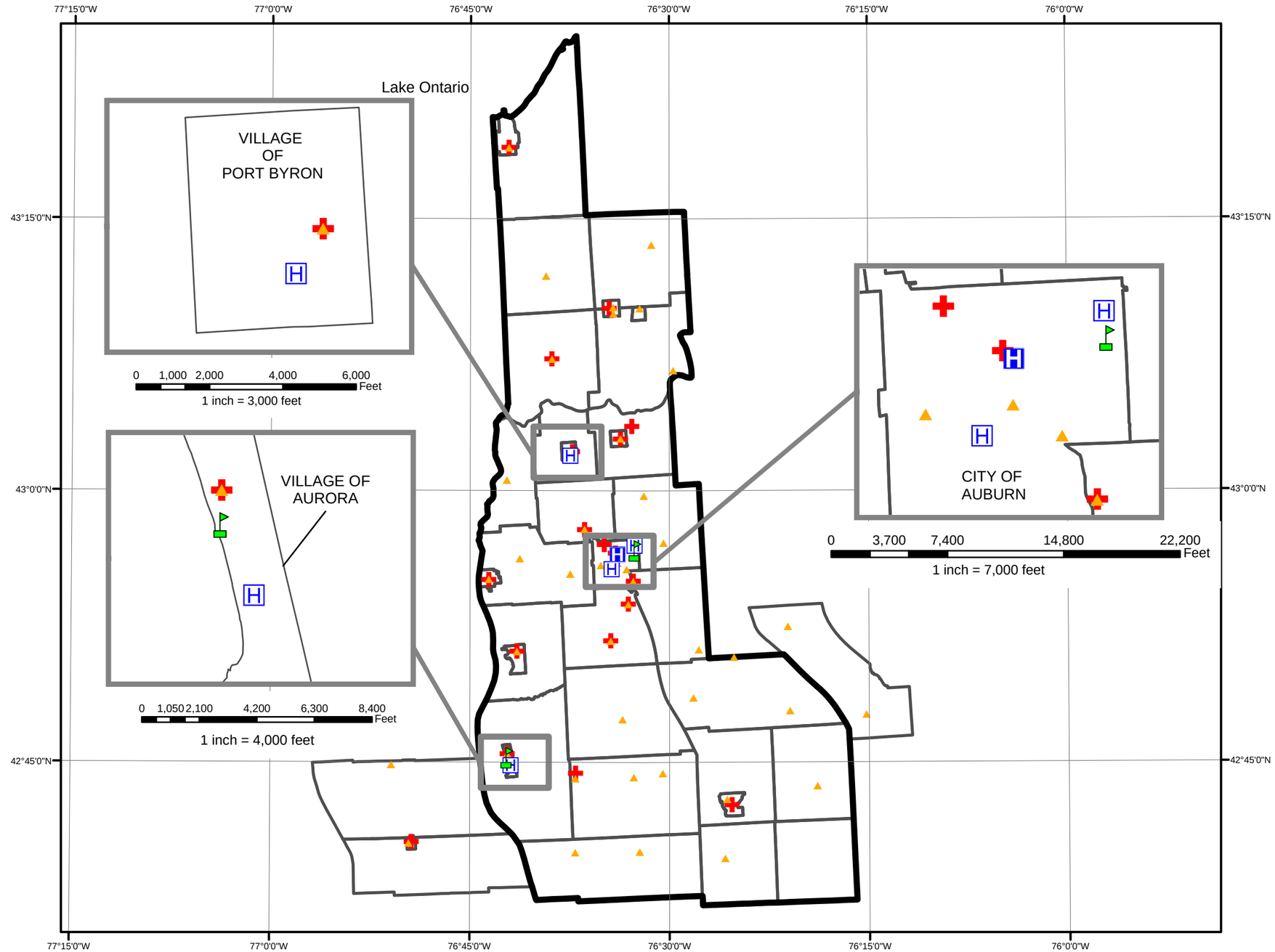
APPENDIX H

COMMUNITY SERVICES AND PUBLIC UTILITIES

STUDY AREA
COMMUNITY RESOURCES

Legend

- Colleges and Universities
- Hospitals
- Major Healthcare Centers
- Fire Stations
- Ambulance and Paramedic Services
- County Boundary
- Municipal Boundaries



NOTE: DATA OBTAINED FROM CAYUGA COUNTY AND ONLINE RESOURCES.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES
(UNLESS OTHERWISE NOTED)

N

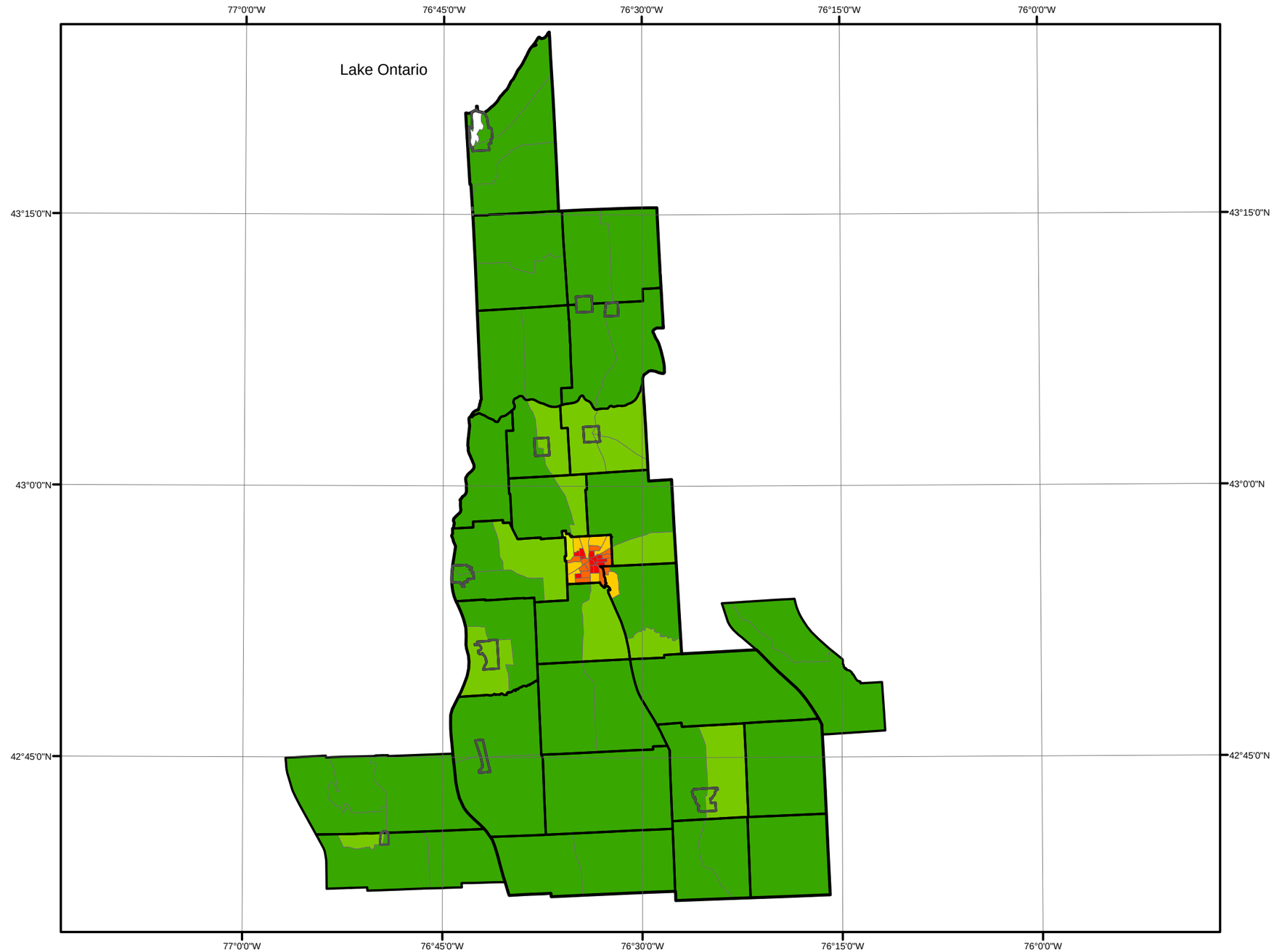
SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110	STUDY AREA COMMUNITY RESOURCES *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182 DATE: 10/12/2010	FIGURE NO: Appendix H, Figure 1

APPENDIX I

DEMOGRAPHY AND ENVIRONMENTAL JUSTICE

STUDY AREA
POPULATION DENSITY
PERSONS PER SQUARE MILE



Legend

County Boundary

2000 POPULATION DENSITY BY CENSUS TRACT

PERSONS PER SQUARE MILE

- <100
- 101 - 500
- 501 - 1000
- 1001 - 2500
- 2501 - 5000
- >5000

NOTE: DATA OBTAINED FROM CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
POPULATION DENSITY
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix I, Figure 1

STUDY AREA
POTENTIAL
ENVIRONMENTAL JUSTICE AREAS

Legend

Poverty

- Poverty >23.59%

Potential Environmental Justice Areas

- Rural Minority >33.8%
- Urban Minority >51.1%

- Municipal Boundaries
- County Boundary

NOTE: DATA OBTAINED FROM CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA
POTENTIAL ENVIRONMENTAL JUSTICE AREAS
CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT
CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix I, Figure 2

Appendix I

Table 1. Study Area Population Changes

Auburn, City – 8.6% Decrease	Sennet, Town – 11.3% Increase
Aurelius, Town – 0.7% Increase	Springport, Town – 2.6% Increase
Brutus, Town – 4.7% Decrease	Sterling, Town – 4.5% Increase
Cato, Town – 11.9% Increase	Summerhill, Town – 7.9% Increase
Conquest, Town – 3.6% Increase	Throop, Town – 1.8% Increase
Fleming, Town – 0.1% Increase	Venice, Town – 2.2% Decrease
Genoa, Town – 2.5% Increase	Victory, Town – 19.7% Increase
Ira, Town – 21.9% Increase	Aurora, Village – 4.8% Increase
Ledyard, Town – 5.5% Increase	Cato, Village – 3.4% Increase
Locke, Town – 0.8% Decrease	Cayuga, Village – 8.4% Decrease
Mentz, Town – 0.2% Decrease	Fair Haven, Village – 1.2% Decrease
Montezuma, Town – 11.8% Increase	Meridian, Village – 0.2% Decrease
Moravia, Town – 4.4% Increase	Moravia, Village – 12.6% Decrease
Niles, Town – 1.2% Increase	Port Byron, Village – 4.5% Decrease
Owasco, Town – 7.6% Increase	Union Springs, Village – 5.9% Decrease
Scipio, Town – 1.3% Increase	Victory, Village – 6.3% Decrease
Sempronius, Town – 11.3% Increase	Weedsport, Village – 1.0% Increase
Romulus, Town – 19.5%Decrease	Ovid, Town – 19.5% Increase
Spafford, Town – 0.8% Decrease	Ovid, Village – 7.2% Decrease

Source: US Census Data from 1990 and 2000

Notes: Blue shading denotes a population decrease.
Yellow shading denotes a population increase.

APPENDIX J

VISUAL RESOURCES

STUDY AREA
SCENIC AND RECREATION AREAS

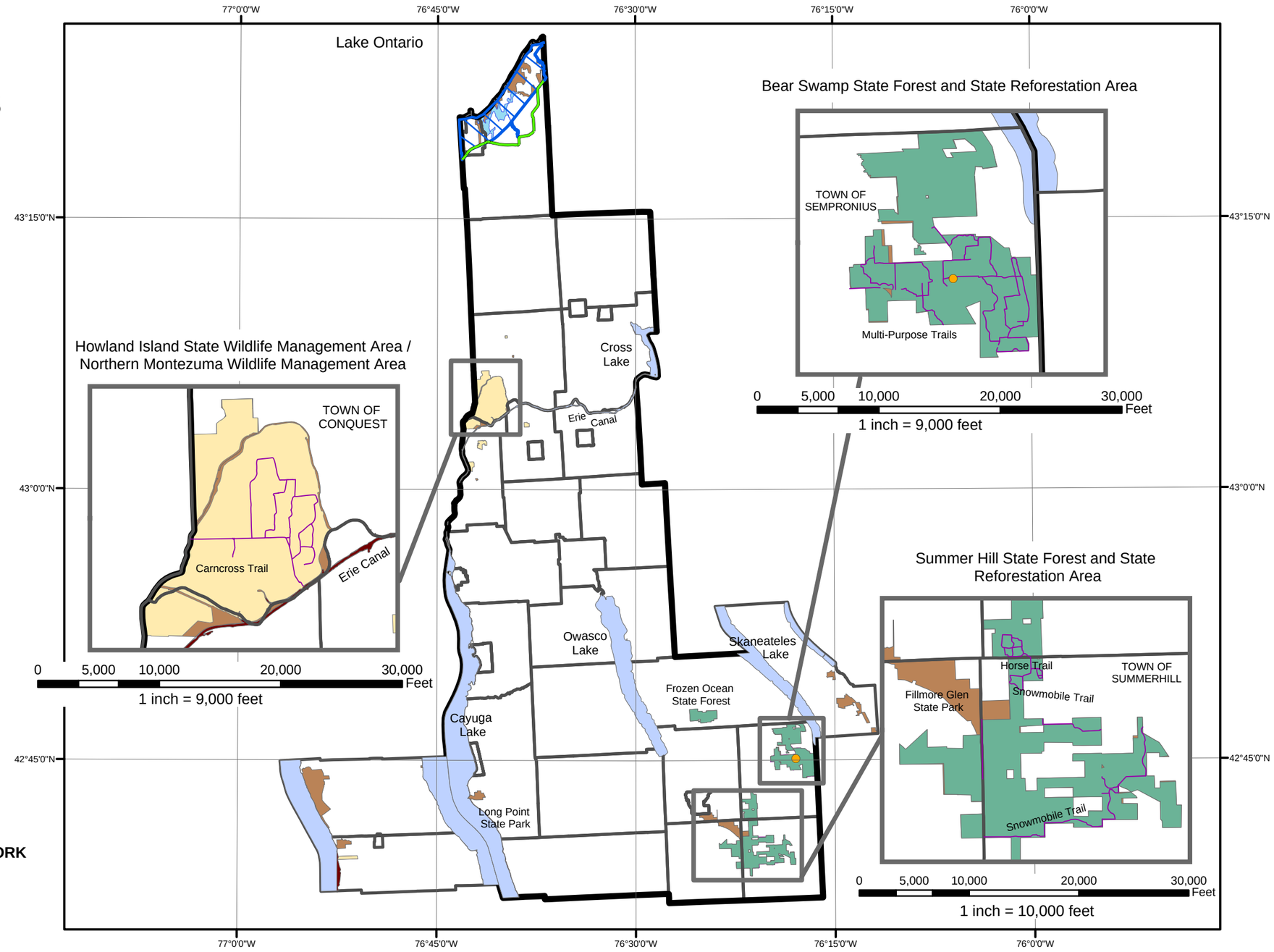
Legend

- County Boundary
- Municipal Boundaries
- New York State Coastal Boundaries
- Critical Bird Areas
  - Bear Swamp Critical Bird Area
- Parks and Recreation Areas
- New York State Canal System
- Great Lakes Seaway Trail
- Significant Coastal Fish & Wildlife Habitats
  - Sterling Creek and Wetlands
- Lakes

DEC Lands

- Fishing Access
- State Forest
- Waterway Access
- Wildlife Management Area
- DEC Roads and Trails

NOTE: DATA OBTAINED FROM CAYUGA COUNTY AND NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES
(UNLESS OTHERWISE NOTED)

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110	STUDY AREA SCENIC AND RECREATION AREAS (1 OF 2) *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182 DATE: 10/12/2010	FIGURE NO: Appendix J, Figure 1A

STUDY AREA
SCENIC AND RECREATION AREAS

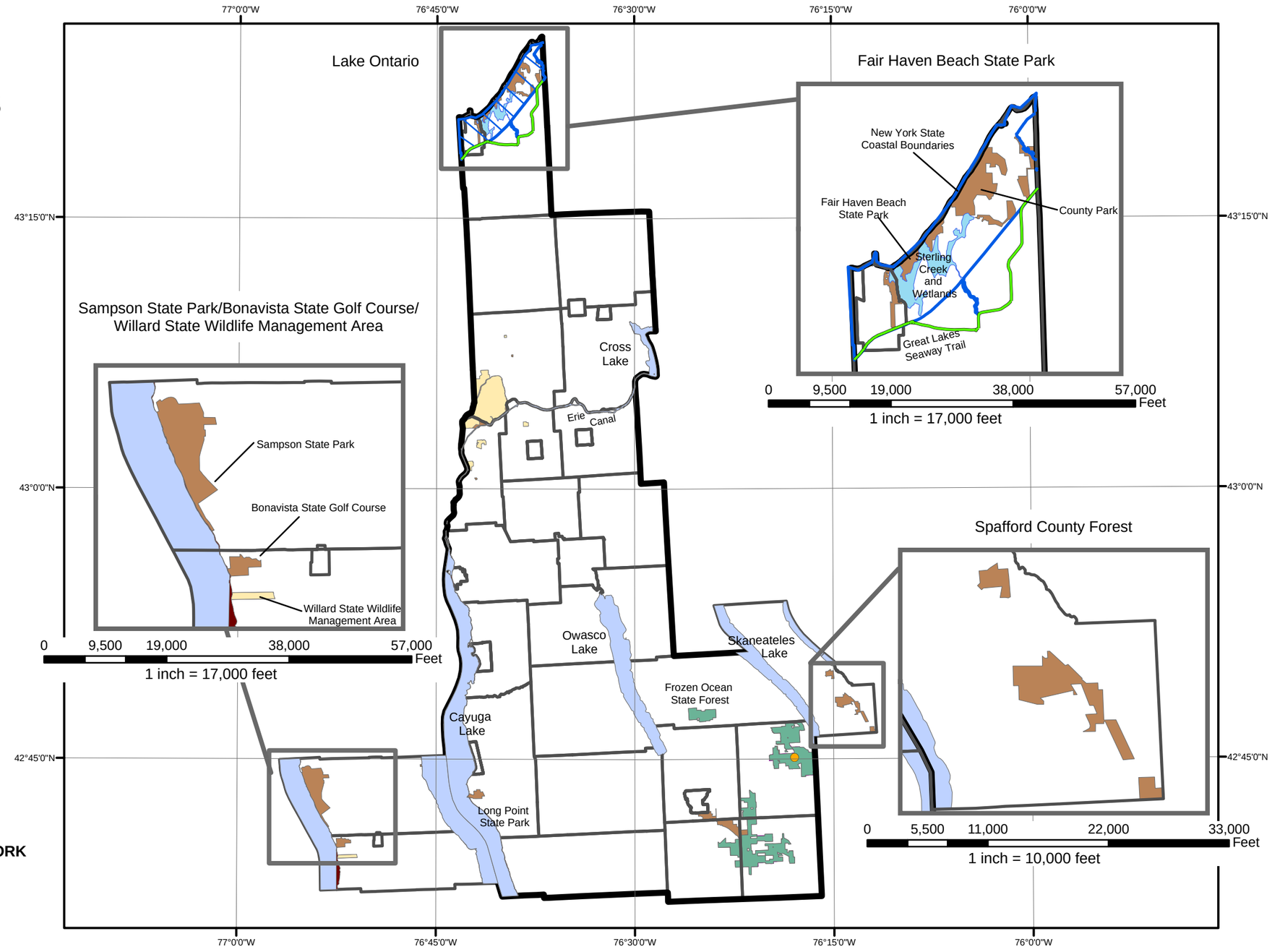
Legend

- County Boundary
- Municipal Boundaries
- New York State Coastal Boundaries
- Critical Bird Areas
  - Bear Swamp Critical Bird Area
- Parks and Recreation Areas
- New York State Canal System
- Great Lakes Seaway Trail
- Significant Coastal Fish & Wildlife Habitats
  - Sterling Creek and Wetlands
- Lakes

DEC Lands

- Fishing Access
- State Forest
- Waterway Access
- Wildlife Management Area
- DEC Roads and Trails

NOTE: DATA OBTAINED FROM CAYUGA COUNTY AND NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.



0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES
(UNLESS OTHERWISE NOTED)

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110	STUDY AREA SCENIC AND RECREATION AREAS (2 OF2) *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182 DATE: 10/12/2010	FIGURE NO: Appendix J, Figure 1B

APPENDIX K

NOISE

APPENDIX K

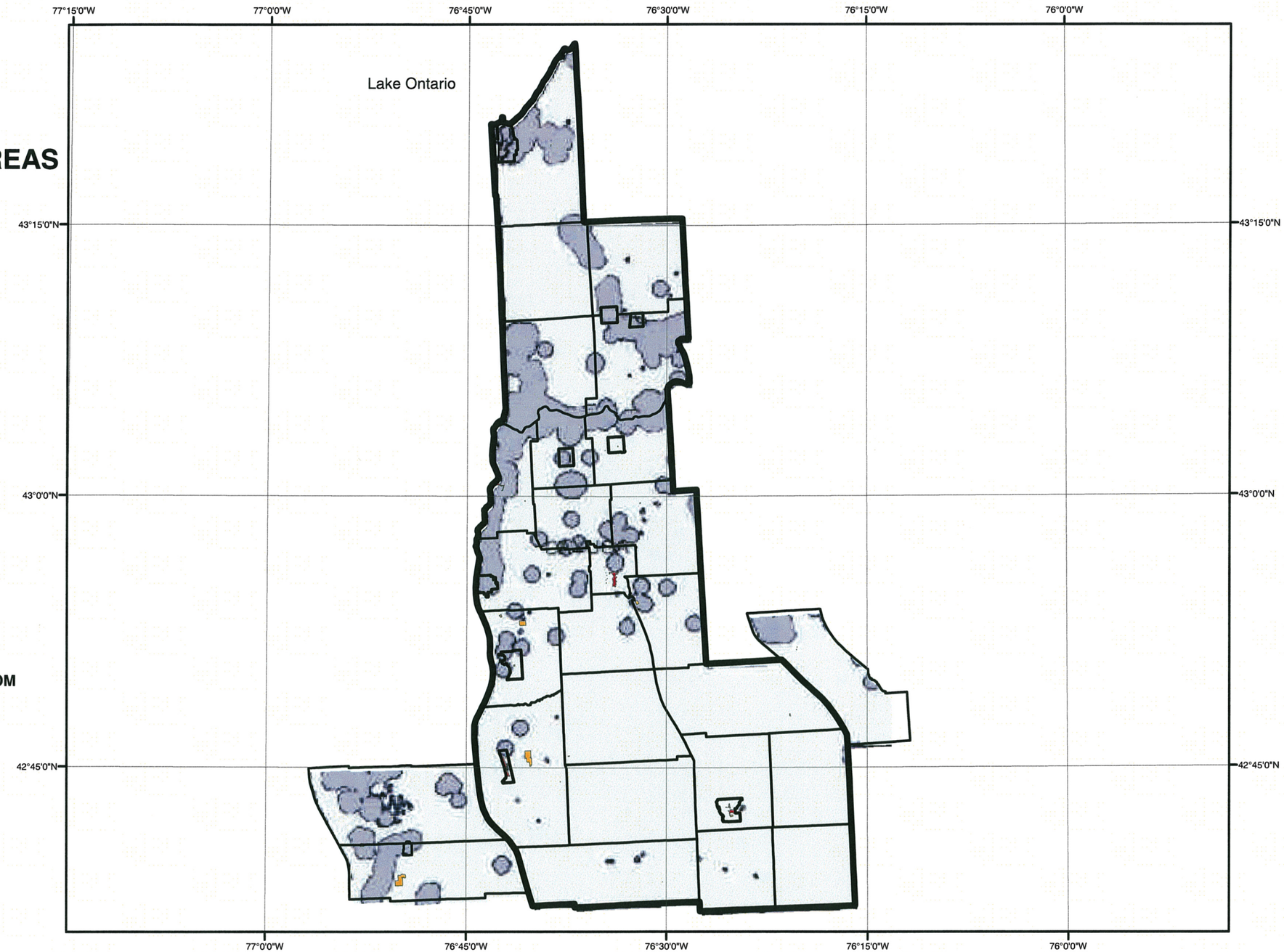
Table 1 - Land Use Types and Typical Noise Levels

dBA	Receptor Location	Land Use Type
90	Apartment next to freeway	Major Metro
85	¾ Mile from touchdown at major airport	
80	Downtown with some construction activity	
75	Urban high density apartment	
70	Urban row housing on major avenue	Minor Metro
65		
60	Old Urban residential area	
55		
50	Wooded Residential	Town Village
45	Agricultural Cropland	
40	Rural Residential	Rural
35	Wilderness	

APPENDIX L

HISTORICAL AND ARCHEOLOGICAL RESOURCES

STUDY AREA
ARCHAEOLOGICALLY SENSITIVE AREAS
AND
HISTORIC PLACES



Legend

- County Boundary
- National Register of Historic Places
- Historic Districts
- Archaeologically Sensitive Areas

NOTE: HISTORIC DATA OBTAINED FROM NEW YORK STATE GIS CLEARINGHOUSE AND ARCHAEOLOGICAL DATA OBTAINED FROM NEW YORK STATE HISTORIC PRESERVATION OFFICE.

0 3.5 7 14 21 28 Miles

1 INCH = 7 MILES

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA
ENVIRONMENTAL GROUP, INC.
19 BRITISH AMERICAN BOULEVARD
LATHAM, NEW YORK 12110

STUDY AREA- ARCHAELOGICALLY SENSITIVE AREAS AND HISTORIC PLACES

CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT

CAYUGA COUNTY NEW YORK

PROJECT NO: 10182 | DATE: 10/12/2010 | FIGURE NO: Appendix L, Figure 1

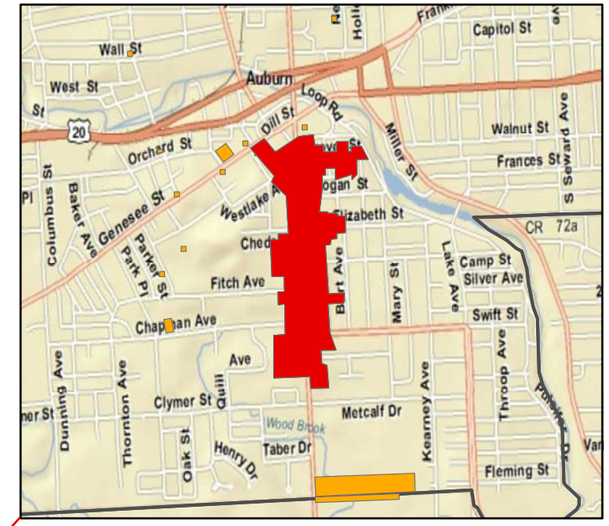
STUDY AREA
HISTORICAL PLACES AND DISTRICTS

Legend

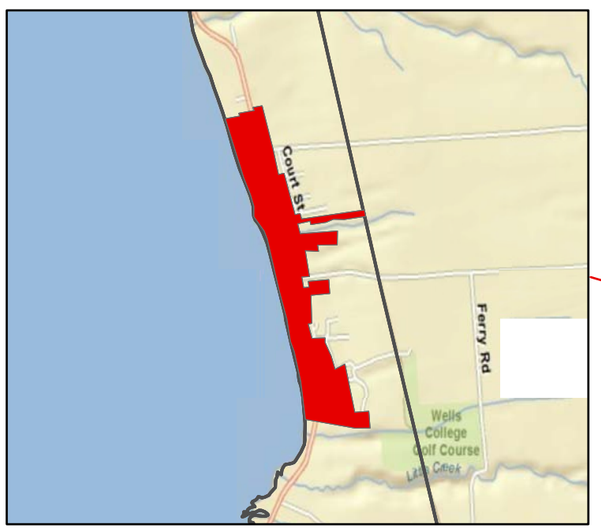
- Historic Districts
- National Register of Historic Places
- County Boundary
- Municipal Boundaries

NOTE: DATA OBTAINED FROM NEW YORK STATE GIS CLEARINGHOUSE

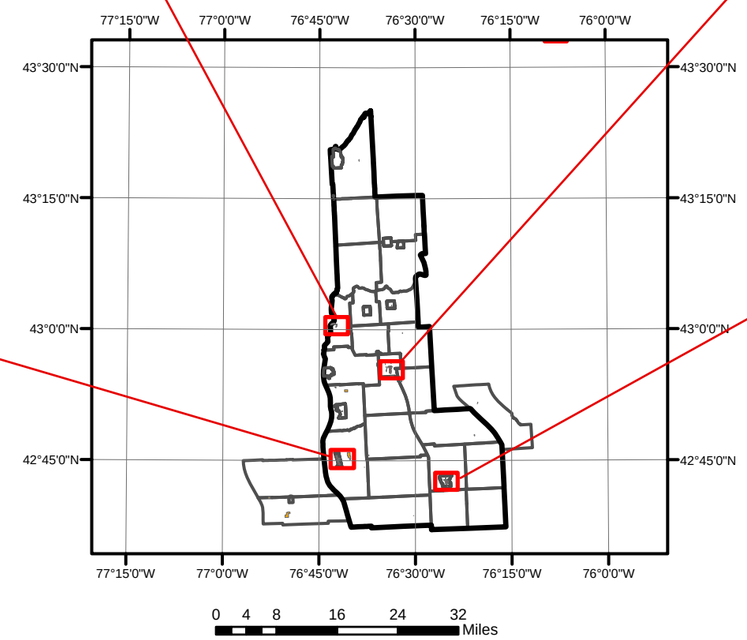
TOWN OF MONTEZUMA -
SENECA RIVER CROSSING CANALS
HISTORIC DISTRICT



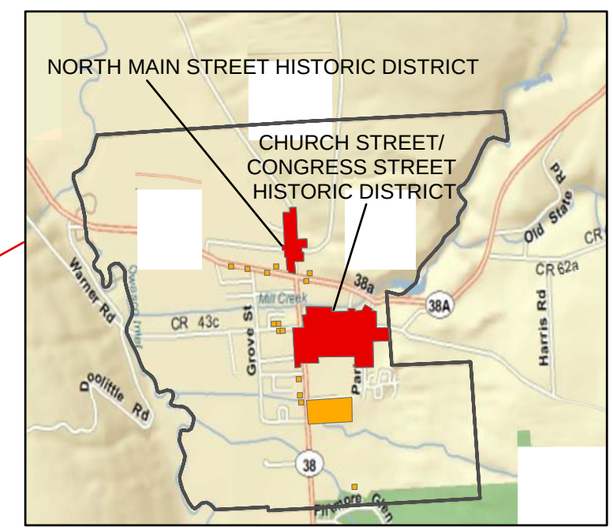
CITY OF AUBURN - SOUTH STREET AREA HISTORIC DISTRICT
SOUTH STREET AND ADJACENT PROPERTIES



VILLAGE OF AURORA - AURORA VILLAGE/ WELLS COLLEGE HISTORIC DISTRICT
NY ROUTE 90



1 INCH = 20 MILES



VILLAGE OF MORAVIA - NORTH MAIN STREET HISTORIC DISTRICT
NORTH MAIN STREET AND KEELER AVENUE

VILLAGE OF MORAVIA - CHURCH STREET/CONGRESS STREET HISTORIC DISTRICT
CHURCH AND CONGRESS STREETS

0 900 1,800 3,600 5,400 7,200
Feet

1 INCH = 3,000 FEET
(UNLESS OTHERWISE NOTED)

N

SEAL OF CAYUGA COUNTY NEW YORK

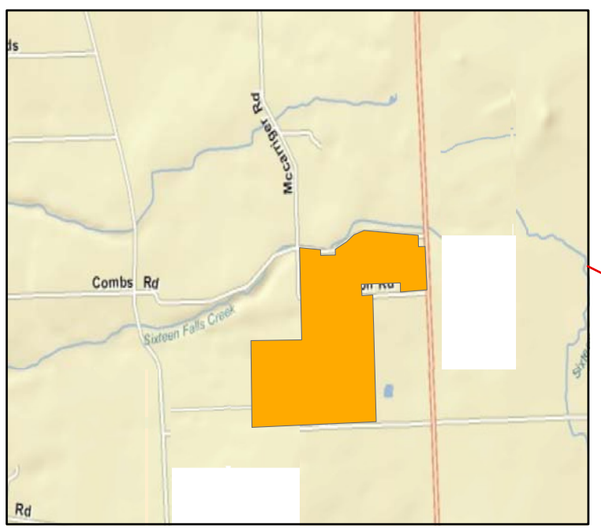
SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110	STUDY AREA HISTORICAL PLACES AND DISTRICTS *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182 DATE: 10/12/2010	FIGURE NO: Appendix L, Figure 2A

STUDY AREA
HISTORICAL PLACES AND DISTRICTS

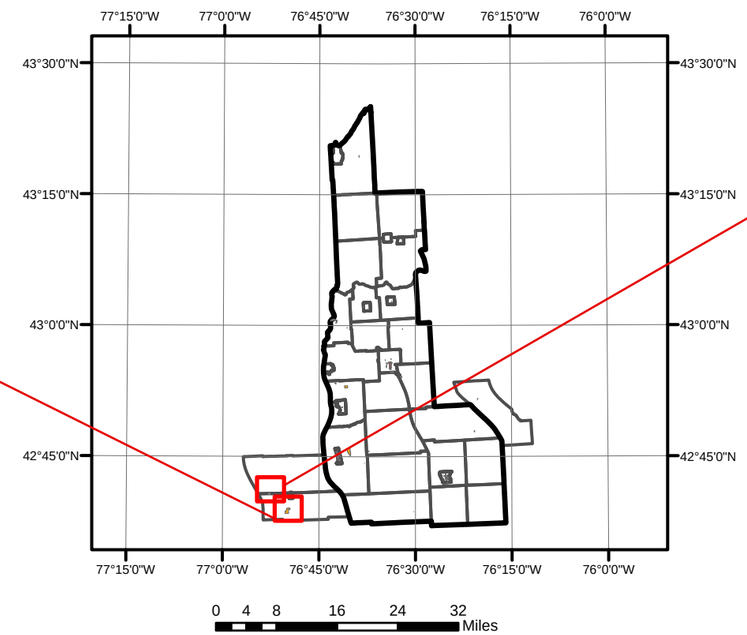
Legend

- Historic Districts
- National Register of Historic Places
- County Boundary
- Municipal Boundaries

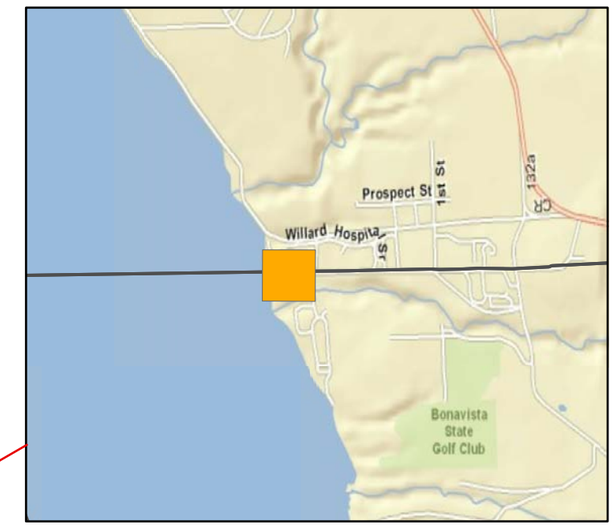
NOTE: DATA OBTAINED FROM NEW YORK STATE GIS CLEARINGHOUSE



AARON WILSON HOUSE
2037 WILSON ROAD



1 INCH = 20 MILES



WILLARD ASYLUM FOR THE CHRONIC INSANE
WILLARD STATE HOSPITAL, OVID, NY

1 INCH = 3,000 FEET
(UNLESS OTHERWISE NOTED)

N

SEAL OF CAYUGA COUNTY NEW YORK

SPECTRA ENVIRONMENTAL GROUP, INC. 19 BRITISH AMERICAN BOULEVARD LATHAM, NEW YORK 12110		STUDY AREA HISTORICAL PLACES AND DISTRICTS *CAYUGA COUNTY EMERGENCY COMMUNICATIONS PROJECT* CAYUGA COUNTY NEW YORK
PROJECT NO: 10182	DATE: 10/12/2010	FIGURE NO: Appendix L, Figure 2B

Study Area
National Register of Historic Places

NATIONAL REGISTER (NR)	NR IDENTIFICATION NUMBER	ADDRESS	MUNICIPALITY
Seneca County Courthouse Complex at Ovid	90NR02221	NY 414	Ovid
East Genoa Methodist Episcopal Church	01NR01824	558 E. Genoa Rd	Genoa
St. Peter's Episcopal Church Complex	01NR01826	169 Genessee St.	Auburn
Sterling Grist Mill Complex	01NR01829	1332 NY 104A	Sterling
First Baptist Church of Weedsport	02NR05005	Liberty St.	Weedsport
Mosher Farmstead	03NR05113	1016 Sherwood Rd	Ledyard
Yawger, Peter, House	03NR05172	NY 90	Springport
Mentz Church	04NR05253	Mentz Church Rd at McDonald	Montezuma
Durkee, Almeron, House	04NR05329	13 Cayuga St	Union Springs
Howland, Charles-William H. Chase House	04NR05330	188 Cayuga St.	Union Springs
Richardson, William, House	04NR05331	5494 Cross Road	Springport
Ingham, William Smith, House	04NR05346	3069 W Main St	Meridian
New Hope Mills Complex	04NR05400	Glen Haven Rd. & NY41A	New Hope
Sennett Federated Church and Parsonage	05NR05476	777 Weedsport-Sennett Rd	Sennett
Belt-Gaskin House	05NR05478	77 Chapman Ave	Auburn
Howland, Slocum and Hannah, House	05NR05509	1781 Sherwood Rd	Scipio
Hosmer, William, House	05NR05531	22 Washington St.	Auburn
Auburn Button Works and Logan Silk Mills	07NR05739	9-11 Logan St	Auburn
Burritt, Orrin W., House	07NR05740	2696 Van Bureb St	Weedsport
Sherwood Equal Rights Historic District	07NR05805	Sherwood Rd. & NY 34B	Scipio
Case Memorial-Seymour Library	90NR00101	176 Genesee St	Auburn
Harriet Tubman Home for the Aged	90NR00102	180 &182 South St. & 33 Parker	Auburn
Otis, Job and Deborah, House	08NR05843	1882-1886 Sherwood Rd	Scipio

NATIONAL REGISTER (NR)	NR IDENTIFICATION NUMBER	ADDRESS	MUNICIPALITY
Howland, Augustus, House	08NR05844	1395 Sherwood Rd	Ledyard
Seward, William H., House	90NR00103	33 South St.	Auburn
Aurora Steam Grist Mill	90NR00104	Main St	Aurora
Aurora Village-Wells College Historic District	90NR00105	NY 90	Aurora
Lakeside Park	90NR02887	NY 38 A at Owasco Lake	Owasco
Willard Memorial Chapel	90NR02888	17-19 Nelson St.	Auburn
Willard, Dr. Sylvester, Mansion	90NR03285	203 W Geness St	Auburn
South Street Area Historic District	90NR03293	South St. to Lincoln St.	Auburn
Cayuga County Courthouse	91NR00008	152-154 Genesee St.	Auburn
United States Post Office (Former)	91NR00009	151-157 Genesee St.	Auburn
Church Street-Congress Street Historic District	92NR00357	S. Main , Church, Park & Congress Sts.	Moravia
North Main Street Historic District	92NR00358	N. Main St & Keeler Ave	Moravia
Howland Cobblestone Store	94NR00534	N.side Sherwood Rd, E of jct. Woth	Scipio
Schine's Auburn Theatre	94NR00741	12-14 south St.	Auburn
McGeer, John, House	95NR00787	7 Aurora St	Moravia
Aurora Street, House at 17	95NR00788	17 Aurora St.	Moravia
Aurora Street, House at 18	95NR00789	18 Aurora St.	Moravia
Aurora Street, House at 20	95NR00790	20 Aurora St.	Moravia
Allen, Henry, House	95NR00791	12 E. Cayuga St	Moravia
Sager House	95NR00792	12 W. Cayuga St.	Moravia
West Cayuga Street, House at 21	95NR00793	21 W. Cayuga St.	Moravia
West Cayuga Street, House at 31	95NR00794	31 W. Cayuga St.	Moravia
West Cayuga Street, House at 37	95NR00795	37 W. Cayuga St.	Moravia
South Main Street, House at 36	95NR00796	36 S. Main St	Moravia
South Main Street, House at 46	95NR00797	46 S. Main St	Moravia
Tuthill-Green House	95NR00798	52 S Main St	Moravia

NATIONAL REGISTER (NR)	NR IDENTIFICATION NUMBER	ADDRESS	MUNICIPALITY
Morse Farm	95NR00799	53 S. Main St	Moravia
Sterling District No. 5 School House	95NR00818	NY 104A	Sterling
Moravia Union Cemetery	95NR00879	NY 38	Moravia
Erie Canal Lock 52 Complex	98NR01363	Maiden Ln	Port Byron
Tubman, Harriet, Residence	98NR01420	182 South St.	Auburn
Thompson AME Zion Church	98NR01422	33 Parker St.	Auburn
Tubman, Harriet, Grave Site	98NR01423	Fort Hill Cemetery	Auburn
Wall Street Methodist Episcopal Church	98NR01424	69 Wall St.	Auburn
Centreport Aqueduct	99NR01571	2462 NY 31	Brutus
Wilson, Aaron House	10NR01757	2037 Wilson Rd	Ovid
Kinne, David, House	06NR05661	6858 Kinne Rd.	Ovid
Seneca River Crossing Canals Historic District	05NR05442		Montezuma
East Cayuga St. Bldg at 15	95NR00813	15 East Cayuga St.	Moravia
Owasco Reformed Church	10NR06092	5105 NY 38A	Owasco
Hutchinson Homestead	09NR05996	6080 Lake St	Cayuga
Sand Beach Church	90NR00098	S of Auburn on NY 38	Fleming
Wood, Jethro, House	90NR00099	NY 34B	Ledyard

APPENDIX M

PUBLIC HEALTH AND SAFETY

Reference: **Potential EMF Health Impacts from Radio and Microwave Transmitters in New York's Statewide Network for Emergency Communication, RAM TRAC Corporation, June 2004**

Reference: **Evaluation of Potential Uncontrolled Exposure to Microwave Frequency Electromagnetic Fields Generated by the Planned Oswego County, New York Emergency Telecommunications Network, RAM TRAC Corporation, April 2010 ("Project EMF Study")**