

Natural Resources and Environmental Protection



GOALS:

- **Protect water quality and the natural flow of streams.**
- **Protect significant natural features such as woodlands, wetlands, stream corridors and wildlife habitats.**
- **Reduce the potential for groundwater contamination associated with failing septic systems.**



**Existing Plans,
Programs
and Regula-
tions**

Wetlands

Wetlands regulated by the State and Federal governments and located within the Town of Batavia are depicted on Map 6: Wetlands and Flood Zones. Mapped wetlands and adjacent areas within one hundred feet are subject to regulations preventing filling or other development. Determining the exact boundaries of regulated wetlands requires field investigation and verification by a qualified individual.

Flood Hazard Zones

Flood Hazard zones and floodways are usually located along watercourses (see Map 6.) Those areas within the one hundred year flood boundary could be expected to be flooded once in every hundred years, on average. The Town has adopted a local flood control ordinance that specifies, consistent with federal standards, the conditions under which development can occur in such areas. As a result, federal flood insurance is available to landowners within flood hazard zones.

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A total of 4,020.1 acres within the Town of Batavia are in the Tona-

Existing Conditions

Watercourses and Drainage Basins

Tonawanda Creek is the most prominent natural feature in the Town of Batavia. Tonawanda Creek flows through the Town from the southern boundary, through the City and westerly through the western part of the Town.

Other significant streams in the Town include Bowen Creek, a tributary of Tonawanda Creek located in the southwest portion of the Town, and Spring Creek, a tributary of Black Creek located east of Oak Orchard Road.

Most of the Town’s land area is within the Upper Tonawanda Creek watershed. The northeast portion of the Town drains into Black Creek and the southwest portion drains into Murder Creek. The table below summarizes the amount of land within each watershed.

	Acreage within Town	Percent of Total
Oak Orchard Creek	3,523.9	11.4%
Murder Creek	2,036.8	6.6%
Tonawanda and Ledge Creeks	1,554.5	5.0%
Upper Tonanwanda Creek	19,160.9	62.0%
Black Creek	4,617.6	14.9%
	30,893.7	

Watercourses and drainage basins are depicted in Map 5.

Wetlands

Wetlands provide unique habitat for wildlife and plants. They also assist with flood control by storing a large quantity of stormwater. The locations of wetlands mapped by State and Federal agencies are depicted in Map 6.

Groundwater

A primary aquifer is located south of the City of Batavia underneath Tonawanda Creek and surrounding land. A secondary unconfined aquifer is located west of the City. (See Map 7.) The presence of the aquifer renders the area particularly sensitive to pollution from failed septic systems, stormwater infiltration and other sources.

Topography

The topography of the Town of Batavia is generally flat to gently rolling. Significant features include many wetlands and the Tonawanda Creek floodplain. Topography is depicted in Map 8.

Soils

Soil Associations

Six Soil Associations designated by the USDA are found in the Town of Batavia. Information about soil associations is very general. The Soil Survey map and field testing is necessary to determine soil characteristics for particular sites.

Soils in the following associations are predominantly high-lime and developed from glacial till:

- Ontario-Hilton Association (1): Deep, well drained and moderately well drained soils having a medium-textured subsoil. These soils occupy areas in the north-central portion of the Town.
- Mohawk-Manheim association (2): Deep, well-drained to somewhat poorly drained soils having a medium-textured subsoil. These soils are located in the southwest portion of the Town.
- Benson-Honeoye Association (5): Shallow and moderately deep, well-drained soils having a medium-textured subsoil, over limestone bedrock.

The Remsen-Darien association (7) is dominated by medium-lime soils that developed from glacial till. Soils are typically deep, somewhat poorly drained with a fine textured and moderately fine textured subsoil. A narrow band of this association is located in the southeast of the Town.

Palmyra Association (9) is characterized by deep, well-drained, high-lime soils with a medium-textured subsoil over sand and gravel. These soils are located along the Tonawanda Creek valley and are derived from glacial outwash terraces and kames.

The Muck Association (11) is characterized by deep to shallow, very poorly drained organic soils that developed on organic material.

Map 9 depicts the major Soil Associations found in the Town of Batavia.

wanda Creek flood zone. 77% of the land is used for agriculture and 23% is used for commercial, industrial or higher density residential uses.

The Town has adopted a local flood control ordinance that specifies, consistent with federal standards, the conditions under which development can occur in such areas. As a result, federal flood insurance is available to landowners within flood hazard zones.

Since 1978, the National Flood Insurance Program has issued a total of 39 policies for properties in the Town of Batavia. A total of 32 property owners submitted claims during this period. Property in the Town is insured for a total of \$2,317,800. A total of \$26,848 has been paid to cover losses since 1978.

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Existing Plans and Programs

(Continued from page 31)

Genesee & Wyoming Counties Joint Flood Mitigation Plan – Town of Batavia (August 2003)

The 2003 Flood Mitigation Plan recommended several Action Steps to reduce the risk of and potential damage from flooding. Recommendations included:

- *Improve public awareness of potential flood hazards and provide information about evacuation routes and emergency shelter locations.*
- *Install an alarm system to warn residents of ice jamming at the Wortendyke Road bend in Tonawanda Creek.*
- *Eliminate industrial and commercial zoning districts within flood hazard areas, especially in areas of higher development pressure, such as along Route 5 west of the City.*
- *Clarify the designation and role of the Town's Flood Plain Administrator*
- *Address flooding problems along South Main Street Road*
- *Consider remapping the FIRM to include properties outside of designated flood hazard, such as the area south of South Main Street Rd., that have reported periodic flooding*
- *Purchase dwellings that flood repeatedly and relocate their residents, including those in the*

Soil Limitations

In many areas in the Town of Batavia, soil characteristics limit the potential for development. Map 10 identifies areas where the water table is persistently or seasonally high, areas where bedrock is found within 3 feet of the surface, areas with steep slopes, and areas with permeability. In areas with high water tables and slow permeability, the use of on-site septic systems is compromised. Shallow depth to bedrock limits heavy construction which requires deep footers. Steep slopes are prone to erosion.

Woodlands

Wooded areas in the Town of Batavia are primarily associated with wetlands. Map 11, an aerial photograph of the Town, depicts of woodlands.

Issues and Opportunities

Flood Hazards

Large areas of the Town of Batavia are susceptible to flooding. Both Tonawanda Creek and Little Tonawanda Creek flood periodically, typically during the late winter through early spring. Flooding causes damage to structures and requires residents to evacuate.

Following periods of heavy rains and/or melting ice or snow, the stream channel cannot carry all of the stormwater that drains to the creek. As a result, the creek overflows its relatively low banks. As the terrain surrounding Tonawanda Creek in the Town is relatively flat, flooding affects large areas of the Town. The most frequently flooded areas are those with the lowest elevations. Significant flooding occurred in 1989 and 1998.

The accumulation of woody debris and silt bars in the channel increases the risk and extent of flooding. Ice jams that develop in the sharp bends in the Tonawanda Creek channel near Wortendyke Road lead to flooded roads and damaged properties and structures.

Residents of low-lying areas near Tonawanda Creek are frequently evacuated when flooding is predicted. If flooding is expected, the E-911 dispatch center sends automated phone messages to warn residents in affected areas, such as residents of the Dreamland Trailer Park, Batavia Mobile Home Park and West Main Street Road, of imminent flood dangers and either require or recommend evacuation. Flood conditions in Attica generally indicate that flooding will occur in Batavia within 12 to 24 hours.

Structural damage caused by flooding results from:

- buildings swept off their foundations
- impacts from debris carried in fast-moving waters
- damage to building foundations due to erosion and undercutting of streambanks
- dry rot in flooded wood structures due to waterlogging

Damage has been reported to residences on South Main Street Road and in manufactured home parks on the south side of West Main Street Road (NYS Rt. 5).

The extent and frequency of flooding can be exacerbated by the removal of vegetation and by development which increases the amount of impervious surfaces in flood plain. For example, the construction of Value Plaza in the City of Batavia altered drainage patterns. The removal of vegetation along the Tonawanda Creek bank resulted in in-

Existing Plans and Programs (cont'd)

West End Trailer Park, houses along Dorman Road, and in the Dreamland Trailer Park and Batavia Mobile Home Park.

- Consider upgrading structures in the Dreamland Trailer Park and Batavia Mobile Home Park that have first floor elevations below the base flood elevation; site infrastructure to meet current floodplain development standards.
- Evaluate the feasibility of elevating structures along South Main Street.
- Place rip-rap along outside bend just north of Route 5 near Stegman Road to protect the road; and/or move roadway north, away from the Creek
- Monitor the condition of the Route 5 (Bushville) bridge and repair or replace as needed.

Mined Land Reclamation Law

The NYS Mined Land Reclamation Law requires mine operators to obtain a permit from NYSDEC. The permit establishes operating standards, requires a plan for reclamation of the land once mining is complete. The law requires mine operators to post a bond in an amount sufficient to ensure that the land is reclaimed..

creased flooding of manufactured home parks located near the Creek.

Debris reduces the capacity of the Creek channel to hold water. Trees fall into the Creek when erosion undercuts the stream bank, as a result of beaver activity and occasionally in conjunction with timber harvesting. Large woody debris at sharp bends in the channel has exacerbated flooding west of the City between Route 5 and South Main Street and in the “flats” south of the City. In addition, junk cars from the former auto salvage yard located adjacent to Tonawanda Creek on Route 5 have been found in the stream channel, reducing the creek’s capacity to hold water.

Siltation also reduces the capacity of the stream channel to carry water. **Sedimentation** results from erosion associated with agricultural processes, land development, road cuts, steep hillsides and timber harvesting. **Streambank erosion** is also accelerated where trees have been removed.

Gravel and soil in culverts reduce their capacity to carry flows during storm events. Clogged culverts have increased flooding along Route 98 and on County and Town roads.

A **dam** was installed in 1999 to retain water and prevent flooding of the commercial area along Lewiston Road, Park Road and Veterans Memorial Drive. An unnamed tributary flows southwest and crosses under Lewiston Road near Veterans Memorial Drive. Flooding problems occurred after the box culvert under Rt. 63 was replaced by a 54” arch pipe.

Meandering of the stream channel occurs where land has been cultivated to the top of the stream bank. Stream channel straightening has contributed to channel erosion and upstream sedimentation, particularly west of the City to Wortendyke Road. Straightening occurred between 1938 and the 1950s and may have exacerbated flooding problems along Stegman Road, Wortendyke Road, South Main Street and Dorman Road.

Ice-jamming due to sharp meanders near Wortendyke Road cause overbank flooding and shoreline erosion.

The following areas were identified in the 2003 Flood Hazard Mitigation Plan as priority sites:

- Batavia Mobile Home Park – Route 5: 20 dwellings, approximately ¼ mile west of the City line.
- Dreamland Trailer Park: Approximately 20 dwellings, located on the southside of West Main Street Road approximately one mile west of the City line.
- Residential development along South Main Street west of City to Wortendyke Road

- Tonawanda Creek from Dorman Road to City line
- Stegman Road
- Wortendyke Road bend in Tonawanda Creek channel
- Route 5 (Bushville) bridge over Tonawanda Creek
- Areas south of South Main Street
- Tonawanda Creek tributary near Route 63 and Veterans Memorial Drive

Map 6 depicts the location of significant flood hazards and summarizes the issues for each priority site.

Sedimentation and erosion

Sediments that are carried into streams reduce the capacity of the stream channels to carry water and increase the likelihood of flooding. Sedimentation also affects the clarity of the water and may compromise fish habitats. In addition, the sediments may contain contaminants that degrade the quality of water.

Erosion occurs naturally along streambanks as the water scours the banks along bends in the streams. Natural vegetation helps to slow erosion, as roots hold soil in place. When natural vegetation is removed, streambanks are more vulnerable to erosion and sedimentation.

Erosion and sedimentation also occur during construction, as soil is exposed to rain. Roadside ditches also contribute sediments to the streams, as stormwater scours the bottom of the ditch. In areas of steep slopes, erosion can be accelerated.

Natural Features

Sensitive natural features in the Town include wetlands, woodlots, and stream corridors. These areas provide wildlife habitat and contribute to the ecological diversity of the Town and region.

Open Space, Visual Resources and Viewscapes

The presence of viable agricultural operations and continued use of lands for agriculture helps to preserve open space in the Town of Batavia and contribute to the rural character. Issues relating to farmland retention are addressed in the Farmland and Agriculture Chapter.

Tools and Techniques

Stormwater Management

Stormwater management utilizes a system of vegetative and structural measures to control the increased rate and volume of stormwater runoff that results from new development. Such measures must be designed as part of new development to ensure that stormwater is properly filtered before flowing into streams or the Lake, and that the flow is managed to prevent flooding. Specific techniques include retention ponds, drainage swales, and artificial wetlands. Figure 3 illustrates the impacts of stormwater management techniques.

Local governments have the authority to require effective storm-water management techniques to be incorporated into the design of new development. Individual property owners can help to manage stormwater by limiting the amount of impermeable surfaces and allowing stormwater to filter into the ground before flowing into streams or the Lake.

Erosion and Sedimentation Controls

The prevention of erosion during construction requires the use of specific techniques designed to retain soil on site. Local governments typically require such techniques as part of the subdivision or site plan review process.

Conservation Overlay Zoning Districts

Conservation Overlay Districts (also known as EPODs-Environmental Protection Overlay Districts) can be incorporated into zoning regulations to provide additional protections to sensitive natural features such as stream corridors, woodlots and scenic views. The requirements of the Conservation Overlay District (or EPOD) supplement the land use and dimensional requirements of the underlying zoning district.

Overlay regulations for woodlots typically require Town approval before trees larger than a specified size are removed. The requirements would only apply to woodlots that are designated on a resource map and meet clearly specified criteria. "Overlay" zoning regulations designed to protect stream corridors typically limit the removal of natural vegetation within a certain distance (e.g., 50 feet) of the stream bank.

Cluster Development and Conservation Subdivisions

Clustered subdivisions allow dwelling units to be constructed on lots smaller than the “minimum lot size” required by zoning, while ensuring that the maximum density allowed in a zoning district is not exceeded. For example, if zoning regulations require a minimum lot size of 2.5 acres, approximately 40 dwelling units would be permitted on a 100-acre parcel. With clustering, the 40 units could be placed on 1-acre lots, with approximately 60 acres set aside as permanent open space.

Conservation subdivisions utilize design to maximize the amount of usable open space in a clustered subdivision. Once the permitted number of dwelling units is determined, the developer and the Planning Board apply the following design process to a parcel to be subdivided:

- Identify lands with conservation value. These include areas that must remain undeveloped, such as wetlands, floodplains and very steep slopes, as well as areas that contribute to the character of the area, such as active farmland, views, wooded areas, or streams. The remaining lands are best suited for development.
- Locate homes on the land identified as best suited for development.
- Once homes are sited, sketch in a network of streets and trails.
- Finally, draw the lot lines.

The Planning Board’s review of a clustered or conservation subdivision is more challenging than that of traditional subdivisions. In addition, the Town needs to be prepared to hold and monitor conservation easements in perpetuity. The Planning Board also needs to work closely with developers to create subdivision designs that maximize the protection of open space and natural features.

Clustered subdivisions can result in permanent protection of resources at low cost to the Town, as open areas would be protected by conservation easements. This technique is most effective for the preservation of environmentally sensitive areas, open space and scenic views that are located on the same lot as proposed residential development. As clustering does not reduce the number of building lots that can be developed on a parcel, it is generally acceptable to landowners and developers. Clustering works best when zoning requires low densities.

Recommended Actions:

1. Work with public and private entities to reduce flood hazards, consistent with Genesee County's Hazard Mitigation Plans.
2. Apply appropriate standards to new development to minimize erosion and sedimentation associated with new construction.
3. Utilize the subdivision and site plan review process to preserve significant natural and scenic resources as part of the design of new development.
4. Establish recreational facilities in conjunction with natural features.