

NATURAL AND PHYSICAL FEATURES

Water Bodies and Wetlands

Wetlands

Wetlands play an integral role in the natural environment. Wetlands have highly absorptive properties that reduce the impact of flooding and water quality degradation from surface water run-off. They filter out particulate matter including various industrial and agricultural pollutants. From an ecological standpoint, freshwater wetlands can provide a wide range of habitat areas that increase biological diversity for plants, insects, fish, and terrestrial wildlife. Development practices should be minimized around critical wetland areas as defined by the New York State Department of Environmental Conservation (DEC).

Map 1 highlights DEC regulated wetlands in the Town of Jerusalem. The DEC regulates wetlands that are 12.4 acres or greater. Additional federally regulated wetlands not categorized by the DEC may exist in the town. In order to avoid costly fines and penalties, developers should contact the DEC Regional Office 8 for permitting information if any wetlands exist on a proposed site.

Watersheds and Waterbodies

A watershed is defined as the area of land that drains into a particular body of water. The Town of Jerusalem is primarily in the Finger Lakes – Lake Ontario watershed. Within that watershed, most of the town’s waterbodies flow into Keuka Lake. The southwestern corner of Jerusalem drains south into the Cohocton River and eventually into the Susquehanna River, making it one of the northernmost reaches of the Chesapeake Bay watershed.

The New York State Department of Environmental Conservation (DEC) classifies all waterbodies according to their “best use”, a designation that takes into account such factors as stream flow, water quality, and desired uses of the water and its bordering lands. DEC programs are designed to achieve and maintain the best use for each of these waterbodies. The following are the major waterbodies and their best use classification (see Map 1).

- Keuka Lake (AA) – suitable for drinking, swimming, fish propagation, and fishing. DEC studies conclude that Keuka Lake's water is very clear and well oxygenated at all depths, enabling fish to occupy both shallow and deep water habitats. Rooted aquatic vegetation is confined mainly to the northernmost ends of the lake's two arms, and to the lake's south end. There are also weedbeds around prominent points and deltas.
- Sugar Creek (C) – suitable for fish propagation and fishing. Sugar Creek flows

- south through the Guyanoga Valley into the west branch of Keuka Lake.
- Nettle Valley Creek (C) - suitable for fish propagation and fishing. Nettle Valley Creek flows north through the hamlet of Friend and into Ontario County and eventually Lake Ontario.
- Fivemile Creek (C) - suitable for fish propagation and fishing. Fivemile Creek, located in the southwest corner of Jerusalem, drains the Jubertown swamp and flows south into Steuben County and eventually Chesapeake Bay.

Floodplains

Areas that are prone to flooding due to water volumes exceeding a natural water body's capacity are known as floodplains. The most critical floodplain to consider is the 100-year floodplain, which is typically impacted by a flooding event once every 100 years. Development in these areas should be minimized and may be subject to NYS Department of Environmental Conservation review and permitting. In addition, the town should cooperate with Yates County in any flood mitigation planning to minimize the potential for property damage and loss of life due to future flooding.

Topography

The unique terrain of the Finger Lakes region is a result of thousands of years of glacial activity in the area. The glaciers carved out valleys, streams and rivers and left depressions that would later become the Finger Lakes. The region has long reaped the benefit of these natural processes in the form of prime agricultural land, scenic vistas, recreation, and tourism.

Jerusalem enjoys a diverse landscape including several gullies and valleys, deep ravines running down to Keuka Lake and Guyanoga Valley, rolling hills used primarily as farm land, and steep slopes along the edges of the lake (see Map 2). Bluff Point, which gives the lake its distinct "Y" shape, is one of the more dramatic lakeside hills in all the Finger Lakes. It provides scenic vistas from many of its roadways and cottages along the shore.

This unique topography is completely interwoven with the town's heritage, image, character, and overall sense of place. Therefore, it is critical to recognize the fragility of such a landscape and take measures to protect it. The measure of the slope of the land generally indicates its suitability for various types of development. Areas with very steep slopes are often limited as to the quantity and types of development that can be supported.

Steep slopes are found throughout the town, with the following being the most significant sites:

- the majority of lands on Bluff Point
- the hills adjacent to NY 54A between Penn Yan and the State Park
- the hills on both sides of Guyanoga Valley
- the ravines leading to Keuka Lake and Guyanoga Valley

Overdevelopment of these steep slopes can lead to increased erosion, siltation, excessive removal of vegetation and soil, flooding, soil slippage, water runoff, and destruction of unique land forms and scenic vistas. All of this threatens the water quality of Keuka Lake and other waterbodies in the area. Strategic land use planning and design is integral to maximizing the optimal use of this natural terrain and keeping the ridgelines and scenic vistas intact.

Soils

The types of soil present in a community can have a significant impact on development potential. Highly erodable soils and hydric soils require fill or advanced engineering methods to ensure stability. According to the USDA Natural Resources Conservation Service, hydric soils are prone to, and formed by, heavy water saturation and flooding, while highly erodable soils have a higher potential for erosion due to certain soil characteristics.

According to the Yates County Soil and Water Conservation District, the soil types in Jerusalem are highly diverse. Map 3 shows the variety of soils and their location. Maps 4, 5 and 6 highlight those soils that are classified as highly erodable, hydric, or prime agricultural land. Highly erodable soils tend to be located along the steeper slopes, while prime agricultural land is often found in the valleys. Development in these sensitive areas should be minimized in order to preserve agricultural resources and reduce erosion, flooding, and even property damage.

Public Sewer, Water and Natural Gas

Portions of the Town of Jerusalem are within the Keuka Park Water District and the Keuka Park Sewer District (see Maps 7 and 8). Properties within the water district receive their water from Keuka Lake via the Penn Yan Filter Plant on NY 54A, just south of Penn Yan.

The filter plant takes water from the lake, filters it, then pumps it up to the water tower on the west side of NY 54A. From there it is distributed to the Keuka Park Water District, as well as the Village of Penn Yan and other areas outside of Jerusalem. According to the Town Engineer the plant has a permitted peak production of 3,000,000 gallons per day. In 2003, its peak production day was 1,197,000 gallons, about 40% of its capacity.

Water pressure and gravity provide sufficient force to send water from the water tower to the majority of the Keuka Park Water District. The only exception is a

portion of Keuka Lake State Park, which requires a pump station to serve the highest elevations of the park.

Jerusalem has a contract with Penn Yan for this water service with a maximum daily allowance of 506,220 gallons. The town used an average of 165,000 gallons per day in 2004, which is about 33% of the maximum allowance. The maximum used on any day was approximately 250,000 gallons.

The town also has a contract with Penn Yan for a maximum of 265,000 gallons per day of sewer usage. On average, the town only uses about 104,000 gallons per day, which is 39% of the maximum allowance. The sewer system south of Keuka Park consists of individual grinder pumps. The waste is pumped north into the Keuka Park Sewage Pump Station, which has a capacity of 375 gallons per minute. It is then pumped north to the Indian Pines Pump station, which has a capacity of 400 gallons per minute. Finally, the waste is pumped into Penn Yan to a treatment facility.

A natural gas main serviced by NYSEG is available to residents along East Bluff Drive from Keuka Park south almost to Brown Hill Road. Natural gas is also available along NY 54A north of Keuka Park and on County Rd 25 west of Keuka Park (see Map 9).

Transportation System

Transportation facilities in the Town of Jerusalem primarily serve the automobile, the most common mode of transportation. Streets and roads, regardless of their design and pattern, are generally classified according to administrative authority and function, that is, who owns and maintains them and what type of uses they are designed to handle. These jurisdictional levels include state, county, local, and private roads (see Map 10).

There are only two state highways in Jerusalem, NY54A and NY364, totaling 8.9 miles in length. The section of NY364 that passes through the town's northeast corner is only 0.2 miles long. NY54A, which connects Penn Yan to Branchport and then heads south into Steuben County, is 8.7 miles long.

According to Region 6 of the New York State Department of Transportation (DOT), while not the opinion of the Steering Committee, the state highways in Jerusalem have Surface Scores ranging between 7 and 9 out of 10, meaning they are all in good to excellent condition. The only scheduled improvement to state highways in the near future is a resurfacing project on NY54A. The work will be done on the southernmost two miles of the highway, which is the section that runs north from the Yates-Steuben County line to Branchport, then east for about 0.4 miles.

Route #	Section Length (miles)	Beginning Description	Ending Description	AADT
54A	1.52	Steuben County line	CR 32 Branchport	1,553
54A	3.26	CR 32 Branchport	CR 25 to Keuka Park	2,826
54A	0.88	CR 25 to Keuka Park	CR 21 North Jet	3,425
54A	3.41	CR 21 North Jct	NY 14A Penn Yan	4,826
364	0.20	NY 14A Penn Yan	Benton Town line	3,929

Figure 15: Source, NYSDOT

The DOT also maintains traffic counts for each section of state highway in the state. Figure 16 shows the Average Annual Daily Traffic (AADT) counts taken in 2003 for state highways in Jerusalem.

Below is a table showing an inventory of county roads in Jerusalem, as provided by the Yates County Highway Department. There are nine county roads, totaling 30.11 miles in length.

County Road #	Name	Length (miles)	Condition	Scheduled Improvements
21	West Lake Road	2.04	fair	
22	East Sherman Hollow Road	4.36	fair	Cold in place recycling and hot asphalt overlay (2005)
24	County House Road	6.37	fair-good	
25	Assembly/Central Ave	1.41	fair	
29	Guyanoga Road	5.21	fair	Major rehabilitation (2006)
31	Friend Road	2.98	fair	
32	Italy Hill Road	4.52	good	
33	Darby's Corners Road	1.55	fair	
35	Italy-Friend Road	1.67	good	

Figure 16: Source, Yates County Highway Department

According to the Town Highway Department, Jerusalem has 112 miles of town roads. 85.5 miles of those roads are paved while 26.5 miles are unpaved. Each year the highway department aims to resurface 18-19 miles of pavement and rebuild 2-3 miles of roads.

Yates County endures harsh weather in the winter and spring that, along with heavy traffic, takes a tremendous toll on the roadways. Weather conditions, combined with budget constraints, make it challenging for the Town Highway Department to perform all of the maintenance that they would like. Beyond standard improvements, the department intends to reconfigure the intersection of Armstrong Road and Belknap Hill Road in 2006, changing it to a more perpendicular alignment.

Additional Modes

In addition to roadways, the town utilizes the lake as a form of transportation, both for recreational and non-recreational trips. This mode of transportation is served by 2 boat launches, 5 marinas, and dozens of private docks along the shore. Map 10 shows the location of these facilities, in addition to the rest of the transportation network.

Other modes of transportation include bicycling and walking. These modes are used occasionally in all parts of the town, with higher concentrations in the hamlets and at Keuka College. Biking and walking play an important role in promoting healthy lifestyles and fostering a sense of community. These modes should have as much consideration as the automobile when considering network and design improvements to streets and roads. This approach, while not particularly common in many communities,

has been shown to have a tremendous effect on improving the quality of life for citizens by elevating human concerns above the needs of the automobile. In addition to bicycling and walking, the increasing Mennonite community within the town uses the roadways for horse & buggy travel.

Public Access to Keuka Lake

1) Keuka State Park - Located off Route 54A just east of Branchport. Concrete ramps are available with pumpout and parking for 50 cars and trailers. Winter launching is possible if icy conditions do not exist on a ramp. Operated by the Office of Parks, Recreation and Historic Preservation.

2) Sugar Creek Site - Located at the Route 54A bridge in Branchport, approximately 250 yards north of lake. A gravel ramp is available for cartop and small trailered boats. The site, operated by the DEC, has parking for several cars with trailers.

3) Indian Pines Park - Located off Route 54A on Old Pines Trail Road in the Village of Penn Yan. This site is maintained for ice fishing access but has no boat launching facilities. Operated by the Village of Penn Yan.

Agriculture

Agricultural Districts are a landowner-based initiative, made possible by New York State Agricultural and Markets Law. According to the law, the purpose of the districting is to encourage the continued use of farmland for agricultural production. The program is based on a combination of landowner incentives and protections, all of which are designed to forestall the conversion of farmland to non-agricultural uses.

Included in these benefits are preferential real property tax treatment (agricultural assessment and special benefit assessment), and protections against overly restrictive local laws, government funded acquisition or construction projects, and private nuisance suits involving agricultural practices. Over 60% of Jerusalem is within an Agricultural District (see Map 11).

Current Land Use

Land use plays a significant role in defining the pattern, appearance and form of a community. Poor land use planning and regulation can result in undesirable development patterns that negatively impact the town's quality of life. In the Town of Jerusalem, the dominant land uses are residential and agricultural. The town has expressed a desire to preserve this land pattern (see Map 12).

Residential land uses are located throughout the town, with the largest concentrations occurring along Keuka Lake, in the Village of Penn Yan, and in the hamlets of Branchport and Keuka Park. Agricultural uses cover a large portion of the rest of the

town, and include dairy, fruits, and vegetables. Some of the agricultural land is owned by Mennonites, or “plain” community. Because of this culture, there is a trend towards a larger number of small farms, as opposed to the national trend of consolidation. There are very few commercial or industrial properties in the town, the majority of which are found in the hamlet of Guyanoga and along the NY 54A corridor between Branchport and Penn Yan.

CODE	PROPERTY CLASS	# PARCELS	% OF TOTAL	ACREAGE	% OF TOTAL	ASSESSED LAND VALUE	% OF TOTAL	ASSESSED TOTAL VALUE	% OF TOTAL
100	Agricultural	253	7.73%	13513.70	37.29%	9,373,752	6.74%	17,410,552	6.44%
200	Residential	2193	66.98%	12906.35	35.62%	112,394,229	80.90%	222,789,285	82.41%
300	Vacant	479	14.63%	5560.39	15.35%	9,620,712	6.92%	10,382,892	3.84%
400	Commercial	35	1.07%	74.24	0.20%	826,800	0.59%	6,450,200	2.39%
500	Recreation and Entertainment	6	0.18%	68.25	0.19%	954,200	0.68%	1,731,000	0.64%
600	Community Service	28	0.86%	153.81	0.42%	1,674,800	1.20%	7,012,500	2.59%
700	Industrial	3	0.09%	33.59	0.09%	40,500	0.28%	40,500	0.01%
800	Public Service	7	0.21%	10.04	0.03%	784,700	0.55%	1,228,900	0.45%
900	Wild, Conservation, Forest	12	0.37%	1402.30	3.87%	3,243,021	2.32%	3,287,221	1.22%
0	Property Data Unavailable	258	7.88%	2512.90	6.93%	N/A	N/A	N/A	N/A
TOTAL		3274	100.00%	36235.57	100.00%	138,912,714	100.00%	270,333,050	100.00%

Figure 17: Source, Yates County Real Property Department, 2005

In all, there are 3,274 parcels representing approximately 35,000 acres in Jerusalem. The assessed land value of the town is \$138,912,714 and the total assessed value (including structures and improvements) is \$270,333,050.

OTHER RELEVANT INFORMATION RESOURCES

Existing Plans and Reports

The process of updating a Comprehensive Plan must include an examination of current and previous planning documents pertaining to the community in question. In this section we will provide a cursory overview of recent documents prepared for the Town and the Keuka Lake area.

Town of Jerusalem Comprehensive Master Plan, 1992

Major Plan Elements:

- Census Data – major Census Report findings:
 - ⇒ Increasing property values, primarily due to appreciation of lakefront real estate
 - ⇒ Major decrease in 15-24 age cohort
- Summary of Data Gathering - This section contained a chronology of the surveys, focus groups, idea sessions, and round table discussions that were held.
- Plan Goals – This section identified seven major goals:
 - ⇒ Protect natural resources
 - ⇒ Provide for well-planned residential growth
 - ⇒ Provide areas for commercial use
 - ⇒ Encourage/allow small business/cottage industry in non-commercial areas

- ⇒ Maintain/improve public services
- ⇒ Develop/promote recreation uses
- ⇒ Support agriculture with tax incentives
- Action Plan – This section summarized the specific initiatives intended to accomplish each of the above goals (a total of 20 specific actions).

Yates County Agricultural Development & Farmland Enhancement Plan, 2004

Major Plan Elements:

How Agriculture Contributes to Yates County

- Increases economic development, serves as a an economic multiplier
- Enhances support industries/services
- Requires considerably less investment in public services
- Creates rural character and limits sprawl
- Supports recreational land uses such as hunting

Characteristics of Yates County Agriculture

- 93% of county is farm or forest
- Primarily dairy, fruits, vegetables, cattle
- Dairy is predominantly owned by Mennonites or “plain” community
- Trend towards larger number of small farms, as opposed to national trend of consolidation, mainly due to influx of Mennonites

Land Development Trends

- From 1990-2000, the County’s population grew at a faster rate (8%) than the state average (5%)
- Increasing conflicts between residential and agricultural land uses
- No serious threat of suburban sprawl, but non-agricultural uses are still increasing

Some initiatives taken in other counties that the community believes are important to Yates County (Based on results of Agricultural Producer and Agriculture Business Surveys)

- Zoning ordinances that protect agriculture
- Additional right-to-farm protections
- More reasonable environmental regulations
- Help in negotiating lower utility rates
- Help in negotiating better pricing
- Increased local marketing of farm products
- Help in identifying/developing new markets

Listen to the Lake: A Keuka Lake Watershed Protection Summary (Keuka Lake Foundation), 1996

Major Report Elements:

Keuka Lake Looking Ahead Project

- Assessed the potential pollution sources and recommended a watershed management plan
- Concluded that water quality is very good but some evidence of pollution exists

- Stresses importance of preserving water quality as the lake is a drinking water source for about 20,000 people
- Stated that the protection of the lake requires the protection of tributaries and the watershed in general

Primary Goals

- Promote a cooperative and comprehensive approach to enhancing the quality of life in the watershed
- Protect and enhance the quality of Keuka Lake
- Encourage and improve management practices in the watershed
- Facilitate broad-based community involvement and support
- Provide an educational program to increase awareness of water quality issues and foster responsible use of watershed resources