

Chatham Township Natural Resources Inventory

The 2013 Environmental Maps

Buried Valley Aquifer

The Buried Valley Aquifer is a collection of depressions in the earth that were filled with sand and gravel by the action of the last glacier. Water is trapped in these depressions and pumped out for use by the communities that lie on the surface. See Chapter 2 for a complete description of the aquifer and visit <http://www.epa.gov/region2/water/aquifer/burval/buryval.htm#19> for detailed information from the US Environmental Protection Agency. The Buried Valley Aquifer System is a Sole Source Aquifer, meaning that more than fifty percent (50%) of the drinking water for the aquifer service area is supplied by the Buried Valley Aquifer System and there are no economically feasible alternative drinking water sources which could replace it. Sole Source designation grants extra protection during construction projects. Data for the map came from the NJ Geological Survey.

Conservation Easements

For over ten years the Chatham Township Environmental Commission has been researching deeds, tax maps, wetlands applications and site plans to locate and monitor conservation easements in the Township. A total of about 60 have been documented and mapped. About 40 have been granted to Chatham Township with most of the rest granted to the NJ Department of Environmental Protection on wetlands and wetland transition areas. Details on each easement including the deed book number and page where the information is recorded in the Morris County Clerk's office can be found in the Conservation Easement Information spreadsheet that is available electronically by request at the Chatham Township Clerk's office. Over 200 acres are protected by conservation easements.

Contaminated Sites

The New Jersey Department of Environmental Protection maintains a record of locations known to be contaminated, usually by leaking underground fuel tanks but also from dumping of contaminated material. This map shows the locations in Chatham Township listed by the NJDEP. Information for the map was downloaded from the NJDEP GIS site at <http://www.nj.gov/dep/gis/>.

Critical Habitat for Imperiled Species

The New Jersey Landscape Project has identified areas that contain the kind of habitat that imperiled animals are known to need. Either imperiled animals have been found in these areas or the areas are near others where the animals have been found. Imperiled species include birds (red knot, barred owl and others), reptiles and amphibians (blue-spotted salamander, wood turtle, bog turtle and others), insects (certain dragonflies and others), and mammals (Indiana bat and others) and certain fish. Visit <http://www.state.nj.us/dep/fgw/tandespp.htm> for the complete list. Visit the Landscape Project at <http://www.state.nj.us/dep/gis/geoweb splash.htm> and www.state.nj.us/dep/fgw/ensp/landscape/.

The Landscape Project was designed to provide users with peer-reviewed, scientifically sound information that transparently documents threatened and endangered species habitat. Landscape Project data are easily accessible and can be integrated with the planning, protection and land management programs of non-government organizations and private landowners and at every level of government - federal, state, county and municipal. Landscape maps and overlays provide a foundation for proactive land use planning, such as the development of local habitat protection ordinances, zoning to protect critical wildlife areas, management guidelines for imperiled species conservation on public and private lands, and land conservation projects. The maps help increase predictability for local planners, environmental commissions, and developers, and help facilitate local land use decisions that appropriately site and balance development and habitat protection. The Landscape Project maps allow the regulated public to anticipate potential environmental regulation in an area and provide some level of assurance regarding areas where endangered, threatened or species of special concern are not likely to occur,

affording predictability to the application and development process. Thus, Landscape Project maps can be used proactively by regulators, planners and the regulated public in order to minimize conflict and protect imperiled species. This minimizes time and money spent attempting to resolve after-the-fact endangered and threatened species conflicts.

Environmentally Sensitive Sites

The Permit Extension Act of 2008 automatically suspended the expiration of many (but not all) state, county and local development and construction permits and approvals, and many environmental permits, for an “extension period” initially lasting from January 1, 2007 through July 1, 2010. However, by a legislative amendment, the duration of that “extension period” was extended until December 31, 2012, after which, under current law, the running of the approval periods will resume for up to 6 months, until June 30, 2013. However, the PEA excludes permit extensions for permits issued for properties located in “environmentally sensitive areas”. The PEA defines environmentally sensitive areas to include, among several categories, areas designated under the State Plan as “Planning Area 4B (Rural/Environmentally Sensitive), Planning Area 5 (Environmentally Sensitive), or a critical environmental site”. The locations of NJDEP-designated Environmentally Sensitive Sites are available for download and mapping at <http://www.state.nj.us/dep/gis/stateshp.html#ESA>.

Geology

The three categories of bedrock in Chatham Township are shown on this map. Towaco Formation lies near the Passaic River and in the river's floodplain. Hook Mt. Basalt lies on the ridge parallel to Fairmount Avenue (the Third Watchung Ridge) and on the upward-sloping land that extends as far as the ridge along Route 202. Boonton Formation underlies the Great Swamp and other wet areas.

The data came from the NJDEP GIS website. Visit <http://www.state.nj.us/dep/gis/geoweblaunch.htm> for more detail.

Land Use/Land Cover 1986 to 2007

Using data from the NJDEP GIS website, land cover in Chatham Township in 1986 is contrasted with land cover in 2007. Most of the development in the township occurred in the mid 1950s to the late 1980s - Noe Avenue and Old Farm Road/Ferndale Avenue, Wickham Woods, Geoffrey Court area, Jodi Lane, Susan Drive, Candace Lane and Tree Top Lane areas, Chatham Glen Condominiums, and the apartments and shopping area at Hickory Tree. Development occurred at a slower pace after the late 1980s, partly due to a ban on expansion of the sewage treatment plant. More recent developments include Valle Estates and Melrose Estates at Hickory Tree and small subdivisions in western areas such as Sycamore Hill, Kincaid Lane, and on Candace Lane.

Open Space

The Chatham Township Open Space Committee acquires land for preservation and trails and monitors open space. According to the map prepared for the OSC in 2010 by the engineering firm of Hatch Mott MacDonald public and non-profit open space in the Township breaks down as

County of Morris - 616 acres
Great Swamp Watershed Association - 3.4 Acres
Passaic River Coalition - 20 acres
School District of the Chathams - 66 acres
Township of Chatham - 306 acres
US Fish & Wildlife Service (Great Swamp National Wildlife Refuge) - 1397 acres

Chatham Township outside of the Great Swamp National Wildlife Refuge contains about 4,000 acres so about a quarter of Township non-Refuge land is owned by governmental or non-profit entities. Another 200 acres are protected by conservation easements.

Parcels with Potential for Development

Since the last revision of the Natural Resources Inventory in 1999 extensive tracts of vacant land have been preserved (Averett, Platt, Kirby, Woodland Park, Stoller, Shunpike Field Annex, parcels along the Passaic River) and other large vacant parcels have been developed or are in the process of being developed (Sycamore Hill, Kincaid Lane, Longview Road). Several sizable private parcels, along Meyersville Road, Fairmount Avenue, and Shunpike Road, are now partly protected by conservation easements because of the presence of wetlands. Several parcels on Loantaka Lane South have been acquired by the Morris County parks department.

A list of current Class Code C1 (vacant) privately-owned parcels prepared by the Chatham Township tax assessor and also a list of privately-owned potentially subdividable parcels queried using GIS software from 2012 Morris County parcel data are given in Chapter 8, Open Space and Land Use. Properties with demolished dwellings being redeveloped are considered vacant.

Chatham Township Code (30-96.6) states, "Use of Existing Vacant Lots for Single Family Dwelling. -- Any vacant lot or plot legally established and existing which fails to comply with the minimum lot area or dimension requirements, or both, of this chapter may be used for a single family dwelling if not otherwise prohibited in such district in which it lies provided all of the following requirements are complied with: a. The vacant lot is in single ownership as defined in this chapter, and b. All requirements except lot area or dimension requirements are complied with. (Ord. No. 2-79 § 705.5)."

Parcels are considered potentially subdividable if they are larger than about twice the required size for their zone or are tracts so extensive that upon rezoning they could accommodate many private dwellings or condominiums. The Rolling Knolls landfill, a Superfund site in the R-1A zone, is in a class by itself and is shown separately on the map. Declared "an area in need of redevelopment" by the Chatham Township Committee in 2010 the landfill is undergoing testing by the USEPA. Remediation will follow. See the Apgar Report (appended).

Slopes in Percent

Steep slopes in Chatham Township are found along the ridge south of Fairmount and Meyersville Avenues and north of Southern Boulevard between Fairmount Avenue and Noe Avenue. Development in Chatham Township is constrained by certain requirements regarding the percentage of slopes allowed to be disturbed on lots. The Chatham Township ordinance regarding disturbance of steep slopes is:

30-96.24 Steep Slopes.

According to the Soil Conservation Service, United States Department of Agriculture, soils with a slope of fifteen (15%) percent or greater invariably involve severe limitations to development, including but not limited to building and road construction and septic effluent disposal. Moreover, it is found that the removal of vegetation and disturbance of soils in steep slopes by excavation and fill will increase runoff and result in soil erosion and siltration with the resultant pollution of streams as well as the potential danger of flooding and water drainage, thereby having the potential of endangering public and private property and life; and that this condition is aggravated by soil disturbance, construction and development of these slopes which create an additional hazard to the lives and property of those dwelling on the slopes and below them. Accordingly, it has been determined that a major objective of Chatham Township's zoning regulations should be the protection of areas of steep slopes. To this end the following requirements and limitations are established:

a. Limits on Disturbance.

1. Slopes of twenty-five (25%) percent or greater shall remain undisturbed, except that any applicant shall be permitted to disturb slopes of greater than twenty-five (25%) percent in accordance with the following:

(a) Each application is permitted to have a disturbance of slopes greater than twenty-five (25%) percent, not to exceed one (1%) percent of the slope area in excess of twenty-five (25%) percent or ten thousand (10,000) square feet whichever is less, except that

(b) Notwithstanding paragraph a.1. above, each application is permitted to disturb slopes of greater than twenty-five (25%) percent up to five hundred (500) square feet in total area.

2. Not more than twenty (20%) percent of slopes ranging from twenty (20%) percent to twenty-five (25%) percent shall be disturbed and the area of disturbance of such slope area shall not exceed five (5%) percent of the total lot area.

3. Not more than thirty (30%) percent of slopes ranging from fifteen (15%) percent to twenty (20%) percent shall be disturbed and the area of disturbance of such slope area shall not exceed ten (10%) percent of the total lot area.

(Ord. No. 99-029 § 3)

Soils

Knowledge of the composition of soils is important for construction and agriculture. The United States Department of Agriculture and the Morris County Soil Conservation District provided the soil information used for this map. In general loams can suffer from erosion if found on steep slopes while mucks are usually found in swamps. Information on the characteristics and suitability for various activities of each type of soil can be found at <http://websoilsurvey.nrcs.usda.gov/>.

In Chatham Township muck constitutes most of the Great Swamp National Wildlife Refuge while the loams, which can be dry land or wetlands, tend to occur outside the swamp. Along the top of the ridge above Fairmount Avenue there is an outcrop of almost bare rock. Esternay Field and the former sand quarry on what is now Rose Valle Estates are shown as gravel pits. Along the river the soil has characteristics resulting from periodic flooding. The urban-type soil in the eastern part of the Township results from compaction caused by development and has little capacity for recharge of stormwater. The Rolling Knolls landfill has a special soil classification given to areas covered with alternating layers of refuse and natural earth taken from the adjacent land.

Stormwater Recharge

Stormwater recharge describes how the soil handles rain. Rainwater that soaks into the ground does not cause flooding, wet basements, overflowing storm sewers or excess discharge into the sewage treatment plant. Soil that recharges readily is therefore desirable.

Wetlands already have standing water and so can't infiltrate rainwater at all. Hydric soil, which has color and texture indicating periodic flooding, isn't much better - it is already at capacity most of the time. Compacted soil recharges poorly. Areas shown with compacted soil include the Hickory Tree shopping center, Rolling Knolls landfill, the schools and churches, the power lines, and the condos and apartments. The suburbs have moderate recharge, 10 to 11 inches per year, although lawns generally recharge poorly. Recharge is shown to be greatest in those areas that have been undisturbed long enough for the trees to have grown back and created a mulch layer on the forest floor.

Streams Requiring a 300 Foot Buffer

The New Jersey Department of Environmental Protection requires a 300 foot strip of undisturbed land on either side of certain streams. Those streams are either extremely clean or are tributaries of clean water bodies. In Chatham Township the Great Swamp National Wildlife Refuge is considered to have Category One, very clean, water. As a consequence all the streams that drain into it require the 300 foot buffer, even though those streams themselves are not considered to be in the very clean category. Only one stream, Primrose Brook, is considered very clean, that is, Category One. In 2005 the Township's engineer prepared a map of all streams in Chatham Township requiring the 300 foot buffer in order to show proximity to development and open space.

The applicable law, New Jersey Administrative Code N.J.A.C. 7:7A states

"Category one waters" means waters designated as category one waters in the Department's Surface Water Quality Standards at N.J.A.C. 7:9B. As of September 4, 2001, N.J.A.C. 7:9B-1.15 defines category one waters as those waters designated in the tables in N.J.A.C. 7:9B-1.15(c) through (h), for purposes of implementing the antidegradation policies set forth at N.J.A.C. 7:9B-1.5(d), for protection from measurable changes in water quality characteristics because of their clarity, color, scenic setting, other characteristics of aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resource(s). These waters may include, but are not limited to:

1. Waters originating wholly within Federal, interstate, State, county, or municipal parks, forests, fish and wildlife lands, and other special holdings that have not been designated as FW1 at N.J.A.C. 7:9B-1.15(h) Table 6;
2. Waters classified at N.J.A.C. 7:9B-1.15(c) through (g) as FW2 trout production waters and their tributaries;
3. Surface waters classified in this subchapter as FW2 trout maintenance or FW2 nontrout that are upstream of waters classified in this subchapter as FW2 trout production;
4. Shellfish waters of exceptional resource value; or
5. Other waters and their tributaries that flow through, or border, Federal, State, county, or municipal parks, forests, fish and wildlife lands, and other special holdings.

In addition:

The Stormwater Management Rules establish a Special Water Resource Protection Area (SWRPA) which is defined as the area within 300 feet of a Category One water and its upstream tributaries within the HUC 14 subwatershed, including both perennial and intermittent streams depicted on either USGS Quadrangle Maps or the County Soil Surveys. The Surface Water Quality Standards (SWQS) at N.J.A.C. 7:9B designate "Category One waters" because of their clarity, color, scenic setting, other characteristics of aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resource(s).

An environmental consultant prepared studies required by the NJDEP for reduction of the buffer along a SWRPA stream adjacent to Shunpike Field. The report says in part, "A portion of the proposed project area is located within the Special Water Resource Protection Area (SWRPA) of an unnamed tributary to a Category I waterbody. According to the NJDEP Stormwater Management Rules (N.J.A.C. 7:S), the SWRPA consists of a 300-foot buffer that extends outward from the top of the bank of any tributary located within the HUC 14 drainage of a Category I water body. Under certain circumstances, such as development or disturbance, the 300-foot buffer can be reduced to 150 feet. Maintained lawns, like those on the athletic fields, are considered by the New Jersey Department of Environmental Protection (NJDEP) to be "disturbed" habitat that would be eligible for the buffer reduction. In order to obtain approval for this reduction, NJDEP requires that a Special Water Resource Protection Area Functional Value Analysis (Analysis) be conducted to show that the conditions of the SWRPA be maintained to the maximum extent practicable".

Topography

This map shows the elevation of the land in 5-foot contours. The lowest ground occurs in the Great Swamp and along the Passaic River. Very steep slopes occur between the Fairmount Avenue-Meyersville Road roadway and River Road. The land rises north of Southern Boulevard between Woodmont Drive and Fairmount Avenue, and again northwest of Green Village Road. Chatham Township lies in the bowl, rimmed with ridges, that once was part of glacial Lake Passaic.

Wetlands

"Long regarded as wastelands, wetlands are now recognized as important features in the landscape that provide numerous beneficial services for people and for fish and wildlife. Some of these services, or functions, include protecting and improving water quality, providing fish and wildlife habitats, storing floodwaters, and maintaining surface water flow during dry periods. These beneficial services, considered valuable to societies worldwide, are

the result of the inherent and unique natural characteristics of wetlands." This quote from the United States Environmental Protection Agency (USEPA) applies to the extensive wetlands in Chatham Township. So valuable were the wetlands that occupy the west-central third of the township that they were incorporated into the Great Swamp National Wildlife Refuge (GSNWR) beginning in 1964. Other wetlands occur throughout most of the rest of the township, surprisingly even on some slopes such as those near Wynwood Road, Hall Road and Lafayette Avenue.

The New Jersey Department of Environmental Protection (NJDEP) has rules in place to protect wetlands. A permit must be obtained from the NJDEP before building can take place in or near wetlands. Wetlands fall into one of three classifications: Ordinary Resource wetlands which require no buffer so construction can take place right up to the edge of the wetlands, Intermediate Resource wetlands which require a 50 foot buffer, and Exceptional Resource wetlands which require a 150 foot buffer. Most of the wetlands in the GSNWR have Exceptional Resource classification and many outside of the GSNWR do also since they drain into the Great Swamp.

For information on wetlands visit http://water.epa.gov/type/wetlands/outreach/upload/fun_val_pr.pdf.
For the NJDEP wetlands rules visit http://www.nj.gov/dep/rules/rules/njac7_7a.pdf.

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