

Natural Features

The Village of Granville is blessed with a number of natural features that residents can enjoy for both aesthetic and recreational purposes. Natural areas such as the Mettawee River and the Indian River, the slate quarries and scenic vistas are important features that contribute to the aesthetic, recreational, and economic assets of the Village and the community's quality of life.

BEDROCK GEOLOGY

The underlying bedrock of the area was formed at different times during a period of a billion to 300 million years ago when nearly all of the northern United States and Canada were covered with glaciers. The existing soils were formed as the climate warmed and glaciers moved over the land carrying large quantities of rock, which was ground into fragments ranging from boulders to clay in size. The melt-water carried and sorted the glacially transported material and re-deposited it in layers.

There are various kinds of bedrock in Washington County. The bedrock in the Village of Granville consists of shale, slate, sandstone, limestone, and syenite and granite-gneisses. This underlying parent rock material is what determines the mineral makeup of the soils.

The geology of the area has made a name for the Village of Granville. Granville is sometimes referred to as the *Colored Slate Capital of the World*, because it has the only *working* red slate quarries in the world. The slate deposits were actually discovered before the Civil War, while slate quarrying began in the mid 1800's when the first skilled slate workers were brought over from Wales to extract red, purple and green slate from the quarries. Many companies produced slate roofing shingles, flagstones, countertops, sinks, and other products that were sold worldwide. As such, quarrying became a major part

SOILS

of the local economy for the Town and Village. Today, the slate industry still continues to be very important to the Village economy, and is still one of the areas largest employers.

The soils of the Village are not only associated with ancient glacial outwash deposits, but with alluvial deposits from the flooding of the Mettawee and Indian Rivers. According to the *Soil Survey of Washington County, New York General Soil Map*, the Village of Granville is divided into three major soil associations. A soil association consists of one to four different soils that are found side by side, all usually developed from the same kind of parent material, but differing mainly in drainage and slope. There are three major soil associations within the Village of Granville. The following list is ranked from the most common soil association to the least common association according to the *General Soil Map*:

- Teel-Hamlin association: Deep soils formed in recent alluvium on flood plains: nearly level, poorly drained and very poorly drained, medium-textured soils, high in silt and very fine sand.
- Hoosic-Otisville association: Deep soils formed on plains, terraces, kames, eskers, and deltas in glacial outwash deposits in valleys: nearly level, somewhat excessively drained and excessively drained, moderately coarse textured gravelly soils formed in water sorted deposits from slate, shale and quartzite.
- Nassau-Bernardston association: Dominantly shallow soils formed in glacial till over bedrock on uplands: undulating through hilly, shallow, somewhat excessively drained, medium-textured

TOPOGRAPHY & SCENIC VISTAS



RIVERS

soils, and deep well drained and moderately well drained, medium-textured soils, formed in glacial till from shale, slate, and sandstone.

The Village of Granville is located within the valley of the Mettawee and the Indian Rivers; therefore, the topography of the Village is relatively flat to gently rolling. The majority of the Village remains at a stable 400 feet above sea level. The highest point in the Village is 460 feet, located in the Northeastern quadrant of the Village. This high point is the location of the Village drinking water tower.

The flatness of most of the Village affords significant scenic vistas along various roadways throughout the Village. The Village's scenic and visual resources are important because they provide economic and environmental benefits. Property values are enhanced and the physical environment benefits, as there are areas that remain in a natural state. The open agricultural lands surrounding the Village in the Town of Granville and in Vermont create a pronounced transition between Village and open farmland, which is an important visual asset to the Village.

Looking West toward the Town of Granville, on the other side of the Indian River, the slope increases dramatically to high peaks of more than 1,100 feet. This mountain scenery can be enjoyed at many different points throughout the Village. Other scenic vistas of the Vermont Green Mountains are available when traveling East toward Vermont.

The Mettawee River is the dominant natural water feature in the Village. The Mettawee River is 65.2 miles long and bisects the Village flowing North from the Southeastern corner of the Village to the



Mettawee River

Northwest, from Vermont. The Mettawee River continues to flow North through the Town of Whitehall, eventually draining into Lake Champlain.

The Mettawee River is identified by the New York State Department of Environmental Conservation (DEC) Division of Water (DOW) as a Class C (T) water body. This classification is described in the Environmental Conservation Law (ECL) Title 6 Part 701, Classification Surface Waters, and Groundwater. A Class C (T) water body is defined as being best suitable for trout propagation and survival. The water is also suitable for primary or secondary contact recreation (swimming, boating, fishing etc.).

Urban development has influenced the natural condition of the Mettawee River. The Mettawee River has recently been listed on the Priority Water Bodies List (PWL) also produced by the DEC/DOW. The PWL was completed in 1999 to determine stream classification, or best use. The water bodies on the list are those that do not meet the water quality standards of the ECL Title 6 classifications. The Mettawee River is considered a priority water body because its aquatic life support and fishery habitat is stressed by silt, sediment, and nutrient (phosphorous) runoff from farming activities within the watershed, and runoff of road salt and sand from municipal snow removal.

Elevated stream temperatures make the Mettawee River too warm to support the trout fishery. Row cropping and lack of riparian vegetation in many areas around Middle Granville contribute to the thermal changes.

Stream bank erosion is a major contributor of silt/sediment load to the river. Increased stream velocity caused by the increase of impervious surfaces within the watershed cause the stream banks to be scoured during heavy rain or snowmelt, adding more sediment to the water column.

In June of 2002, the Army Corps of Engineers warned the Village that erosion of the Mettawee banks threatens the Village public water supply. The Corps recommend the installation of riprap to halt erosion and prevent river water from contaminating the public wells that are only 150 to 200 feet away from the river.

Several projects are currently underway, or have been completed over the past few years by the State, the Army Corps of Engineers, and other interested environmental groups to study the conditions of the Mettawee River and take actions to improve it. The New York State Department of Health (DOH) Source Water Assessment Program Plan, which is expected to be completed in March of 2003, will identify and evaluate potential contaminant sources to all State public water supplies. The Poultney–Mettawee Watershed Partnership, based in Poultney, VT has been conducting thermal testing of Mettawee River, has completed some riverbank stabilization projects to re-establish a vegetative buffer in order to cool the river, and help minimize runoff of sediment and other pollutants.

Future planned upgrades to the municipal sewer treatment plant will also address the problems associated with phosphorous pollution to the Mettawee.

The Indian River is another major water feature of the Village. The Indian River is 32.7 miles long and it runs north along the Western boundary of the Village. This river is smaller than the Mettawee and flows much slower. The Indian River is identified by the New York State Department of Environmental Conservation (DEC) Division of Water (DOW) as a Class C (T) water body, and is listed as a priority water body. The Indian River's aquatic habitat and fishery habitat is thought to be stressed by silt/sediment runoff from agricultural activities in the watershed and increased water temperatures. The

Priority Water Body listing states that much of the problem originates in the Pawlet Valley of Vermont, because there is only one active dairy farm along the river in New York State. The lack of stream bank vegetation causes increased water temperatures, which stress the trout fishery.

The water quality of the Mettawee River and the Indian River is very important when considering that the majority of aquifers are recharged through infiltration from surface streams. If water quality of surface water is such that it is considered unsuitable for human consumption, there is potential for degradation of the public water sources in the future.

Since 1990, the New York State Department of Environmental Conservation (DEC), the Vermont Department of Environmental Conservation (DEC), the Province of Quebec, the U.S. Environmental Protection Agency, other federal and local government agencies, and local public and private groups have been working together on the Lake Champlain Basin Program (LCBP). The goal of LCBP is to *cooperatively work to protect and enhance the environmental integrity and the social and economic benefits of the Lake Champlain basin*. Among other accomplishments, over the past ten years this partnership has been successful at monitoring pollutant sources in the watershed, and influential in changing environmental policies.

WETLANDS

There are no New York State regulated wetlands within the boundaries of the Village of Granville.

FLOODPLAINS

Throughout the Village of Granville, both a 100 and 500- year floodplain can be found along the Mettawee River and the Indian River. The Federal Emergency

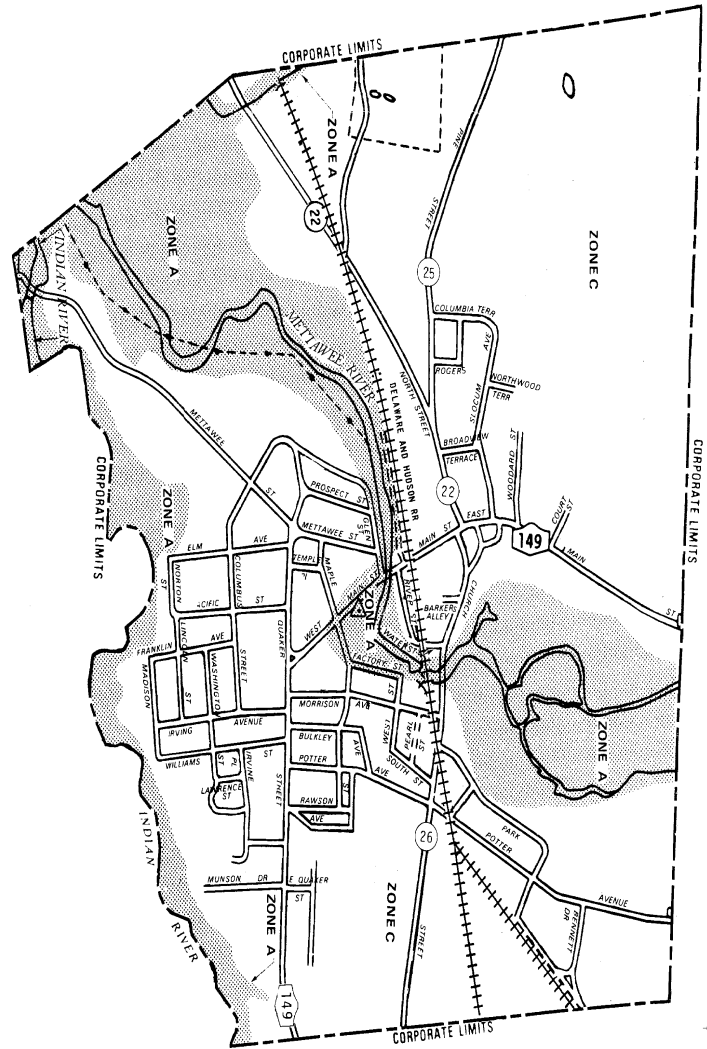
Management Agency (FEMA) National Flood Insurance Program delineated these boundaries on Flood Insurance Rate Map Panel Number 360886B, 1985 (shown on the following page). The Village has areas that are within Zone A of the Mettawee and Indian Rivers and Zone C. Zone A is the 100-year floodplain. Any development within Zone A requires the purchase of mandatory flood insurance. Zone C is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain.

Seasonal flooding of the Mettawee River has caused the Village some problems in the past. The Little League fields are located within the 100-year flood plain and spring flooding often affects the complex. The Village has been working with the Army Corps of Engineers to solve the flooding problem on the property, without creating additional flooding problems downstream.

Village of Granville

Washington County, NY

Federal Emergency Management Agency, F.E.M.A.
Flood Insurance Rate Map



Community Number 360886B
Effective Date April 17, 1985
Approximate Scale
1 inch = 800 feet