



Sources of Geospatial Data for Central and Western New York - 1998

Prepared in cooperation with the Water Resources Board of the Finger Lakes -
Lake Ontario Watershed Protection Alliance

U.S. Geological Survey
Open-File Report 99-191

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By Stephen C. Komor

U.S. GEOLOGICAL SURVEY

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Ithaca, New York
1999

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CONVERSION FACTORS

| Multiply | By | To Obtain |
|--------------------------------|-----------|------------------|
| <i>Length</i> | | |
| foot (ft) | 0.3048 | meter |
| mile (mi) | 1.609 | kilometer |
| <i>Area</i> | | |
| square mile (mi ²) | 2.590 | square kilometer |

Sources of Geospatial Data for Central and Western New York

by Stephen C. Komor

ABSTRACT

The Finger Lakes-Lake Ontario Watershed Protection Alliance (FL-LOWPA), a coalition of 24 counties in central and western New York, wishes to develop a geographic information system (GIS) for mapping and managing hydrologic data in the region. A first step in developing a GIS is identifying sources of geospatial data in the area. (Geospatial data are hydrologic and other types of data that have a known position on the earth's surface). County agencies involved in water-resource management in the FL-LOWPA counties were surveyed to identify relevant sources of geospatial information. New York State and Federal data sources were identified by a search of the World Wide Web and follow-up telephone inquiries. This report contains a compilation of geospatial data from County, State and Federal data sources.

INTRODUCTION

The Finger Lakes-Lake Ontario Watershed Protection Alliance (FL-LOWPA) is a coalition of 24 counties in central and western New York (fig. 1) whose mission is to work together to protect watersheds (fig. 2) and maintain good water quality. The governing body of the FL-LOWPA is the Water Resources Board of the Finger Lakes Association, which is headquartered in Penn Yan, New York.

In 1998, the U.S. Geological Survey (USGS), in cooperation with the Water Resources Board, compiled available geospatial information about the region from County, State and Federal sources. The results (Tables 1-3) represent a first step toward building a regional, computerized water-resources

database and geographic information system (GIS). This information can promote exchange of data among counties, help avoid duplication of efforts to scan and digitize paper maps, and speed development of GIS databases that provide detailed coverages.

Purpose and Scope

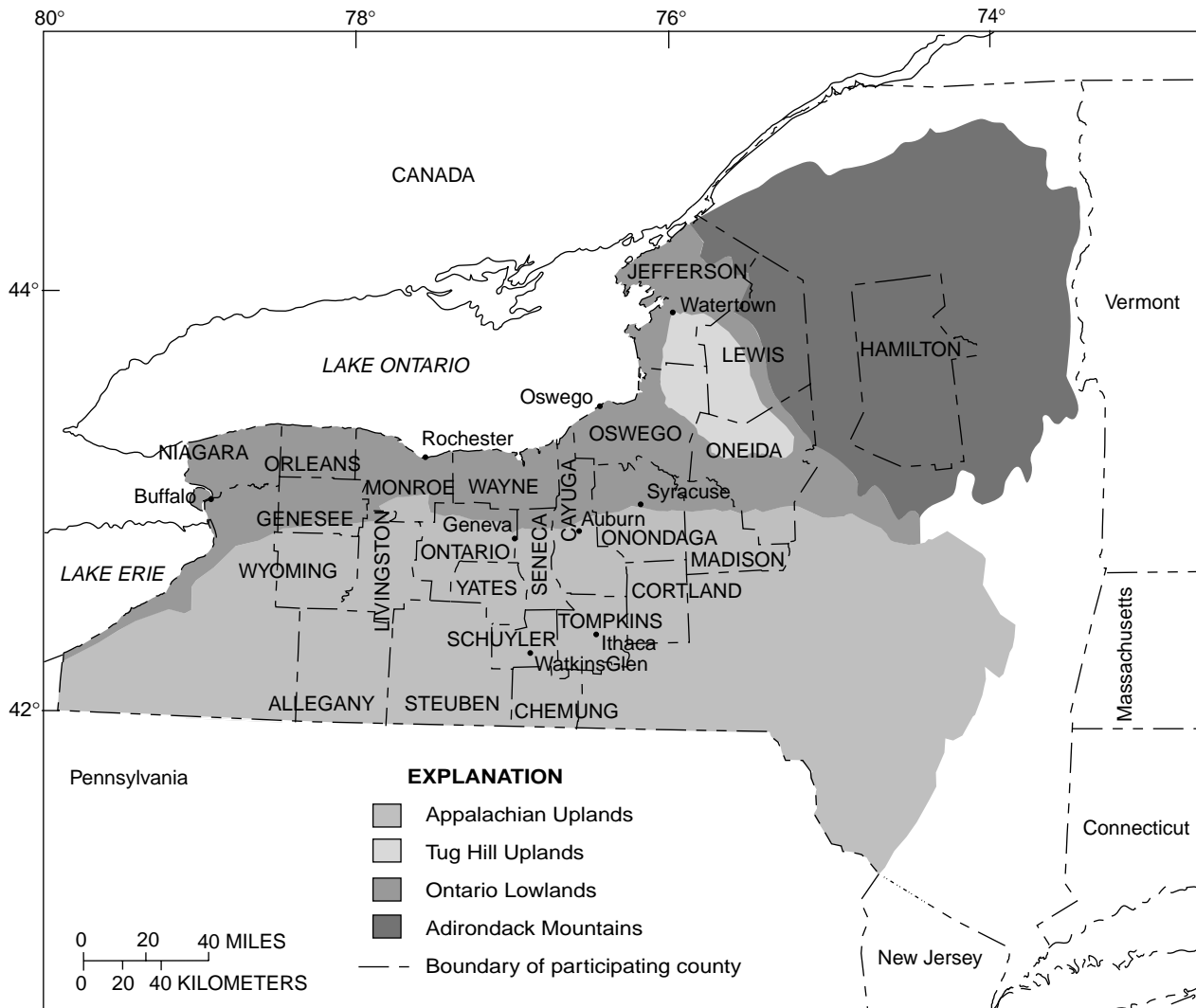
This report (1) describes the applications of GIS in watershed management and the methods of data compilation, and (2) presents the types of data available for each county (Table 1), the sources and scales of data in 16 categories, by county (Table 2), and a list and description of more than 50 State and Federal databases (Table 3).

Acknowledgments

Funding for this project was provided, in part, by the New York State Legislature.

PHYSICAL SETTING AND REGIONAL CONCERNS

The FL-LOWPA counties cover all or parts of 27 major drainage basins in central and western New York State (fig. 2). Prominent water features in the area include: the New York State (NYS) Barge Canal; the Black, Genesee, and Oswego Rivers; the southern Lake Ontario shoreline; 11 Finger Lakes (from west to east, Conesus, Hemlock, Canadice, Honeoye, Canandaigua, Keuka, Seneca, Cayuga, Owasco, Skaneateles, and Otisco); and Oneida and Onondaga Lakes (fig. 3). This region of over 8,000 mi² includes 4 physiographic provinces (Isachsen and others, 1991) the Appalachian Uplands, the Ontario Lowlands, the Tug Hill Uplands, and the Adirondack Mountains



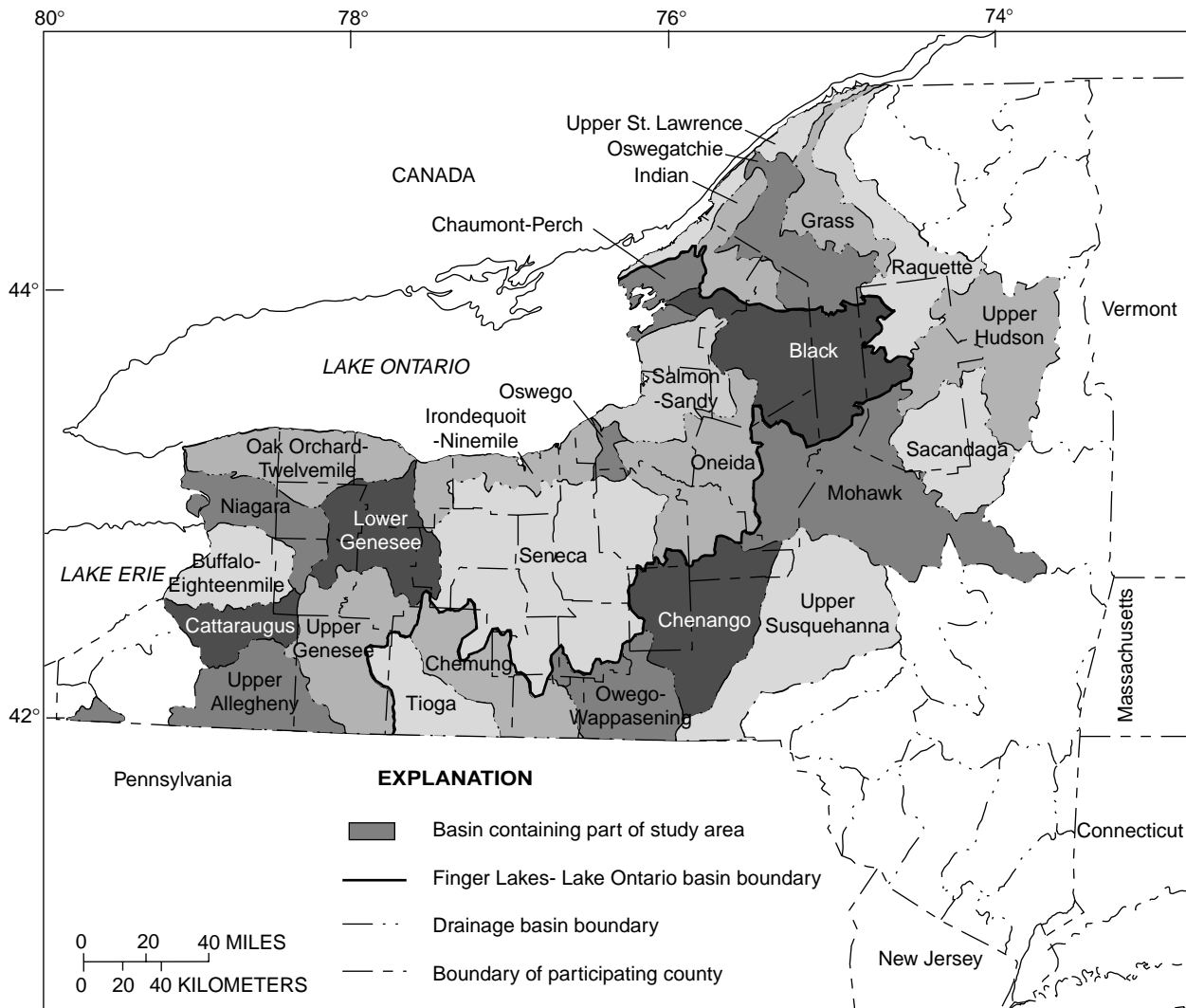
Base from U.S. Geological Survey digital data, 1:2,000,000

Figure 1. Locations of the 24 FL-LOWPA (Finger Lakes-Lake Ontario Watershed Protection Alliance) counties in central and western New York, and corresponding physiographic provinces.

(fig. 1). The Appalachian Uplands province includes the Finger Lakes Region and has steep to rolling glacial topography. Land use is predominantly agricultural, and regional population centers include the Towns of Auburn, Geneva, Ithaca, and Watkins Glen. The Ontario Lowlands province, which extends from Buffalo on the west to Watertown on the east, has low relief and productive farmlands; major cities include Oswego and Rochester on the Lake Ontario shoreline. The City of Syracuse lies on the border between the Appalachian Uplands and the Ontario Lowlands. The Tug Hill Uplands province is at the eastern end of the Ontario Lowlands and is characterized by steep terrain and rural communities. The Adirondack Mountains are

a roughly circular province of metamorphic rocks with long, straight valleys, gently curved ridges, and a radial drainage pattern (Isachsen and others, 1991).

Streamflow and lake levels in much of central and western New York are regulated by the Barge Canal. Canal flow policies affect seasonal and short-term flooding patterns, intrastate navigation, power generation, recreational opportunities, and wildlife preserves. Hence, canal control policies are important to the Water Resources Board. Other concerns in the region include runoff of agricultural chemicals, discharge of industrial and municipal waste water, introduction of exotic flora and fauna into local ecosystems, maintenance of sport-fisheries and other



Base from U.S. Geological Survey digital data, 1:2,000,000

Figure 2. Principal drainage basins in central and western New York. (Basin names correspond to cataloging units listed in the U.S. Geological Survey, 1982. County names are shown in fig. 1.)

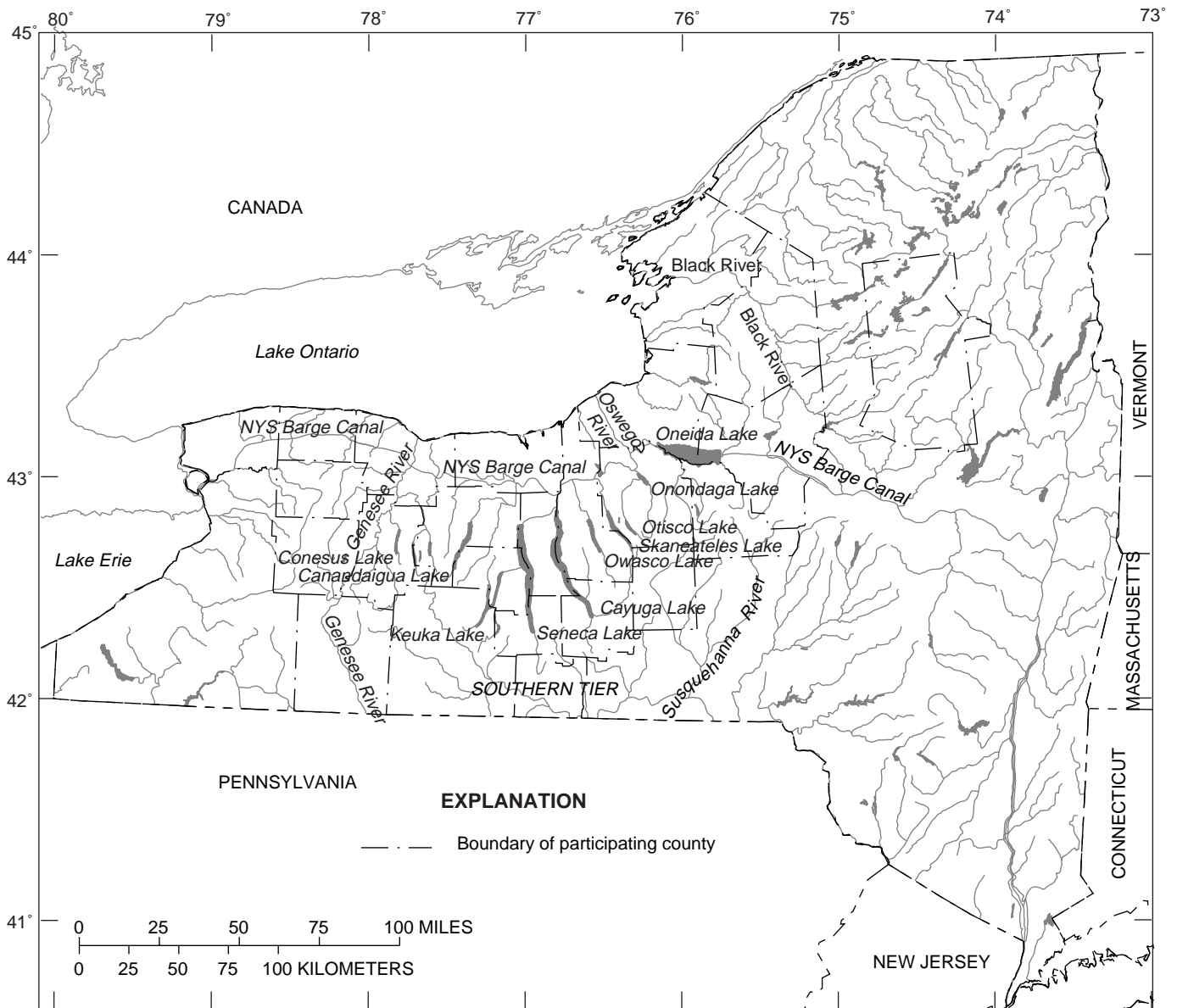
recreational water uses, urbanization and associated waterfront development, and wetland preservation.

GIS Applications in Watershed Evaluation, Planning, and Protection

A GIS is a computerized mapping and visualization tool that has many potential applications for providing information about water resources. A regional GIS would help the FL-LOWPA counties develop basinwide water-management strategies that

cross political boundaries. Monitoring networks for assessing water quality and quantity could be improved and made more efficient by application of GIS techniques. A regional GIS system could provide a means for disseminating timely water-resources information to help water managers deal proactively with short- and long-term hydrologic changes. A regional GIS also may help to:

- Predict how flow fluctuations in the Barge Canal may impact lakes, streams and shorelines in the area,
- Predict how lake-level might affect shoreline communities,



Base from U.S. Geological Survey digital data, 1:2,000,000

Figure 3. Major lakes and streams in central and western New York. (County names are shown in fig. 1.)

- Identify flood-prone areas,
- Map and monitor changes in land-use that can affect nonpoint-source pollution. Land-use categories that could be monitored include croplands, deciduous and coniferous forests, grasslands and pastures, lakes and wetlands, and urbanized areas),
- Map water-well locations and define wellhead-protection areas,
- Map the locations of potential point-source contaminants, such as hazardous waste sites, landfills, septic systems, and underground storage tanks,
- Visualize how riparian buffer zones installed along stream corridors might filter nonpoint-source pollution,
- Correlate stream-water quality with bedrock geology, land use and contaminant sources,
- Map geomorphic patterns that determine flow directions and form drainage divides,
- Maintain accurate wetland inventories,
- Manage and analyze water-use data,
- Map surface-water intake locations and define water-protection areas.

SOURCES OF GEOSPATIAL DATA FOR CENTRAL AND WESTERN NEW YORK

Methods of Compilation

Federal and State water-resources information of relevance to the FL-LOWPA counties was identified by searching the World Wide Web (WWW). Information from the WWW was clarified and validated by direct contact of the appropriate agencies.

Twenty of the 24 counties in the FL-LOWPA participated in this survey of geospatial information. Jefferson, Orleans, Seneca, and Wayne Counties did not participate, but minimal information on these counties was gleaned from a previous GIS data compilation (Genesee/Finger Lakes Regional Planning Council, 1995).

Information was compiled from questionnaires mailed to water-resources personnel in each participating county. The questionnaires asked county personnel to indicate (1) the a primary GIS contact in each county; (2) the primary GIS software used by each county; (3) the types of geospatial data available in their counties; (4) the person and agency to contact to obtain copies of the data; (5) whether the data are in digital or paper form; and (6) whether the data are in the public domain or restricted. Information from the questionnaires was tabulated and returned to the county representatives for corrections. The tables were revised accordingly and sent to the county representatives for final verification.

Responses to the initial survey and subsequent requests for correction and verification varied by county. Some counties provided extensive information and detailed corrections whereas others provided only limited information for the initial survey and minimal or no revisions. The resulting compilation reflects the variability among responses to the information requests.

Considerations for GIS Development

Over the past several years, the FL-LOWPA counties have considered plans to develop a regional GIS for water-resources management. Although GIS capabilities are well advanced in some counties, a regional system has yet to be realized. Development of a regional GIS system for the FL-LOWPA counties would require a financial commitment from the

member counties. Funding would be needed for salary of a GIS specialist and for purchase of the necessary computer hardware and software. New water-resources data sets commonly are in digital format that are easily incorporated into computerized databases. However, older geospatial information often is available only on paper maps that must be scanned or digitized before being incorporated into a database. This process can be time consuming and expensive.

The GIS would be most useful if the GIS specialist kept the database current with frequent updates of the compiled information; this would require a long-term funding commitment. Furthermore, hardware and software would need to be updated periodically, perhaps every 2 to 3 years, to meet the expected increase in system use by water managers and investigators. These updates would also require long-term funding.

Guidelines for use of Tables 1-3

The types of data and documents that may be used to build a GIS database include (Collet et al., 1996):

1. Field data (usually point measurements).
2. Cartographic documents (topographic and thematic maps).
3. Analog images (aerial photographs and satellite images).
4. Digital images (aerial and satellite images, scanned documents).
5. Existing geographical databases (layers of information already in digital form).

County sources of geospatial water-resources information in the FL-LOWPA region are summarized in Table 1, and the contact persons and scales of data items are listed in Table 2, in alphabetical order by county. The data categories in Tables 2 and 3 were chosen based on their widespread use and elementary utility; these data types are likely to be included in any regional GIS database. Federal and State sources of geospatial water-resources information identified in the survey are compiled in Table 3. These sources offer a wide range of data that could be useful in developing a regional database in the FL-LOWPA counties. Some County, State, and Federal agencies restrict distribution of proprietary data. Therefore, certain data sets listed in the tables may unavailable for incorporation into a regional GIS database.

The information in Tables 1-3 represents an overview of data characteristics at the time of

compilation; it will soon become outdated. Addresses of World Wide Web sites (Table 3) may change, rendering inactive previous valid electronic links. At the county level (Tables 1 and 2), additional data types may become available and the contact persons may change through time. Users of the tabulated information should expect discrepancies between actual data characteristics and those noted in the tables.

Although the information in Tables 1-3 will be helpful in locating geospatial data in the FL-LOWPA region, locating the information is only the first and perhaps easiest step in developing a useful database. Subsequent steps include data acquisition; data preparation and formatting for incorporation in the database; and selection and application of software to manipulate, exploit, and analyze the data (Collet et al., 1996).

SUMMARY

A regional GIS system would be of great use to water managers and investigators in the FL-LOWPA

counties. Availability of a user-friendly GIS would almost immediately increase water managers' ability to protect and exploit water resources in their counties and the region. Dependable long-term funding would be necessary to establish and maintain a regional GIS system.

REFERENCES CITED

- Collet, C., Consuegra, D., and Joerin, F., 1996, GIS needs and GIS software: in Geographical information systems in hydrology, Singh, V.P. and Fiorentio, F., eds., Kluwer, Dordrecht, p. 115-174.
- Genesee/Finger Lakes Regional Planning Council, 1995, Regional directory of data sources: Rochester, N.Y., 111 pp.
- Isachsen, Y.W., Landing, E., Lauber, J.M., Rickard, L.V., and Rogers, W.B., 1991, Geology of New York: Educational Leaflet No. 28, New York State Museum, Albany, 284 pp.
- U.S. Geological Survey, 1982, Codes for Identification of Hydrologic Units in the United States and the Caribbean Outlying Areas: Geological Survey Circular 878-A, 115 pp.

Table 1. Availability and format of water-resources information from participating counties in central and western New York, by county

[D, data available in digital form (generally can be printed on paper); P, data available in paper form; D&P, data available in digital and(or) paper form. A dash indicates data unavailable. No data were available for Seneca or Wayne Counties.]

| County | Aerial photos | Agricultural districts | County &/or municipal boundaries | Geology | Hazardous waste sites | Hydrography &/or flood plains | Land use | Roads, rail lines, &/or trails | School districts | Soils | Tax parcels | Topography | Water &/or sewer lines | Watershed boundaries | Wetlands | Zoning maps | Page no. in table 2 |
|------------|---------------|------------------------|----------------------------------|---------|-----------------------|-------------------------------|----------|--------------------------------|------------------|-------|-------------|------------|------------------------|----------------------|----------|-------------|---------------------|
| Allegany | P | P | D | P | D&P | P | P | D&P | D | P | D&P | P | D&P | P | -- | P | 8 |
| Cayuga | P | D | D&P | D | D | D&P | D&P | D&P | D&P | P | P | P | P | D&P | D&P | D&P | 9 |
| Chemung | -- | -- | D | D | D | D | D | D | P | D | D | D&P | D | D | D | D | 10 |
| Cortland | P | D | D | -- | D | D | D | D | D | D&P | D | D&P | P | -- | D | P | 11 |
| Genesee | P | D | D | -- | -- | D | -- | D | P | P | D&P | P | P | D | -- | D&P | 12 |
| Hamilton | P | -- | P | -- | -- | -- | P | P | P | P | P | P | -- | -- | P | -- | 13 |
| Jefferson | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14 |
| Lewis | P | P | P | -- | P | P | P | P | D | P | P | P | P | D | P | -- | 14 |
| Livingston | P | D&P | D&P | -- | D&P | D&P | D&P | D&P | D | D&P | P | P | P | D&P | -- | D&P | 15 |
| Madison | -- | P | D | -- | -- | D | -- | -- | D | D&P | D&P | -- | -- | D&P | -- | P | 16 |
| Monroe | P | D&P | D&P | -- | P | D&P | D&P | D&P | D&P | D&P | D&P | P | D&P | D&P | D&P | D&P | 17 |
| Niagara | P | P | P | -- | P | P | -- | P | P | D&P | D&P | P | P | P | D&P | P | 18 |
| Oneida | D | D | D | -- | -- | -- | -- | -- | -- | D | D | -- | -- | -- | -- | -- | 19 |
| Onondaga | D | D | D | D | -- | D | D | D | D | D&P | D | P | D | D | D | -- | 20 |
| Ontario | P | D | D | D | -- | D | D | D | D | D | D | P | D | D | -- | D | 21 |
| Orleans | -- | D | D | D | -- | D | D | D | -- | D | D | D | -- | D | -- | D | 22 |
| Oswego | P | D | D | D | -- | D | D&P | D | P | D | P | P | D | D | D | -- | 23 |
| Schuyler | P | D | D | P | -- | D | D&P | D&P | P | D&P | P | P | D&P | D&P | D&P | D | 24 |
| Steuben | P | D | D | D | D | D | D | D | D&P | D | D | P | D | D | D | D | 25 |
| Tompkins | P | D | D | P | -- | D | P | D | D | D&P | D | D | -- | D | D | D&P | 26 |
| Wyoming | -- | D | P | D | P | D&P | -- | P | -- | D&P | P | P | -- | P | -- | -- | 27 |
| Yates | D&P | D | D | D | -- | D | D | D | D | D | D | D | D | D | D | D | 28 |

Table 2. Water-resources-data categories, and their sources and scale, in participating central and western New York counties, by county
 [&/or = and(or). Dept. = Department. Dashes indicate information is unavailable.]

Allegany County

Primary GIS contact - Fred Sinclair, Soil & Water Conservation District (716) 268-7831
 Primary GIS software - GRASS

| Database category | Contact | Source scale |
|----------------------------------|--|-----------------|
| Aerial photographs | Soil & Water Conservation District, Fred Sinclair (716) 268-7831 | -- |
| Agricultural districts | " | 1:24,000 |
| County &/or municipal boundaries | " | -- |
| Geology | " | -- |
| Hazardous waste sites | " | -- |
| Hydrography &/or floodplains | " | 1:24,000; other |
| Land use | " | -- |
| Roads, rail lines, &/or trails | " | -- |
| School districts | " | -- |
| Soils | " | 1:250,000 |
| Tax parcels | " | -- |
| Topography | " | -- |
| Water & sewer lines | Health Dept., Hans Peters (716) 268-9250 | -- |
| Watershed boundaries | Soil & Water Conservation District, Fred Sinclair (716) 268-7831 | -- |
| Wetlands | -- | -- |
| Zoning maps | Soil & Water Conservation District, Fred Sinclair (716) 268-7831 | -- |

Other information: Information on municipal well-head location, public water supplies, and sewage and septic systems:

Geospatial information is available at scale of 1:24,000 for the following:

| | |
|--|----------------------|
| Cuba Lake and Rushford Lake watersheds | municipal wellheads |
| classified streams | priority waterbodies |
| targeted watersheds | the Seneca Nation |
| Oil Springs | wildlife refuges |
| Moss Lake Nature Conservancy | historic sites |

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)
Cayuga County

Primary GIS contact - Nick Colas, County Planning Department (315) 253-1276

Primary GIS software - ARC/INFO, ArcView

| Database category | Contact | Source scale |
|----------------------------------|---|-----------------|
| Aerial photographs | County Planning Department, Nick Colas (315) 253-1276 | variable |
| Agricultural districts | “ | 1:24,000 |
| County &/or municipal boundaries | “ | “ |
| Geology | “ | 1:250,000 |
| Hazardous waste sites | “ | variable |
| Hydrography &/or flood plains | “ | 1:24,000, other |
| Land use | “ | 1:24,000 |
| Roads, rail lines, &/or trails | “ | “ |
| School districts | “ | 1:95,040 |
| Soils | “ | 1:15,840 |
| Tax parcels | “ | variable |
| Topography | “ | 1:24,000 |
| Water & sewer lines | “ | variable |
| Watershed boundaries | “ | 1:63,360 |
| Wetlands | “ | 1:24,000 |
| Zoning maps | “ | variable |

Other information:

Partial unique digital data coverages are available for the following:

- | | |
|-----------------------|-----------------------|
| hazardous-waste sites | hydrology |
| soils | tax maps |
| topography | water and sewer lines |
| zoning maps. | |

Full digital coverages are available for the following:

- 911 (emergency) access points, economic development zones, and parkland recreation areas.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Chemung County**

Primary GIS contact - Ron Shetler, Real Property Tax Services (607) 737-2988

Primary GIS software - ArcView

| Database category | Contact* | Source scale |
|----------------------------------|--|--------------|
| Aerial photographs | -- | -- |
| Agricultural districts | -- | -- |
| County &/or municipal boundaries | Planning Dept., Dave Bubniak (607) 737-5510; STCRPDB, Dara Fell (607) 962-5092 | -- |
| Geology | “ a | -- |
| Hazardous waste sites | “ | -- |
| Hydrography &/or floodplains | “ | -- |
| Land use | “ b | -- |
| Roads, rail lines, &/or trails | “ | -- |
| School districts | Real Property Tax Services, Ron Shetler (607) 737-2988 | -- |
| Soils | Planning Dept., Dave Bubniak (607) 737-5510; STCRPDB, Dara Fell (607) 962-5092 | -- |
| Tax parcels | Real Property Tax Services, Ron Shetler (607) 737-2988 | -- |
| Topography | Planning Dept., Dave Bubniak (607) 737-5510; ^c STCRPDB, Dara Fell (607) 962-5092 | -- |
| Water & sewer lines | “ d | -- |
| Watershed boundaries | “ | 1:100,000 |
| Wetlands | “ | -- |
| Zoning maps | “ e | -- |

* STCRPDB, Southern Tier Central Region Planning and Development Board

^a Surficial geology from Upper Susquehanna Coalition study.^b From LANDSAT images.^c Partial coverage for well-head protection area in Town of Horseheads.^d Locations of SPEDES discharges.^e For selected cities (e.g. Elmira).

Other information:

STCRPDB (<http://www.stcrpdb.dst.ny.us/>) has many other point, line, and polygon coverages for county.

Weiler Mapping Inc. (contact: John Trimmer (607) 739-4476) maintains county tax parcel maps.

Other data available from County Planning Department include: locations of water wells tested for chemical quality; road-bank erosion sites; and stressed-streambank segment inventory (from Upper Susquehanna Coalition study).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Cortland County

Primary GIS contact - Dan Dineen, Planning Dept. (607) 753-5043

Primary GIS software - ARC/INFO

| Data category | Contact | Source scale |
|----------------------------------|--|--------------|
| Aerial photographs | Farm Services Agency, Tina Whiteman (607) 753-0851 | 1:7200 |
| Agricultural districts | Planning Dept., Dan Dineen (607) 753-5043 | -- |
| County &/or municipal boundaries | " | 1:24,000 |
| Geology | -- | -- |
| Hazardous waste sites | " | -- |
| Hydrography &/or floodplains | " | -- |
| Land use | " | 1:250,000 |
| Roads, rail lines, &/or trails | *Planning Dept., Dan Dineen (607) 753-5043 | 1:24,000 |
| School districts | Planning Dept., Dan Dineen (607) 753-5043 | 1:100,000 |
| Soils | Soil & Water Conservation District, Amanda Barber (607) 756-5991; Planning Dept., Dan Dineen (607) 753-5043 | 1:250,000 |
| Tax parcels | Planning Dept., Dan Dineen (607) 753-5043 | -- |
| Topography | Soil & Water Conservation District, Amanda Barber (607) 756-5991; Planning Dept., Dan Dineen (607) 753-5043 | 1:24,000 |
| Water & sewer lines | Health Dept., Peter Rynklewicz (607) 753-0651 | -- |
| Watershed boundaries | -- | -- |
| Wetlands | Planning Dept., Dan Dineen (607) 753-5043 | 1:24,000 |
| Zoning maps | -- | -- |

* From scanned topographic maps.

Also available are digital coverages of: contour lines (20' interval); slope (percent); and zip-code boundaries.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Genesee County**

Primary GIS contact - George Squires, Soil & Water Conservation District (716) 343-2362

Primary GIS software - Atlas GIS

| Database category | Contact* | Source scale |
|------------------------------------|---|-------------------|
| Aerial photographs | ^a Planning Dept., Robert Patterson (716) 344-2580 x5468 SWCD, George Squires (716) 343-2362 | 1:4,800; 1:12,000 |
| Agricultural districts | SWCD, George Squires (716) 343-2362; Planning Dept., Robert Patterson (716) 344-2580 x5468 | -- |
| County and/or municipal boundaries | Planning Dept., Robert Patterson (716) 344-2580 x5468 | -- |
| Geology | -- | -- |
| Hazardous waste sites | -- | -- |
| Hydrography and/or flood plains | SWCD, George Squires (716) 343-2362 | -- |
| Land use | -- | -- |
| Roads, rail lines, &/or trails | Planning Dept., Jim Duval (716) 344-2580 x5471 | -- |
| School districts | Planning Dept., Robert Patterson (716) 344-2580 x5468 | -- |
| Soils | SWCD, George Squires (716) 343-2362 | 1:15,840 |
| Tax parcels | Real Property Dept., Joe Macaluso (716) 344-2550 x2218 | -- |
| Topography | SWCD, George Squires (716) 343-2362 | -- |
| Water & sewer lines | ^b Corneles Engineering, Scott Harter (716) 427-0320 | -- |
| Watershed boundaries | SWCD, George Squires (716) 343-2362 | -- |
| Wetlands | -- | -- |
| Zoning maps | Planning Dept., Robert Patterson (716) 344-2580 x5468 | 1:24,000; other |

* SWCD, Soil & Water Conservation District

^a Aerial photographs taken in 1938, 1954, 1963, 1968, 1974, and 1985.^b Limited to certain municipalities (e.g. Batavia).

Other information: Also available are:

paper and digital information on Batavia Wellhead Protection Project (contact Robert Patterson, Planning Department (716) 344-2580 x5468);

census data (paper format, contact Jim Duval, Planning Department (716) 344-2580 x5471); and

enhanced TIGER maps showing locations of traffic-control devices (contact Jim Duval).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Hamilton County

Primary GIS contact - Soil & Water Conservation District (518) 548-3991

Primary GIS software - None

| Data category | Contact | Source scale |
|----------------------------------|--|---------------------------|
| Aerial photographs | Soil & Water Conservation District (518) 548-3991 Real Property Services (518) 548-5531 | 1:24,000 |
| Agricultural districts | -- | -- |
| County &/or municipal boundaries | Real Property Services (518) 548-5531 | 1:1,200; 1:2,400; 1:7,200 |
| Geology | -- | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | -- | -- |
| Land use | ^a Real Property Services (518) 548-5531 | 1:177,408 |
| Roads, rail lines, &/or trails | Real Property Services (518) 548-5531 | 1:24,000; 1:142,560 |
| School districts | Real Property Services (518) 548-5531 | 1:12,000 |
| Soils | Soil & Water Conservation District (518) 548-3991 | 1:24,000 |
| Tax parcels | Real Property Services (518) 548-5531 | 1:1,200; 1:2,400; 1:7,200 |
| Topography | Soil & Water Conservation District (518) 548-3991 Real Property Services (518) 548-5531 | 1,24,000; 1:62,500 |
| Water & sewer lines | -- | 1:12,000 |
| Watershed boundaries | Real Property Services (518) 548-5531 | -- |
| Wetlands | -- | 1:12,000 |
| Zoning maps | -- | -- |

^a Land-use information in paper form also available for Towns of:

Arietta (518) 548-3415;
Indian Lake (518) 648-5885;
Long Lake (518) 5624-5441;
Wells (518) 924-7912).

Benson (518) 863-8596;
Inlet (518) 357-2204;
Morehouse (315) 826-3052;

Hope (518) 924-4060;
Lake Pleasant (518) 548-5204
Speculator (518) 548-7352;

Information in paper form also available on countywide ambulance districts and census-block limits; contact Real Property Services (518) 548-5531.

For GIS information, contact Soil & Water Conservation District (518) 548-3991.

Jefferson County

No significant countywide data sets.

The Tug Hill Commission (<http://www.imcnet.net/TugHill/tughill.html>) has a variety of digital data for the southern part of the county.

Fort Drum Military Reservation has data for the Army base but has not shared it with the county.

The Nature Conservancy has done some mapping of environmentally sensitive areas in the county.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Lewis County

Primary GIS contact - John Stewart, Soil & Water Conservation District (315) 376-6122

Primary GIS software - ArcView

| Data category | Contact* | Source scale |
|----------------------------------|---|--------------|
| Aerial photographs | Tax Office, Clerk (315) 376-5324 | 1:9,600 |
| Agricultural districts | SWCD, John Stewart (315) 376-6122 | 1:24,000 |
| County &/or municipal boundaries | Planning Dept., John McHugh (315) 376-5422 | 1:126,720 |
| Geology | -- | -- |
| Hazardous waste sites | Highway Dept., Gary Buckingham (315) 376-5351 | -- |
| Hydrography &/or floodplains | SWCD, John Stewart (315) 376-6122 | 1:24,000 |
| Land use | SWCD, John Stewart (315) 376-6122 | 1:24,000 |
| Roads, rail lines, &/or trails | Highway Dept., Gary Buckingham (315) 376-5351 | -- |
| School districts | -- | -- |
| Soils | SWCD, John Stewart (315) 376-6122 | 1:24,000 |
| Tax parcels | Tax Office, Clerk (315) 376-5324 | 1:9,600 |
| Topography | SWCD, John Stewart (315) 376-6122 | 1:24,000 |
| Water & sewer lines | Health Dept, Tom Boxberger (315) 785-2277 | -- |
| Watershed boundaries | -- | -- |
| Wetlands | SWCD, John Stewart (315) 376-6122 | 1:24,000 |
| Zoning maps | -- | -- |

* SWCD, Soil and Water Conservation District

Other Information:

Planning Department (contact Jon McHugh) also has census and land-cover information.

Highway Department (contact Gary Buckingham) also has locations of landfills, road-salt stockpiles, and drainageways.

Primary GIS software is ArcView 3.0.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Livingston County

Primary GIS contact - Angela Ellis, Planning Department (716) 243-7550

Primary GIS software - ArcView, Atlas GIS

| Data category | Contact | Source scale |
|----------------------------------|--|--------------|
| Aerial photographs | Soil & Water Conservation District (SWCD), Peter Kanouse (716) 382-3214 | 1:12,000 |
| Agricultural districts | Planning Dept., Angela Ellis (716) 243-7550 | 1:24,000 |
| County &/or municipal boundaries | “ | variable |
| Geology | Environmental Health Dept., Ralph Van Houten (716) 243-7280 Planning Dept., Angela Ellis (716) 243-7550 | variable |
| Hazardous waste sites | Public Works Dept., Cathy Muscarella (716) 346-3523 | 1:253,440 |
| Hydrography &/or floodplains | Planning Dept., Angela Ellis (716) 243-7550 | variable |
| Land use | “ | variable |
| Roads, rail lines, &/or trails | Highway Dept., Don Higgins (716) 346-3520 Planning Dept., Angela Ellis (716) 243-7550 | variable |
| School districts | Planning Dept., Angela Ellis (716) 243-7550 | variable |
| Soils | SWCD, Peter Kanouse (716) 382-3214; Planning Dept., Angela Ellis (716) 243-7550 | 1:31,680 |
| Tax parcels | Real Property Tax Services, Richard Shefflin (716) 243-7192 | 1:4,800 |
| Topography | Planning Dept., Angela Ellis (716) 243-7550 | 1:24,000 |
| Water & sewer lines | Public Works Dept., Cathy Muscarella (716) 346-3523 | variable |
| Watershed boundaries | Planning Dept., Angela Ellis (716) 243-7550 | variable |
| Wetlands | -- | -- |
| Zoning maps | Planning Dept., Angela Ellis (716) 243-7550 | -- |

Other Information: Contact Angela Ellis (716) 243-7550 for information on:

- “Chemical analysis and nutrient loading of streams entering Conesus Lake”, by J.C. Macarewicz (SUNY Brockport; paper report);
- stressed-stream analyses for various streams entering Conesus Lake (paper data);
- Conesus Lake Inventory (1994; paper and digital data);
- Conesus Inlet Fish & Wildlife Management Area (paper and digital data); Genesee Valley Greenway (paper and digital data);
- locations of recycling drop-off centers (paper and digital data);
- ground-water availability and well yields (from U.S. Geological Survey Report; paper and digital data);
- environmentally sensitive overlay districts (paper data).

Other available information includes: priority watersheds (paper data; contact James Booth, Natural Resources Conservation Service (716) 382-3214); farm surveys (paper data; contact Peter Kanouse, Soil & Water Conservation District (716) 382-3214); Livingston County Agriculture Study (paper data; contact Bruce Dehm (716) 243-4427); water-quality sampling and monitoring, environmental permits (paper and digital data; contact Ralph Van Houten, Environmental Health Department (716) 243-7280); historically significant sites (paper data; contact M. Patricia Schaap, County Historian (716) 243-2311); locations of mines and oil and gas wells (paper data; contact Ralph Van Houten).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Madison County**

Primary GIS contact - Lisa Welch, Planning Department (315) 366-2376

Primary GIS software - ARC/INFO, ArcView

| Data category | Contact | Source scale |
|----------------------------------|---|----------------------------------|
| Aerial photographs | -- | -- |
| Agricultural districts | Planning Dept., Lisa Welch (315) 366-2376 | 1:24,000 |
| County &/or municipal boundaries | " | 1:600; 1:1200; 1:2400; 1:4800 |
| Geology | -- | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | Planning Dept., Lisa Welch (315) 366-2376 | 1:24,000 |
| Land use | -- | -- |
| Roads, rail lines, &/or trails | -- | -- |
| School districts | Planning Dept., Lisa Welch (315) 366-2376 | 1:600; 1:1200; 1:2400; 1:4800 |
| Soils | " | 1:24,000; 1:62,500 |
| Tax parcels | Real Property Tax Services, Cathy Conrad (315) 366-2348 | 1:600; 1:1200; 1:2400; 1:4800 |
| Topography | -- | -- |
| Water & sewer lines | -- | -- |
| Watershed boundaries | Planning Dept., Lisa Welch (315) 366-2376 | 1:24,000 |
| Wetlands | -- | -- |
| Zoning maps | Planning Dept., Lisa Welch (315) 366-2376 | variable |

Other information:

Planning Department also has several nonunique digital and paper data sets that are available from State or Federal sources.

Primary GIS software is PC ARC/INFO (contact Lisa Welch, Planning Department (315) 366-2376).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Monroe County

Primary GIS contact - Tom Goodwin, Planning & Development Office (716) 428-5418

Primary GIS software - ARC/INFO, ArcView

| Data category | Contact | Source scale |
|----------------------------------|--|--------------|
| Aerial photographs | Planning & Development Office, Tom Goodwin (716) 428-5418 | 1:12,000 |
| Agricultural districts | “ | “ |
| County &/or municipal boundaries | “ | “ |
| Geology | -- | “ |
| Hazardous waste sites | Environmental Management Council (716) 274-8137 | “ |
| Hydrography &/or floodplains | Planning & Development Office, Tom Goodwin (716) 428-5418 | “ |
| Land use | “ | “ |
| Roads, rail lines, &/or trails | *Center for Governmental Research, Scott Sherwood (716) 325-6360 | -- |
| School districts | Planning & Development Office, Tom Goodwin (716) 428-5418 | 1:12,000 |
| Soils | “ | “ |
| Tax parcels | “ | 1:2,400 |
| Topography | “ | 1:2,400 |
| Water & sewer lines | “ | 1:12,000 |
| Watershed boundaries | “ | “ |
| Wetlands | “ | “ |
| Zoning maps | “ | “ |

*Source is enhancement of Census Tiger Files.

Other information:

Coverages for buildings and facilities in City of Rochester are held by Rochester Bureau of Engineering Services (contact John Thomas (716) 428-6942).

Primary GIS software is ARC/INFO and ArcView (contact Tom Goodwin, Planning & Development Office (716) 428-5418).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Niagara County**

Primary GIS software - ArcView

| Database category | Contact | Source scale |
|----------------------------------|---|--------------|
| Aerial photographs | SWCD, Cindy Long (716) 434-4949 | -- |
| Agricultural districts | Cornell Cooperative Extension, Paul Lehman (716) 433-8839 | 1:24,000 |
| County &/or municipal boundaries | Planning Dept., JoAnne Ellsworth (716) 439-7269 | -- |
| Geology | -- | -- |
| Hazardous waste sites | Planning Dept., JoAnne Ellsworth (716) 439-7269 | 1:24,000 |
| Hydrography &/or floodplains | SWCD, Cindy Long (716) 434-4949 | -- |
| Land use | -- | -- |
| Roads, rail lines, &/or trails | Public Works Dept., Dorson Wilson (716) 439-7242 | 1:63,360 |
| School districts | Planning Dept., JoAnne Ellsworth (716) 439-7269 | " |
| Soils | ^a SWCD, Cindy Long (716) 434-4949 | 1:15,840 |
| Tax parcels | ^b Real Property Tax Services, William Budde Jr. (716) 439-7077 | 1:4800 |
| Topography | SWCD, Cindy Long (716) 434-4949 | 1:24,000 |
| Water & sewer lines | Public Works Dept., Dorson Wilson (716) 439-7242 | 1:4800 |
| Watershed boundaries | SWCD, Cindy Long (716) 434-4949 | 1:63,360 |
| Wetlands | " | 1:24,000 |
| Zoning maps | Planning Dept., JoAnne Ellsworth (716) 439-7269 | " |

* SWCD, Soil & Water Conservation District

^a Digital information available for Towanda Creek watershed (JoAnne Ellsworth, Planning Dept. (716) 439-7269).^b Digital information available for:

Towns of Lockeporte and Pendleton (contact William Budde Jr. (716) 439-7077);

Johnson Creek watershed (contact, Chris Castiglione, U.S. Fish & Wildlife Service (716) 691-5456); and

City of Niagara Falls (contact Anthony Restaino, City of Niagara Falls (716) 286-4320).

Other information: Information in paper form is available for:

gas pipelines (contact Cindy Long, Soil & Water Conservation District (716) 434-4949); and

stream classifications at scale of 1:63,360 (contact JoAnne Ellsworth, Planning Dept. (716) 439-7269).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Oneida County

Primary GIS contact - Verne LeClair, Planning Department (315) 798-5710

Primary GIS software - ArcView, GRASS

| Database category | Contact | Source scale |
|----------------------------------|--|--------------|
| Aerial photographs | Finance Dept., Dean Burth (315) 798-5750 | -- |
| Agricultural districts | " | -- |
| County &/or municipal boundaries | *Planning Dept., Verne LeClair (315) 798-5710 | -- |
| Geology | -- | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | -- | -- |
| Land use | -- | -- |
| Roads, rail lines, &/or trails | -- | -- |
| School districts | -- | -- |
| Soils | Soil & Water Conservation District, Kevin Lewis (315) 736-3334 | 1:24,000 |
| Tax parcels | Finance Dept., Dean Burth (315) 798-5750 | -- |
| Topography | -- | -- |
| Water & sewer lines | -- | -- |
| Watershed boundaries | -- | -- |
| Wetlands | -- | -- |
| Zoning maps | -- | -- |

*Includes fire districts.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)
Onondaga County

Primary GIS contact - Bruce Johnson, Syracuse-Onondaga County Planning Agency (315) 435-2611
 Primary GIS software - ARC/INFO, ArcView

| Database category | Contact* | Source scale |
|----------------------------------|---|--------------|
| Aerial photographs | *City of Syracuse Water Dept. (315) 473-2608 | -- |
| Agricultural districts | SWCD, Walt Neuhauser (315) 677-3851 ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| County &/or municipal boundaries | SOCPA, Bruce Johnson; Don Jordan (315) 435-2611 | -- |
| Geology | ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Hazardous waste sites | b | -- |
| Hydrography &/or floodplains | SOCPA, Bruce Johnson/Don Jordan (315) 435-2611 NRCS, Tony Esser (315) 477-6536 ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Land use | ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Roads, rail lines, &/or trails | SOCPA, Bruce Johnson/Don Jordan (315) 435-2611 *City of Syracuse Water Dept. (315) 473-2608 | -- |
| School districts | SOCPA, Bruce Johnson/Don Jordan (315) 435-2611 | -- |
| Soils | ^b NRCS, Tony Esser (315) 477-6536; SWCD, Walt Neuhauser (315) 677-3851 | -- |
| Tax parcels | SOCPA, Bruce Johnson/Don Jordan (315) 435-2611 ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Topography | SWCD, Walt Neuhauser (315) 677-3851 ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Water & sewer lines | ^c City of Syracuse Dept. of Engineering, John Przepiora (315) 473-2607; Brad Miller (315) 473-2689 | -- |
| Watershed boundaries | SOCPA, Bruce Johnson; Don Jordan (315) 435-2611 ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Wetlands | ^a City of Syracuse Water Dept. (315) 473-2608 | -- |
| Zoning maps | -- | -- |

*SWSD, Soil & Water Conservation District

SOCPA, Syracuse-Onondaga County Planning Agency

^a Detailed digital coverages for Skaneateles Lake and/or City of Syracuse; many other digitized attributes are available in Skaneateles Lake watershed.

^b Includes partial digital coverage for Onondaga Lake watersheds.

^c Partial coverage for City of Syracuse. Countywide environmental management maps are currently being digitized.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Ontario County

Primary GIS contact - Tim Jensen, Planning Department (716) 396-4458

Primary GIS software - Atlas GIS

| Database category | Contact | Source scale |
|----------------------------------|--|--------------------|
| Aerial photographs | *Planning Dept., Tim Jensen (716) 396-4458 | 1:12,000; 1:24,000 |
| Agricultural districts | Planning Dept., Tim Jensen (716) 396-4458 | -- |
| County &/or municipal boundaries | " | -- |
| Geology | " | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | Planning Dept., Tim Jensen (716) 396-4458 | 1:24,000 |
| Land use | " | -- |
| Roads, rail lines, &/or trails | " | -- |
| School districts | " | -- |
| Soils | " | -- |
| Tax parcels | " | -- |
| Topography | " | -- |
| Water & sewer lines | " | -- |
| Watershed boundaries | " | -- |
| Wetlands | -- | -- |
| Zoning maps | Planning Dept., Tim Jensen (716) 396-4458 | -- |

*Air photos taken in 1968, 1971, 1979, 1985, 1990, & 1995.

Also available are digital and paper data from Naples wellhead-protection study (contact Warren Hart, Planning Dept. (716) 396-4455).

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Orleans County**

Primary GIS contact - James Bensley, Planning & Development Department (716) 589-7004

Primary GIS software - Atlas GIS

| Database category | Contact | Source scale |
|----------------------------------|--|--------------|
| Aerial photographs | -- | -- |
| Agricultural districts | Planning & Development Dept., James Bensley (716) 589-7004 | -- |
| County &/or municipal boundaries | " | -- |
| Geology | " | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | Planning & Development Dept., James Bensley (716) 589-7004 | -- |
| Land use | -- | -- |
| Roads, rail lines, &/or trails | Planning & Development Dept., James Bensley (716) 589-7004 | -- |
| School districts | -- | -- |
| Soils | Planning & Development Dept., James Bensley (716) 589-7004 | -- |
| Tax parcels | " | -- |
| Topography | Planning & Development Dept., James Bensley (716) 589-7004 | -- |
| Water & sewer lines | -- | -- |
| Watershed boundaries | Planning & Development Dept., James Bensley (716) 589-7004 | -- |
| Wetlands | -- | -- |
| Zoning maps | Planning & Development Dept., James Bensley (716) 589-7004 | -- |

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Oswego County

Primary GIS contact - Martin Weiss, Department of Planning & Community Development (315) 349-8292
 Primary GIS software - ARC/INFO

| Database category | Contact | Source scale |
|----------------------------------|--------------------------------------|---------------------|
| Aerial photographs | DPCD, Martin Weiss (315) 349-8292 | 1:24,000 |
| Agricultural districts | DPCD, Martin Weiss (315) 349-8292 | -- |
| County &/or municipal boundaries | “ | 1:24,000 |
| Geology | “ | “ |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | “ | 1:24,000; 1:100,000 |
| Land use | “ | 1:24,000 |
| Roads, rail lines, &/or trails | “ | “ |
| School districts | -- | -- |
| Soils | DPCD, Martin Weiss (315) 349-8292 | 1:24,000 |
| Tax parcels | “ | -- |
| Topography | “ | 1:24,000 |
| Water & sewer lines | “ | “ |
| Watershed boundaries | “ | --“ |
| Wetlands | “ | 1:24,000 |
| Zoning maps | -- | -- |

* DPCD, Department of Planning and Community Development

Other information:

Digital geospatial information also available for the following:

- greenways, community facilities,
- principal aquifers, public well fields, and
- vegetative cover.

Primary GIS software is ARC/INFO 7.1.2.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Schuyler County**

Primary GIS contact - Lloyd Wetherbee, Soil & Water Conservation District (607) 535-9650

Primary GIS software - GRASS

| Database category | Contact* | Source scale |
|----------------------------------|---|------------------|
| Aerial photographs | ^a Soil & Water Conservation District (SWCD), Lloyd Wetherbee (607) 535-9650 | 1:7920; 1:15,840 |
| Agricultural districts | “ | 1:4,800 |
| County &/or municipal boundaries | STCRPDB, Dara Fell (607) 962-5092 | -- |
| Geology | SWCD, Lloyd Wetherbee (607) 535-9650 | 1:250,000 |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | STCRPDB, Dara Fell (607) 962-5092 | 1,24,000 |
| Land use | ^b SWCD, Lloyd Wetherbee (607) 535-9650; STCRPDB, Dara Fell (607) 962-5092 | 1:15,840 |
| Roads, rail lines, &/or trails | STCRPDB, Dara Fell (607) 962-5092 | 1,24,000 |
| School districts | Real Property Services (607) 535-8118 | 1:4,800 |
| Soils | ^c SWCD, Lloyd Wetherbee (607) 535-9650 | 1:15,840 |
| Tax parcels | Real Property Services (607) 535-8118 | 1:4,800 |
| Topography | SWCD, Lloyd Wetherbee (607) 535-9650 | 1:24,000 |
| Water & sewer lines | ^d SWCD, Lloyd Wetherbee (607) 535-9650 | 1:9,600 |
| Watershed boundaries | SWCD, Lloyd Wetherbee (607) 535-9650; STCRPDB, Dara Fell (607) 962-5092 | 1:24,000 |
| Wetlands | STCRPDB, Dara Fell (607) 962-5092 | 1:24,000 |
| Zoning maps | SWCD, Lloyd Wetherbee (607) 535-9650 | 1:9,600 |

* SWCD, Soil & Water Conservation District
STCRPDB, Southern Tier Central Regional Planning and Development Board

^a Aerial photos taken in 1954, 1964, and 1985.

^b Detailed land-use data for about 60 percent of county are available

^c Detailed soils data for about 50 percent of county are available

^d Partial coverages at scale of 1:9600 are available for sewer and water districts in towns of Watkins Glen and Montour Falls

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Steuben County

Primary GIS contact - Dara Fell, *STCRPDB (607) 962-5092
 Primary GIS software - ARC/INFO, ArcView

| Database category | Contact** | Source scale |
|----------------------------------|---|--------------|
| Aerial photographs | Planning Dept., Tom Sears (607) 776-9631 | -- |
| Agricultural districts | " | -- |
| County &/or municipal boundaries | Planning Dept., Tom Sears (607) 776-9631; STCRPDB, Dara Fell (607) 962-5092 | -- |
| Geology | STCRPDB, Dara Fell (607) 962-5092 | -- |
| Hazardous waste sites | STCRPDB, Dara Fell (607) 962-5092 | -- |
| Hydrography &/or floodplains | Planning Dept., Tom Sears (607) 776-9631; STCRPDB, Dara Fell (607) 962-5092 | -- |
| Land use | " | -- |
| Roads, rail lines, &/or trails | Planning Dept., Tom Sears (607) 776-9631; STCRPDB, Dara Fell (607) 962-5092 | -- |
| School districts | Real Property Services (607) 535-8118 | 1:4,800 |
| Soils | STCRPDB, Dara Fell (607) 962-5092 | -- |
| Tax parcels | Real Property Tax Office, Donna Hatch (607) 776-9631 STCRPDB, Dara Fell (607) 962-5092 | -- |
| Topography | Planning Dept., Tom Sears (607) 776-9631 | -- |
| Water & sewer lines | ^a STCRPDB, Dara Fell (607) 962-5092 | -- |
| Watershed boundaries | STCRPDB, Dara Fell (607) 962-5092 | 1:100,000 |
| Wetlands | " | -- |
| Zoning maps | ^b STCRPDB, Dara Fell (607) 962-5092 | -- |

* STCRPDB Southern Central Regional Planning and Development Board

^a Digital coverage of approximate sewer-line locations in Town of Corning.

^b Digital coverages for Towns of Addison and Corning

Other information: STCRPDB (<http://www.stcrpdb.dst.ny.us/>) has many other point, line, and polygon coverages for county.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Tompkins County**

Primary GIS contact - Greg Potter, Department of Information Services (607) 274-5416

Primary GIS software - ARC/INFO, ArcView

| Database category | Contact | Source scale |
|----------------------------------|---|----------------------|
| Aerial photographs | Dept. of Information Services, Greg Potter (607) 274-5416 | 1:12,000 to 1:24,000 |
| Agricultural districts | “ | 1:4,800 |
| County &/or municipal boundaries | “ | 1:600 to 1:4,800 |
| Geology | “ | 1:250,000 |
| Hazardous waste sites | * | -- |
| Hydrography &/or floodplains | Dept. of Information Services, Greg Potter (607) 274-5416 | 1:4,800 to 1:24,000 |
| Land use | “ | 1:24,000 |
| Roads, rail lines, &/or trails | “ | 1:600 to 1:4,800 |
| School districts | “ | 1:600 to 1:4,800 |
| Soils | “ | 1:15,800 |
| Tax parcels | “ | 1:600 to 1:4,800 |
| Topography | “ | 1:24,000 |
| Water & sewer lines | -- | -- |
| Watershed boundaries | Dept. of Information Services, Greg Potter (607) 274-5416 | 1:24,000 |
| Wetlands | “ | 1:24,000 |
| Zoning maps | “ | 1:600 to 1:4,800 |

* Information about hazardous-waste sites is available in summary reports, but the source data is proprietary.

Numerous data are available for site-specific locations exist. Contact Greg Potter for more information.

See Tompkins County's GIS Website at <http://www.tompkins-co.org/gis/>.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)

Wyoming County

Primary GIS contact - Greg McKurth, Soil & Water Conservation District (716) 786-5070

Primary GIS software - Atlas GIS

| Database category | Contact | Source scale |
|----------------------------------|--|-----------------|
| Aerial photographs | -- | -- |
| Agricultural districts | Planning Dept., Barbara Shilling (716) 786-8846 | -- |
| County &/or municipal boundaries | -- | -- |
| Geology | -- | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | -- | 1:24,000; other |
| Land use | -- | -- |
| Roads, rail lines, &/or trails | Planning Dept., Barbara Shilling (716) 786-8846 | -- |
| School districts | -- | -- |
| Soils | Soil & Water Conservation District, Greg McKurth (716) 786-5070 | 1:190,080 |
| Tax parcels | Real Property Tax Services, Richard Dean (716) 786-8828 | |
| Topography | Planning Dept., Barbara Shilling (716) 786-8846 | -- |
| Water & sewer lines | -- | -- |
| Watershed boundaries | Soil & Water Conservation District, Greg McKurth (716) 786-5070; Planning Dept., Barbara Shilling (716) 786-8846 | 1:24,000 |
| Wetlands | -- | -- |
| Zoning maps | -- | -- |

Other information:

The following point data are available in paper form:

Dry hydrant locations (scale = 1:24,000; contact Melissa Franklin, Soil & Water Conservation District (716) 786-5070;
physical landmarks (airports, hospitals, parks, prisons, etc. (contact Barbara Shilling, Planning Department (716) 786-8846;
stream classifications (contact Greg McKurth, Soil & Water Conservation District (716) 786-5070;
transportation (locations of stop and yield signs; contact Office of Emergency Services (716) 786-8867.

Table 2. Water-resources data categories, and their sources and scale, in participating western New York counties (continued)**Yates County**

Primary GIS contact -Richard Brown, Planning Department (315) 536-5153

Primary GIS software - ARC/INFO, ArcView

| Database category | Contact | Source scale |
|----------------------------------|---|-----------------|
| Aerial photographs | ^a Planning Dept., Richard Brown (315) 536-5153 | 1:1,000 |
| Agricultural districts | “ | 1:24,000 |
| County &/or municipal boundaries | “ | 1:63,360 |
| Geology | “ | -- |
| Hazardous waste sites | -- | -- |
| Hydrography &/or floodplains | Planning Dept., Richard Brown (315) 536-5153 | 1:24,000 |
| Land use | “* | 1:1,000 |
| Roads, rail lines, &/or trails | “ | 1:24,000; other |
| School districts | “ | -- |
| Soils | “ | 1:24,000 |
| Tax parcels | “ | 1:2,400:1:4,800 |
| Topography | “ ^b | 1:24,000 |
| Water & sewer lines | “ | 1:24,000 |
| Watershed boundaries | “ | 1:24,000 |
| Wetlands | “ | -- |
| Zoning maps | “ | -- |

^a 1985 survey.^b Contour interval is 10 feet.

Other information: The following digital information on the Keuka Lake watershed is also available (contact Richard Brown, Planning Department (315) 536-5153): land use from aerial photography (1990 survey; scale = 1:1,000); pollution sources (landfill, salt storage, SPEDES, spills, etc.; scale = 1:24,000); water quality (scale = 1:24,000).

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (Glossary of terms on p. 38)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|---|--|---|-------------------|-----------------------|--|------------------------|--|
| Agriculture Agricultural district boundaries. | New York State Department of Agriculture & Markets Cornell Institute for Resource Information Systems | Bob Summers (518) 457-2713 http://www.agmkt.state.ny.us/ Susan Hoskins (607) 255-6520 http://www.cfe.cornell.edu/ciris/default.html | digital/ paper | public | 1:250,000 | PC | ARC/INFO |
| Biodiversity inventory Rare & endangered species & habitats. | New York State Natural Heritage Program | Information Services (518) 783-3932 http://www.heritage.tnc.org/nhp/us/ny/ | digital/ paper | public/ restricted | 1:24,000 | PC Unix | ARC/INFO ArcView |
| Climatological data Current and historical weather records and summaries. | National Oceanic and Atmospheric Administration | (704) 271-4800, questions@ncdc@noaa.gov http://www.ncdc.noaa.gov/ncdc.html | digital | public | variable | variable | ASCII |
| | State Climatologist | Keith Eggleston (607) 255-1749, KLE1@cornell.edu http://met-www.cit.cornell.edu | digital | public | variable | VAX Unix | ASCII binary |
| Compilation of GIS databases in nine Finger Lakes counties | Genesee/Finger Lakes Regional Planning Council | David Zorn (716) 442-3770 dzorn@frontiernet.net http://www.gflrpc.org/gisdata.htm | digital/ paper | public/ restricted | variable | variable | ARC/INFO ArcView Atlas GIS |
| Congressional Districts | U.S. Geological Survey | http://nsdi.usgs.gov/nsdi/index.html | digital | public | >1:100,000 | variable | ASCII |
| Digital Orthophoto Quadrangles Partial New York State coverage. | New York State Department of Environmental Conservation | Larry Alber (518) 457-3143 http://www.dec.state.ny.us | digital | public | 1:24,000 | variable | ARC/INFO |
| Digital Elevation Models Partial New York State coverage. | U.S. Geological Survey | (800) USA-MAPS http://mapping.usgs.gov/nsdi/ http://mcmcweb.er.usgs.gov/status/mac/ny/index.html http://edcwww.cr.usgs.gov/webglis/ | digital | public | DOQs: 1:12,000 DEM _s : 7.5'; 1:100,000 DLG _s : 7.5'; 1:100,000 DRG _s : 1° x 1° | variable | DOQ _s : binary images DEM _s : ASCII DLG _s : ASCII DRG _s : TIFF |
| Digital Line Graphs Partial New York State coverage (cultural, hydrography, hypsography, transportation, vegetation). | | | | | | | |
| Digital Raster Graphics Partial New York State coverage. | | | | | | | |
| Economic Business, employment & labor. | New York State Data Center | Bob Scardania (518) 474-1141 http://205.232.252.23/nysdc/ECONOMIC.html | digital | public | variable | PC | ArcView Altas GIS |
| | New York State Department of Labor | Todd Nelson (518) 457-1317 http://www.labor.state.ny.us | digital | public/ restricted | variable | PC | ArcView Altas GIS |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|--|---|--|-------------------|-----------------------|------------------------------------|-------------------------|-------------------------------------|
| Emergency Dose-assessment models, fires, floods, historical seismicity, hurricanes, nuclear-plant evacuation routes, rain gages, tornadoes, toxic-waste inventories, weather stations. | New York State Emergency Management Office | Robert Simpson (518) 457-9927 http://www.nysemo.state.ny.us/ | paper/ digital | public | 1:24,000 1:100,000 1:250,000 | variable | ARC/INFO |
| | New York Dept. of State, Fire Prevention & Control | Frederick Richards (518) 474-6746 http://www.dos.state.ny.us/fire/firewww.html | digital | public/ restricted | -- | IBM | ASCII |
| Flood Q3 flood data. | Federal Emergency Management Agency | Map Service Center (800) 358-9616 http://www.fema.gov/msc/q3flooda.htm | digital | public | 7.5' | Unix | ARC/INFO MapInfo DLG, DRG |
| Forests Fire-effects information system, forest inventory and research, pest conditions, etc. | USDA Forest Service | Tom Frieswyk (610) 975-4075 http://www.fs.fed.us/database/ | digital/ paper | public/ restricted | variable | PC Unix | ARC/INFO ER MAPPER |
| | U.S. Environmental Protection Agency | David L. Evans (601) 324-1611 http://www.epa.gov/docs/grd/forest_inventory/ | digital | public | variable | variable | ARC/INFO GIF |
| Geographical reference data Locations & records for meteorological stations; reservoir & stream gages. | U.S. Geological Survey GCIP Reference Data Set | ahrea@csdokol.cr.usgs.gov (405) 843-7570 http://nsdi.usgs.gov/nsdi/wais/water/gcip.HTML | digital | public | variable | variable | DLG ARC/INFO ASCII |
| Geology Bedrock, faults, glacial, & minerals | New York State Geological Survey | Robert Fakundiny (518) 474-5816 http://www.nysm.nysed.gov/geology.html | digital/ paper | public | 1:24,000 1:250,000 | Unix PC | ARC/INFO other |
| | New York State Museum | nysmweb@mail.nysed.gov http://www.nysm.nysed.gov/datasets.html http://www.nysm.nysed.gov/research.html | digital/ paper | public | 1:24,000 1:250,000 | PC | ARC/INFO Microsoft Powerpoint |
| | Southern Tier Central Regional Planning & Development Board | Dara Fell (607) 962-5092 http://www.stcrpdb.dst.ny.us/ | digital/ paper | public | variable | Unix Win- dows NT | ArcView ARC/INFO |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|--|--|---|-------------------|-----------------------|--------------------------|------------------------|--------------------------------|
| Great Lakes | | | | | | | |
| Commercial fishing database, research vessel data, lake surveys. | Great Lakes Science Center, U.S. Geological Survey, Biological Research Division | Scott Nelson (313) 994-3331 x243 scott_nelson@usgs.gov http://www.glsc.usgs.gov/ | digital | public | lat./long. | PC | ARC/INFO |
| Areas of concern for beneficial water use. | U.S. Environmental Protection Agency | USEPAnsdi@epamail.epa.gov http://nsdi.epa.gov/nsdi/projects/r5_aochuc.html http://nsdi.epa.gov/nsdi/projects/r5_grlks2mhtml | digital | public | 1:250,000 | variable | ArcExport |
| Coastal areas & shorelines. | New York State Department of State | Thomas Hart (518) 473-2465 http://www.dos.state.ny.us/ | digital/ paper | public | -- | -- | -- |
| Lakes Ontario & Erie - ice cover, shoreline recession rates, water levels, etc. | U.S. Army Corps of Engineers | Caroline Forbes (716) 879-4104 http://hank.ncb.usace.army.mil/GreatLakes/Great-Lakes.html | digital | public | variable | -- | Web access |
| Health data | | | | | | | |
| County environmental health data, health profiles, hospital locations, vital statistics. | New York State Department of Health | Thomas Talbot (518) 458-6212 http://www.health.state.ny.us | digital | public/ restricted | variable | PC | MapInfo |
| Historic landmarks | | | | | | | |
| Archeological and historical sites. | New York State Parks, Recreation & Historic Preservation | Robert Engler, Raymond Smith, Cynthia Blakemore (518) 237-8643, http://www.nysparks.state.ny.us | digital/ paper | public/ restricted | 1:24,000 | PC | MapInfo |
| | National Register Information System | John Byrne (202) 343-9543 http://www.nr.nps.gov | digital | public | 1:24,000 UTM | HP3000 | dBASE Atlas GIS |
| Hydrology | | | | | | | |
| Lakes, rivers, streams and wetlands >12 hectares; watershed boundaries. | New York State Department of Environmental Conservation | Howard Pike (518) 457-1617 http://www.dec.state.ny.us | digital | public | 1:24,000 | variable | ARC/INFO |
| Hydrologic Unit maps, stream gages. | U.S. Geological Survey | Ken Lanfear (703) 648-6852, lanfear@usgs.gov http://water.usgs.gov/public/GIS/huc.html | digital | public | 1:250,000 1:2,000,000 | AViiON Unix | ARC/INFO |
| Genesee River Basin information. | U.S. Army Corps of Engineers | Rich Thomas (716) 879-4333 http://hank.ncb.usace.army.mil/Genesee/GeneseeRiver.html | digital | public | variable | Unix | Web access |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|--|--|--|-------------------|-----------------------|--------------------------------------|-------------------------|--|
| Land use and land cover Information on urban or built-up land, agricultural land, rangeland, forest land, water, and wetlands. | U.S. Geological Survey | http://edcwww.cr.usgs.gov/glis/hyper/guide/1_250_lulcfig/states/NY.html | digital | public | 1:24,000 1:250,000 1:2,000,000 | PC Unix | CTG DLG GIRAS Landsat SPOT |
| | U.S. Fish and Wildlife Service | Deb Southworth (303) 275-2320 http://www.fws.gov/data/gishome.html | digital | public/ restricted | | | |
| Landfills and Resource Conservation and Recovery Act sites Locations and characteristics of waste-disposal sites. | New York State Department of Environmental Conservation - Solid Waste Division | Gerald Wagner (518) 457-2051, http://www.dec.state.ny.us/ | digital | public | UTM coordinates | PC | FoxPro |
| | U.S. Geological Survey | Ken Lanfear (703) 648-6852 http://water.usgs.gov/nsdi/usgswrd/landfill.html http://nsdi.usgs.gov/nsdi/wais/water/rcra.HTML | digital | public | 1:2,000,000 | Unix | ARC/INFO |
| Military | New York State Division of Military & Naval Affairs | http://www.dmna.state.ny.us/ | -- | restricted | -- | -- | -- |
| Miscellaneous Locations of: active and closed municipal-waste sites; air-permit data; locations of ground-water wells, public water supplies; & wastewater discharges; radon measurements; toxic-chemical release inventory; water and gas lines. Aerial photos, base maps, biological resource data, geologic data, GIS data for water resources, satellite images, etc. | New York State Department of Health | Thomas Talbot (518) 458-6212 http://www.health.state.ny.us/ | digital/ paper | public/ restricted | variable | variable | ARC/INFO other |
| | Southern Tier Central Regional Planning & Development Board | Dara Fell (607) 962-5092 http://www.stcrpdb.dst.ny.us/ | digital | public | variable | Unix Win- dows NT | ARC/INFO ArcView |
| | U.S. Geological Survey | http://nsdi.usgs.gov/nsdi/index.html | digital | public | variable | variable | ARC/INFO other |
| National Water Information System Locations of precipitation- & stream-gaging stations; wells; and associated data (discharge rates, water levels, water quality, etc.). | U.S. Geological Survey | Andy Cohen (518) 285-5638 acohen@usgs.gov http://ny.usgs.gov/htmls/pub/index.html | digital/ paper | public | 1:24,000 | Unix | ARC/INFO |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|---|--|---|----------------|-----------------------|--------------|------------------------|--------------------------------|
| Natural resources | | | | | | | |
| Land cover/use, cropping history, irrigation type & water source, streambank erosion, streams >1/8 mile wide, water bodies >40 acres in area, wetlands classification, etc. | Natural Resources Conservation Service | http://www.nhq.nrcs.usda.gov/MLH/nritest/nri_data.html | digital | public | variable | -- | Web access |
| Locations of mines, and oil & gas wells. | New York State Department of Environmental Conservation - Mineral Resources Division | Eric Shyer (518) 457-0100 http://www.dec.state.ny.us/website/dmn/data.html | digital | public/ restricted | lat./long. | Unix | MapInfo ArcInfo |
| Soil boring logs; other geospatial data. | U.S. Army Corps of Engineers | Paul Murawsik (716) 648-6094 http://corpsgeo1.usace.army.mil/CELRB/celrb.html | paper | public/ restricted | variable | Unix | JPEG, TIFF other |
| New York State GIS Clearinghouse | New York State Department of Education | Ann Getman (518) 486-1702 http://www.nysl.nysed.gov/gis/ | digital | public | variable | variable | variable |
| Center for Technology in the Environment | | http://www.ctg.albany.edu/gis/directory.html | | | | | |
| Statewide GIS Data Sharing Cooperative Participants & Inventories | | http://www.nysl.nysed.gov/gis/cooplist.htm | | | | | |
| New York Counties on the Web | New York State Association of Counties | http://www.state.ny.us/nysac/coweblnk.html | -- | public | -- | -- | -- |
| New York State Department of Environmental Conservation | New York State Department of Environmental Conservation | Larry Alber (518) 457-3143 lalbar@gw.dec.state.ny.us http://www.dec.state.ny.us/ | digital | public/ restricted | variable | Unix PC | ARC/INFO ArcView |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|--|--|---|-------------------|-----------------------|--------------------------|------------------------|--------------------------------------|
| Parks Archeological and national register sites, maps, natural resource inventories, park boundaries, snowmobile trails. | New York State Office of Parks, Recreation & Historic Preservation | John Fox (518) 486-2098 http://www.nysparks.state.ny.us/info/ | digital | public/ restricted | 1:24,000 | -- | ARC/INFO |
| | National Park Service | Nigel Shaw (617) 223-5065 http://www.nps.gov/hfc/publications/index.htm http://hans.nrrc.ncsu.edu/npsgis/ | digital/ paper | public | variable | PC/ Unix | ARC/INFO ArcView Adobe Acrobat |
| Police Landmarks, roads, water features, etc. | New York State Police | Jim Deconno (518) 485-8307 http://www.troopers.state.ny.us/ | digital/ paper | public/ restricted | -- | -- | ARC/INFO |
| Political boundaries Counties, municipalities, towns. | New York State Office of Real Property Services | Ross Testa (518) 486-4518 http://www.orps.state.ny.us/ | digital/ paper | public | 1:24,000 | Unix | ARC/INFO |
| Population Census blocks (1990). | Census Bureau | http://www.census.gov/geo/www/tiger | digital | public | 1:100,000 | VAX | ARC/INFO Tiger files |
| | New York State Department of Health | Thomas Talbot (518) 458-6212 http://www.health.state.ny.us/ | digital | public | 1:24,000 | PC | ARC/INFO MapInfo Atlas GIS |
| | SEDAC | http://plue.sedac.ciesin.org/plue/ | digital | public | 1:100,000 | variable | |
| Remote imagery Satellite observations of the Earth's surface. | New York State Department of State | Thomas Hart (518) 474-6000 http://www.dos.state.ny.us/ | digital | public | 1:24,000 other | variable | Landsat RADARSAT |
| Sand and gravel aquifers Glaciated northeastern U.S. | U.S. Geological Survey | Al Randall, Andy Cohen; (518) 285-5628 http://ny.usgs.gov/htmls/pub/index.html | digital | public on release | variable | Unix | ARC/INFO |
| School districts Boundaries of school districts for tax and attendance purposes.. | New York State Office of Real Property Services | William Godell (518) 486-4513 bill.godell@orps.state.ny.us http://www.orps.state.ny.us/ | digital | public/ restricted | 1:600 1:4800 other | Sun | ARC/INFO ArcView |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|--|---|--|----------------|-----------------------|-----------------------|-------------------------|--------------------------------|
| Soils STATSGO Soil maps completed, in progress, or planned for the following counties: Chautauqua, Clinton, Dutchess, Erie, Genesee, Madison, Monroe, Oneida, Otsego, Putnam, Rennselaer, Rockland, Saratoga, Seneca, St. Lawrence, & Suffolk. Also Catskill & Onondaga & Skaneateles Lakes watersheds. | Natural Resources Conservation Service | State Soil Scientist (315) 423 5510 http://www.ftw.nrcs.usda.gov/stat_data.html | digital | public | 1:250,000 | variable | ARC/INFO ASCII |
| | Cornell University under contract with NRCS | Steve Indrick (315) 477-6504 | digital | public | 1:24,000 | Sun Unix | ARC/INFO GRASS |
| Surficial aquifers Primary and sole source. | U.S. Geological Survey | Andy Cohen (518) 285-5638 http://ny.usgs.gov/htmls/pub/index.html | digital | public/ restricted | 1:24,000 1:250,000 | Unix PC | ARC/INFO ArcView |
| | U.S. Environmental Protection Agency | Robert Simpson (212) 637-3335 http://www.epa.gov/region02/gis/atlas/aquifers.htm | digital | public | 1:100,000 | Win- dows NT | ARC/INFO |
| Tax maps for various cities Boundaries of tax districts. | Southern Tier Central Regional Planning & Development Board | Dara Fell (607) 962-5092 http://www.stcrpdb.dst.ny.us/ | digital | public | variable | Unix Win- dows NT | ARC/INFO ArcView |
| Telephone directory Telephone numbers of state agencies | New York State Office of General Services | David Runyon (518) 486-9200 http://www.ogs.state.ny.us/telecom/org/default.htm | digital | public | -- | -- | -- |
| Thematic mapping Topical maps on a variety of subjects. | U.S. Environmental Protection Agency Region 2 | Harvey Simon (212) 637-3594 http://www.epa.gov/mrlc | digital | public | 1:100,000 | Win- dows NT | ARC/INFO |
| | New York State Department of State | Thomas Hart (518) 474-6000 http://www.dos.state.ny.us/ | digital | restricted | 25-meter pix- els | PC | MapInfo |
| Tourism Information on recreational resources. | New York State Travel and Tourism | (800) CALL-NYS http://www.iloveny.state.ny.us/ | paper | public | -- | -- | -- |
| Database description/application | Agency | Contact phone/email/Web site | Data format | Use policy | Map base/ scale | Hard- ware | Software/ file type |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|---|---|--|----------------------|-------------------------------------|---|------------------------|--------------------------------|
| Toxic release inventory Compilation of toxic wastes released into the environment. | U.S. Environmental Protection Agency | Loren Hall (202) 260-3931 http://earth1.epa.gov/TRI_cover93/MetaRecord.html | digital | public | -- | -- | -- |
| Hazardous substance release/health effects database Types and effects of hazardous materials released into the environment. | HazDat Agency for Toxic Substances & Disease Registry | Sandra Susten (404) 639-0700, director Bill Henriques (404) 639-6088, GIS manager http://atsdr1.atsdr.cdc.gov:8080/hazdat.html | digital | public | lat./long. | Unix | ARC/INFO |
| New York State 1995 toxic release inventory Toxic materials released in New York State. | New York State Department of Environmental Conservation | Pollution Prevention Unit (518) 457-2553 http://www.dec.state.ny.us/website/pollution/p2tri.html | digital | public | -- | -- | ASCII dbf |
| Transportation Airports, bridges, names, railroads, remote imagery, roads, survey monuments, maps, etc. | New York State Transportation Department | Map Information Unit (518) 457-3555 http://dot.state.us/magis/magis.html http://www.nysl.nysed.gov/gis/inventories/dot.htm http://www.bts.gov/gis/state/tx_visit.html#new | digital/ paper | public/ restricted | 1:1,200 1:24,000 1:250,000 other | Unix | ARC/INFO TIFF other |
| Tug Hill Commission Information for parts of Jefferson, Lewis, Oneida, and Oswego Counties. | Tug Hill Commission | (315) 785-2380/2570, tughill@tughill.org http://www.imcnet.net/TugHill/tughill.html | digital/ paper | public | variable | -- | -- |
| U.S. Environmental Protection Agency Air quality; biological, cultural & water resources; control layers; image & CAD data; regulatory & terrain features; transportation; utilities. | U.S. Environmental Protection Agency Region 2 | Harvey Simon (212) 637-3594 http://www.epa.gov.region02/gis/dataset/htm | digital | public | 1:24,000 other | variable | ARC/INFO ArcView |
| Utilities gas pipelines, gas & electric franchise data, utility infrastructure, cable TV, water companies, telecommunications | New York State Public Service Commission New York Power Pool | Linda Demers (518) 474-5364, imd@eps.state.ny.us http://www.dps.state.ny.us/index.html Steve Corey (518) 356-6134 http://www.nypowerpool.com/ | digital paper | public/ restricted public | 1:24,000 other 1:2,000,000 | Unix PC -- | ARC/INFO ArcView -- |
| Watershed boundaries Major watersheds in Lake Ontario basin; subwatersheds delineated for ~50% of basin. | U.S. Geological Survey | Andy Cohen (518) 285-5638 http://ny.usgs.gov/htmls/pub/index.html | digital/ paper | restricted | 1:24,000 | Unix | ARC/INFO |

Table 3. Federal and State sources of water-resources Information for participating western New York counties, August 1998 (continued)

| Database description or application | Agency | Contact phone - email - WWW site | Data format | Use policy | Source scale | Hard- ware or OS | Type of software or file |
|---|---|--|-------------------|-----------------------|--------------|-------------------------|--------------------------------|
| Water quality Ambient & effluent water quality, intensive surveys, waterway planimetric data. | U.S. Environmental Protection Agency Region 2 | Bill Justis (210) 637-3334 http://www.epa.gov.region02/gis/atlas/storet.htm | digital | public/ restricted | variable | variable | ARC/INFO ArcView |
| Wetlands Locations and types of wetlands. | New York State Department of Environmental Conservation | Wayne Richter (518) 783-5733 http://www.dec.state.ny.us/ | digital/ paper | restricted | 1:24,000 | SPARC | ARC/INFO |
| | U.S. Fish & Wildlife Service National Wetlands Inventory | Chief Cartographer (602) 555-1212 http://www.nwi.fws.gov/ | digital | public/ restricted | 1:24,000 | variable | ARC, DLG; dxf, GRASS |
| WWW links General GIS information | National Center for Geographic Information & Analysis | http://www.ncgia.ucsb.edu/ | -- | public | -- | -- | -- |
| | National States Geographic Information Council | http://www.geo.drake.edu/nsgic/ | -- | public | -- | -- | -- |
| | Environmental Systems Research Institute | http://www.esri.com/base/common/ jumpstation/jumpstation.html | -- | public | -- | -- | -- |
| | Remote sensing and GIS resources | http://www.gis.umn.edu/rsgisinfo/rsgis.html | -- | public | -- | -- | -- |
| | GIS links | http://www.gisnet.com/gis/ores/gis/index.html | -- | public | -- | -- | -- |
| | Yahoo GIS links | http://www.yahoo.com/Science/Geography/ Geographic_Information_Systems_GIS/ | -- | public | -- | -- | -- |
| | Geodata Information Services | http://www.cgrrer.uiowa.edu/servers/ servers_geodata.html | -- | public | -- | -- | -- |
| Zoning for various cities in Southern Tier Zoning boundaries and types | Southern Tier Central Regional Planning & Development Board | Dara Fell (607) 962-5092 http://www.stcrpdb.dst.ny.us/ | digital | public | variable | Unix Win- dows NT | ARC/INFO ArcView |

Glossary of Terms Used in Table 3

Adobe Acrobat - A program for publishing, displaying and downloading information on the World Wide Web.

ARC/INFO, ArcView - Computer programs for compiling, displaying and manipulating geospatial information. Published by Environmental Systems Research, Inc., Redlands, Calif.

ASCII - American Standard Code for Information Interchange. A code in which each alphanumeric character is represented as a number from 0 to 127, translated into a 7-bit binary code for the computer.

Atlas GIS - A computer program for compiling, displaying and manipulating geospatial information. Published by Environmental Systems Research, Inc., Redlands, Calif.

AViiON - a minicomputer manufactured by the Data General Corporation, Westborough, Mass.

binary - data coded in ones and zeros.

CTG - Composite Theme Grid format. A grid-cell oriented format for displaying land use-land cover information.

dBase - a database program for personal computers. Published by INPRISE Corporation, Scotts Valley, Calif.

dbf - Database file.

DEM - Digital Elevation Model. A digital file consisting of terrain elevations at regularly spaced horizontal intervals.

DLG - Digital Line Graphs. Digital representations by points, lines and areas of planimetric information.

DOQ - Digital Orthophotography Quadrangles. Scanned aerial photographs corrected for both camera and elevation variations and registered to a geographic basemap.

DRG - Digital Raster Graphics. A scanned image of a U.S. Geological Survey standard series topographic map.

dxg - Drawing Interchange File Format. A format for vector graphics.

ER Mapper - Image processing software published by Earth Resources Mapping, San Diego, Calif.

FoxPro - a database program for personal computers. Published by Microsoft Corporation, Redmond, Wash.

GIF - Graphics Interchange Format. A format for bitmap graphics.

GIRAS - Geographic Information Retrieval Analysis System. A system for storing and processing land use-land cover information.

GRASS - Geographic Resources Analysis Support System. A public-domain raster- and vector-based GIS for image-processing and graphics production.

JPEG - Joint Photography Experts Group. A format for bitmap graphics.

Landsat - A series of satellites developed by the U.S. that acquire high-resolution multispectral data of the earth's surface.

lat./long. - latitude/longitude.

MapInfo - A computer program for displaying geospatial information. Published by MapInfo Corporation, Troy, N.Y.

Microsoft Powerpoint - A computer program for creating presentation graphics. Published by the Microsoft Corporation, Redmond, Wash.

OS - computer operating system.

PC - personal computer.

RADARSAT - a Canadian-led project for obtaining detailed images of the earth through cloud cover.

SPOT - A series of satellites developed by France, Belgium and Sweden for gathering multispectral data on land use and land cover.

TIFF - Tagged Image File Format. A format for bitmap graphics.

Tiger files - Data from the U.S. Census Bureau Tiger that contain very detailed street and address information, which can be used to assign geographic locations to point information.

Unix - A computer operating system.

UTM - Universal Transverse Mercator. A cylindrical map projection that is the basis for the State Plane Coordinate System used in New York State.

VAX - A minicomputer manufactured by the Digital Equipment Corporation, Maynard, Mass.

Windows NT - Windows New Technology. A computer operating system published by the Microsoft Corporation, Redmond, Wash.