

Village of Chatham 2039 Comprehensive Plan

Environment & Natural Resources: Chatham and Its Extraterritorial Jurisdiction

Prepared by:

**Steve Keenan
Emily Prather**



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Please note that throughout this report, the term Chatham planning area refers to the Village of Chatham boundaries plus the 1.5-mile area outside its limits.

1. Topography & Geology

Topography & Geology

The topography in the Chatham planning area is fairly flat but varies from an approximate low of about 550 feet above sea level to an approximate high of about 625 feet above sea level. The lower areas are near watersheds like Lake Springfield and the higher elevations are located in the southwest part of the Chatham planning area.

The Chatham planning area is part of the larger Springfield plain, which extends into northern Sangamon County. 98 percent of Sangamon County has rock from the Modesto Formation of the Pennsylvanian geologic age containing: shale, limestone, sandstone, clay, coal, and black shale (United States Geological Survey, n.d.). The other two percent of Sangamon County is part of the Bond Formation of the Pennsylvania geologic age containing: limestone, shale, sandstone, underclay, black shale, and coal (United States Geological Survey, n.d.).

Glaciers also played a role in the soil formation of the Chatham planning area. Above the bedrock, there are two major quaternary geology character areas which are periods characterized by glacial-interglacial cycles. The more prevalent character area has Peoria loess (wind-blown soil) overlaying gleyed Roxana Silt (characteristic of wetlands) overlaying oxidized Sangamon Soil, overlaying Vandalia Till of the Glasford Formation (soil deposited by melting glaciers). In low-lying locations such as the Lick and Sugar Creek floodplains, the second area is characterized by Peoria loess overlaying oxidized Roxana Silt overlaying oxidized Sangamon Soil overlaying Vandalia Till of the Glasford Formation (Bergstrom et al., 1976).

Mine Subsidence

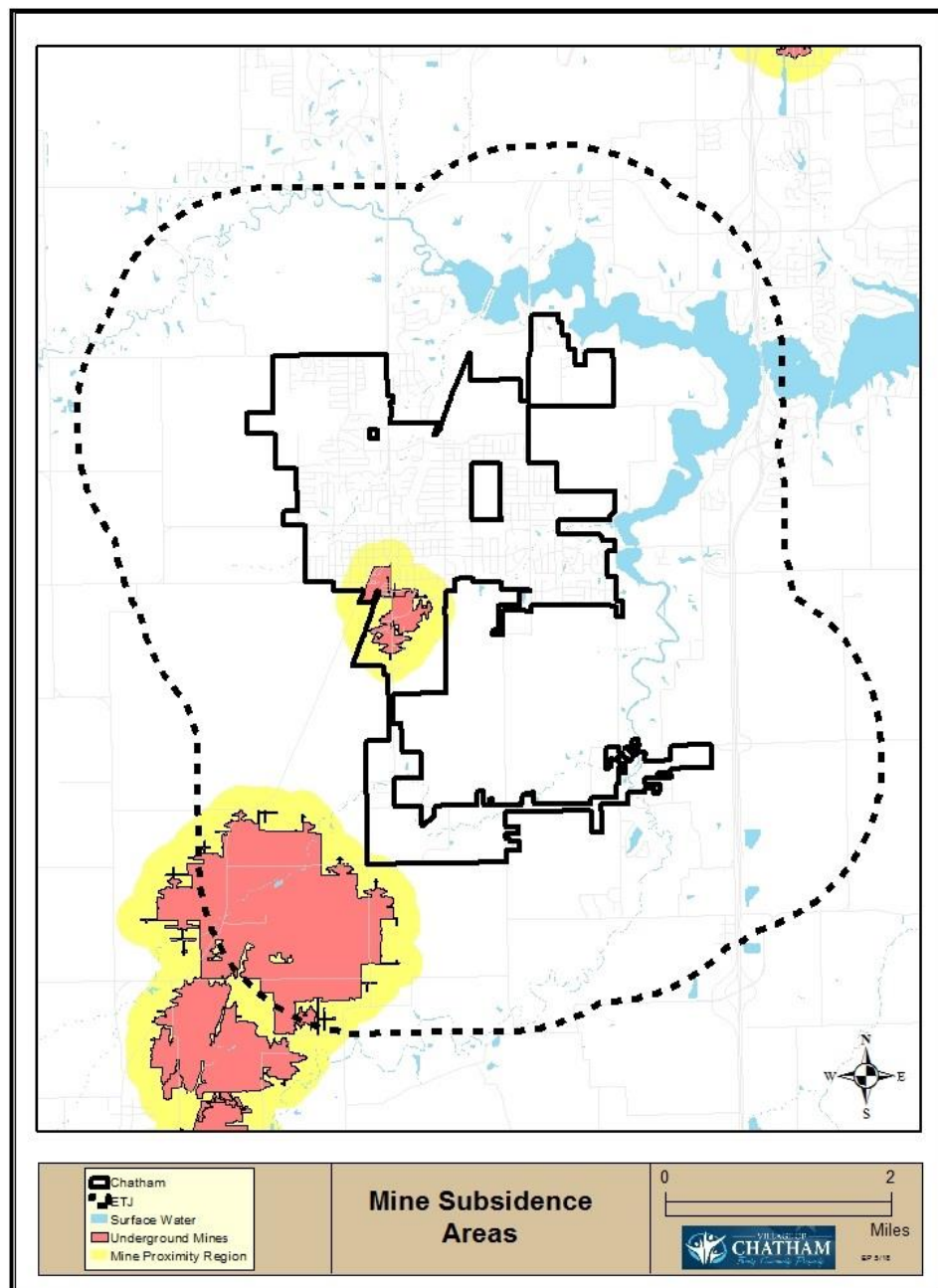
Historically, coal was an important economic resource in Sangamon County. In the Chatham planning area, the bedrock contains small seams of Herrin no. 6 coal in bands of five to seven feet wide at depths of approximately 200-300 feet (Bergstrom, Piskin, & Follmer, 1976). One by-product of coal mining is mine subsidence which is the sinking of the ground surface due to the collapsing of the voids left from coal mining. Possible risks from mine subsidence can vary from minor structural damage such as cracks in walls to major problems including foundation or slab failure, houses sinking into the ground or sinkholes.

The Chatham planning area contains two known coal mining areas as shown on the map in Figure 1. The Illinois Collieries No. 3 Mine is located within the village limits of Chatham and was in operation from 1885-1907. The Panther Creek No. 1 Mine is located in the southwest portion of the Chatham planning area and was in operation from 1918-1944. The map depicts the location of the underground mines in

red with yellow representing a proximity region where mine subsidence may still occur due to the location near the underground mines.

People located in the areas where these two mines were in operation need to be aware of the potential of mine subsidence. Discoveries of old mines shafts, while rare, are not an unknown occurrence in Sangamon County. The two primary offices with information on mines throughout the state are the Office of Mines and Minerals at the Illinois Department of Natural Resources, and the Illinois State Geological Survey, which maintains the Coal Mines in Illinois (ILMINES) website.

FIGURE 1



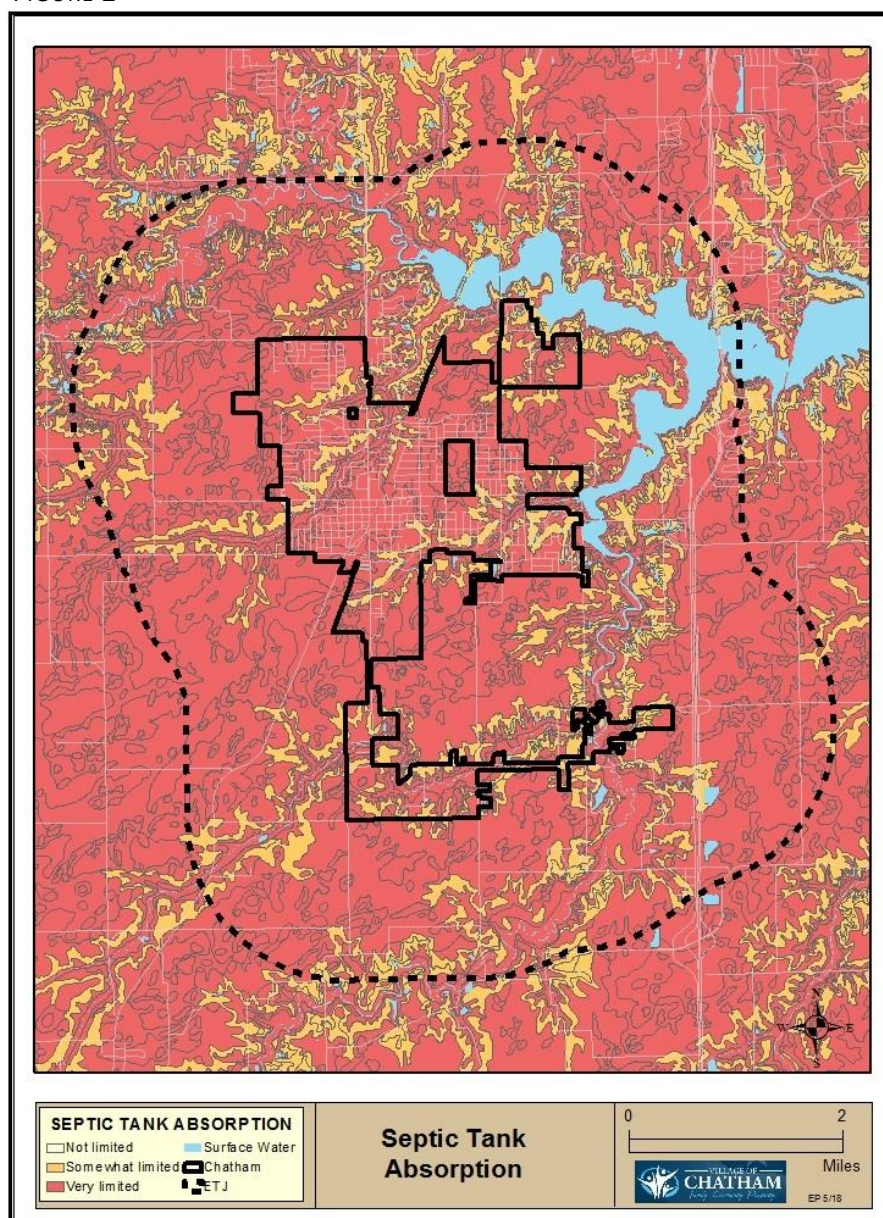
2. Area Soils

One result of wind and water shaping the surface over thousands of years is a large amount of good farmland soil in the Chatham planning area. The downside to this soil is there are large areas that are not particularly suitable for septic fields.

Soil Suitability for Septic Fields

Figure 2 depicts the suitability of soils for septic fields with the darker colors identifying soils limited for handling septic field run-off. These soil limitations are an important consideration for growth planning as a majority of the Chatham planning area is within the darker colored areas.

FIGURE 2



Soil Suitability for Agriculture

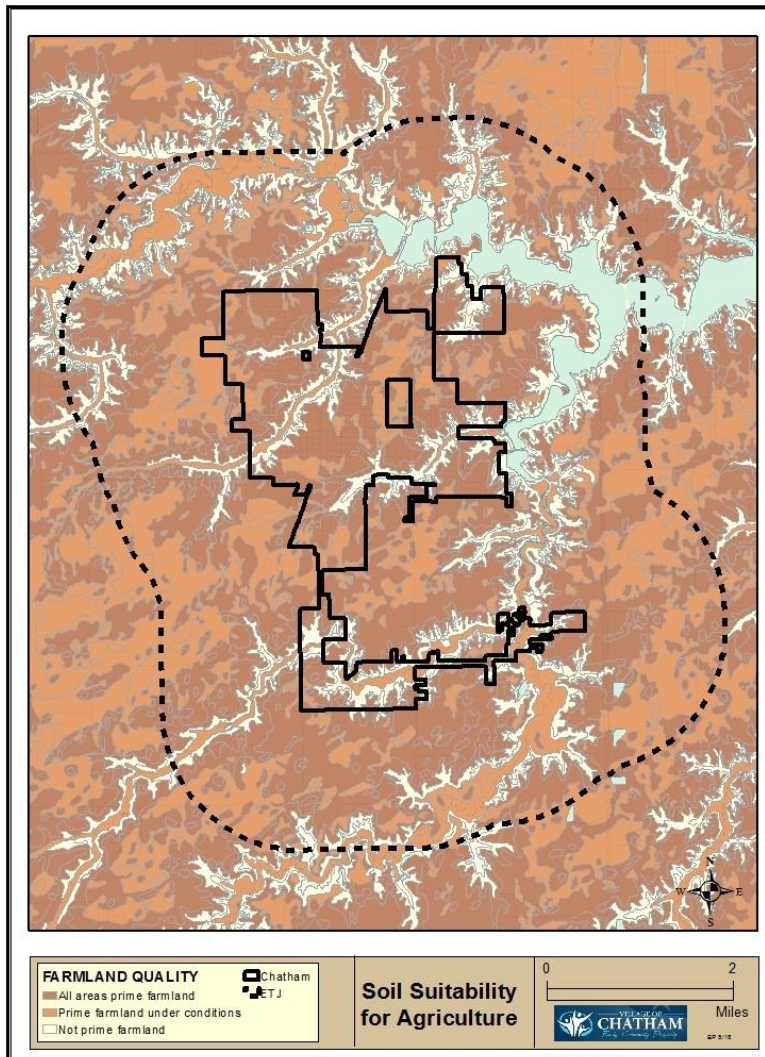
Agriculture is an important land use in the vicinity of Chatham. Part of the land in Chatham's village limits is cropland, and the majority of the land in the 1.5-mile extraterritorial jurisdiction is used for agricultural production. The Chatham planning area contains 30 different soil types listed in Figure 3. Many of these soils types are important for farming. Nine of these soil types are defined as prime under the Land Evaluation and Site Assessment (LESA) scoring system. The three most common soil types to the area are: Ipava, Virden, and Osco. Figure 4 shows the areas suitable for agriculture in dark brown.

FIGURE 3

Soil Types*		
Assumption	Fayette	Osco
Buckhart	Harrison	Proctor
Camden	Hartsburg	Radford
Clarksdale	Hickory	Rozetta
Denny	Ipava	Sable
Drury	Kendall	Sawmill
Edinburg	Keomah	Shiloh
Elburn	Lawson	Spaulding
Elco	Navlys	Tice
Elkhart	Orthents	Virden

* Bold denotes prime soil types.

FIGURE 4



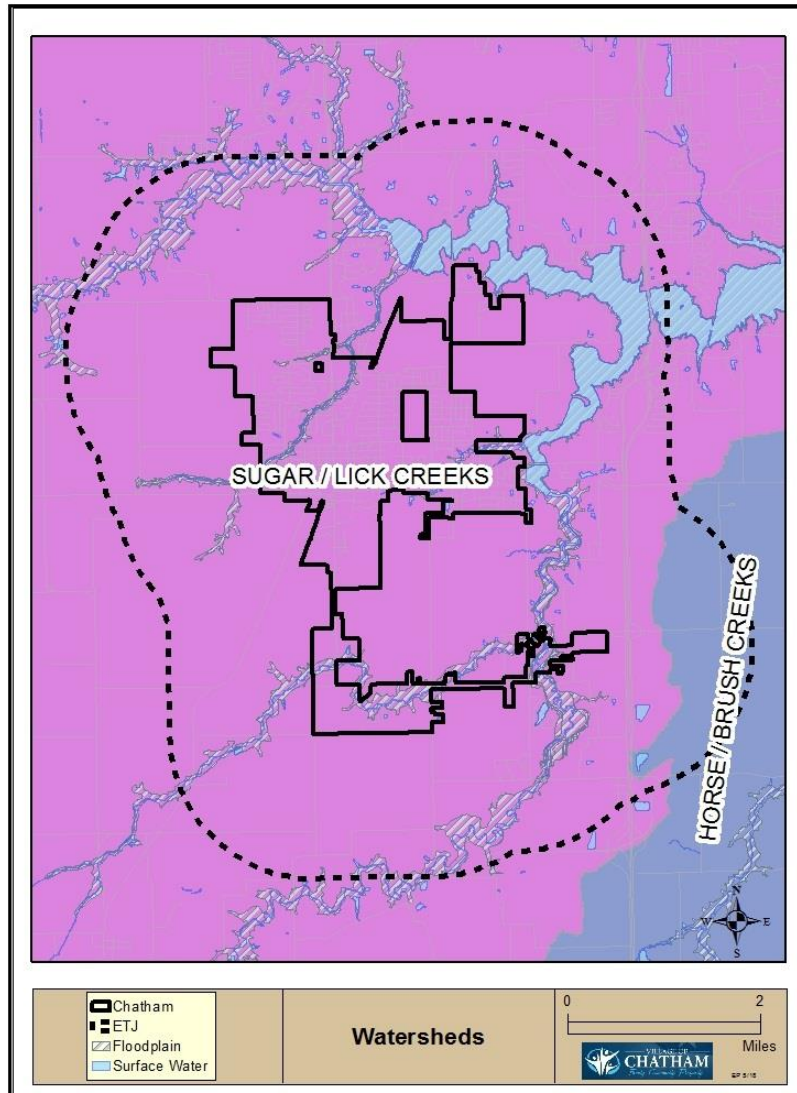
3. Watersheds, Floodplains & Wetlands

Watersheds

The word watershed generally refers to areas drained by rivers, creeks, and intermittent streams of varying sizes. In Sangamon County, watersheds drain to the Sangamon River, which then drains to the Illinois River and then to the Mississippi River. Sugar/Lick Creek and Horse/Brush Creek are the two watersheds in the Chatham planning area. Approximately 95 percent of the Chatham planning area is within the Sugar/Lick Creek watershed. The other approximately five percent of the planning area is in the Horse/Brush Creek watershed. Figure 5 shows the two watersheds.

There are a few impaired bodies of water in the Chatham planning area according to the Illinois EPA (IEPA) Integrated Water Quality Report (2016). Impaired means “one applicable use, e.g. aquatic life, is not fully supported or good,” (IEPA, 2016, p. 1). In the Sugar/Lick Creek watershed, both namesake

FIGURE 5

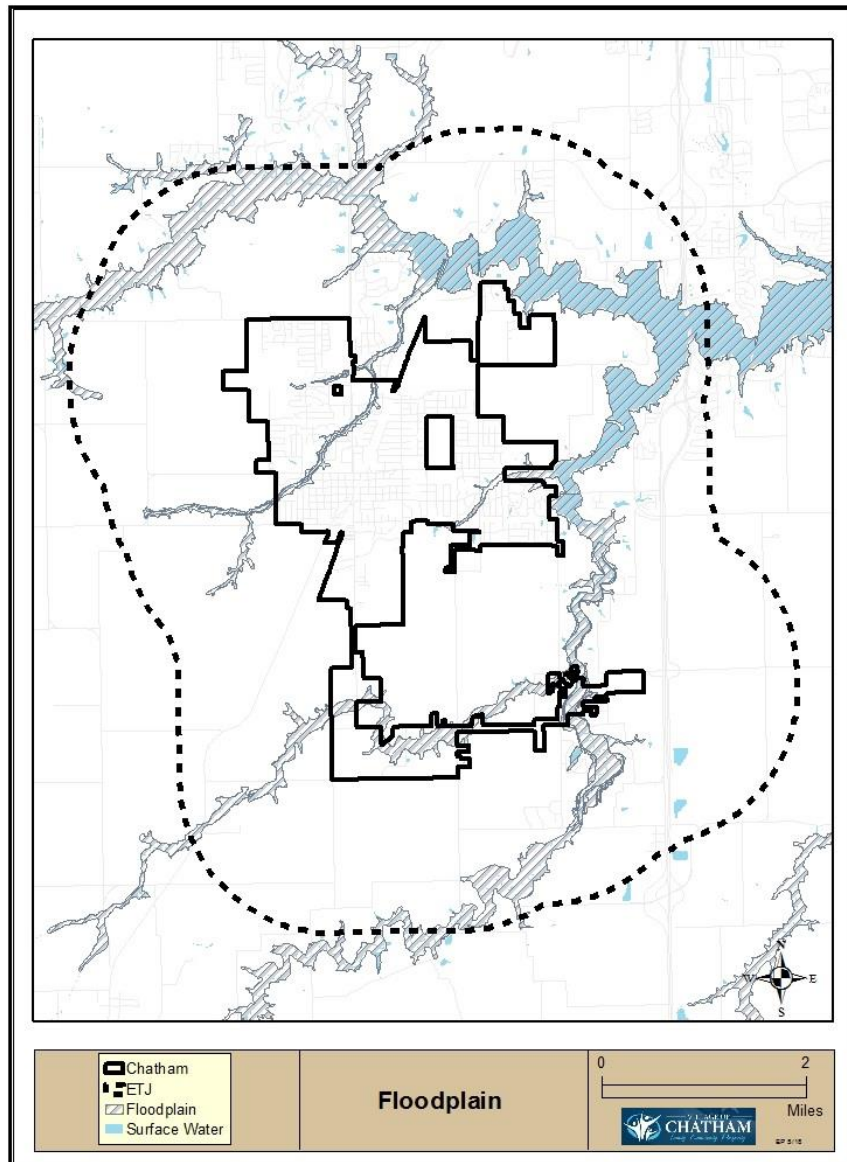


streams are listed as impaired. Sugar Creek is insufficient for aquatic life because of low dissolved oxygen (which affects aquatic animal breathing) and total phosphorous. Lick Creek is insufficient for aquatic life because of low dissolved oxygen levels. Lake Springfield is as an impaired inland lake insufficient for aquatic life due to low dissolved oxygen levels and total phosphorus. It is also insufficient for aesthetic quality due to total phosphorus and total suspended solids. Identifying waters that are impaired is an important part of the process to conserve bodies of water like lakes, streams, and rivers.

Floodplains

When planners talk about “floodplains”, it typically means areas within the 100-year or one percent annual chance floodplain, also called the Special Flood Hazard Area (SFHA). Figure 6 shows floodplains in the Chatham planning area. According to FEMA (2005), floodplains provide several natural and

FIGURE 6



beneficial functions. First, they provide natural flood and erosion control. Floodplains provide storage of floodwaters during times of high water flow and contribute to the hydrologic cycle by recharging groundwater, refreshing aquifers and smoothing out the frequency and duration of low water flows during droughts. Second, floodplains serve important biologic resources and functions. They maintain water quality by filtering run-off, moderating water temperatures and processing organic waste; important functions that improve aquatic habitats. Floodplains are also hunting and breeding grounds for wildlife helping to conserve natural areas. Additionally, floodplains can contribute to an improved quality of life through societal benefits providing opportunities for outdoor and scientific education. Finally, although more applicable to Sangamon County in general than Chatham specifically, floodplains can provide recreational opportunities when there is enough water to support boats, canoes, kayaks, or inner tubes.

The Chatham planning area has three important floodplains: Polecat/Fox Creek, Sugar/Panther Creek and Lick Creek. The most important floodplain in the Chatham planning area is likely Polecat/Fox Creek which runs through a portion of Chatham's village limits. The floodplain is studied with 100-year base flood elevations calculated using FEMA approved methodologies. A floodway is present on the flood maps from near the s-curve on Loami Road (Walnut Street) through the Village of Chatham to Lake Springfield. In the 1990s, the Village of Chatham conducted some buyouts near Glenbrook Lane and Bonnie Brook Drive.

The Sugar Creek floodplain is located in the eastern part of the Chatham planning area. It has little development, but there are a number of houses and subdivisions slightly outside the floodplain. The floodplain is studied with 100-year base flood elevations calculated using FEMA approved methodologies. Also, a floodway is present on the flood maps from near Glenarm Road to slightly south of the Chatham Road bridge. Panther Creek is a tributary to Sugar Creek. The Panther Creek floodplain has not been studied, meaning the floodplain is drawn on the map using approximate methods where base flood elevations have not been determined by FEMA.

The Lick Creek floodplain is located in the northern part of the Chatham planning area near Spaulding Orchard Road. The floodplain has not been studied. There is a heavily developed tributary to Lick Creek along Spaulding Orchard Road where there are some flooding problems.

Wetlands

Wetlands have similar properties to floodplains because they serve important biological functions and provide many social, environmental, and quality of life benefits. Most wetlands are found in the floodplain. Wetlands throughout the Chatham planning area are classified using a taxonomy developed by the United States Fish and Wildlife Service (Cowardin, Carter, Golet, & LaRoe, 1979/1992).

Figure 7 shows the location of wetlands in the Chatham planning area. The five most numerous wetlands codes are described on Figure 8. These five codes combined represent about 90 percent of the wetlands in the Chatham planning area.

The largest area of wetlands is an L-code, or Lacustrine, which are approximately 50 percent of the wetlands area. Lacustrine wetlands characteristics include size over 20 acres, located in a topographic depression or dammed river (or creek) channel, and lack trees (Cowardin et al, 1979/1992). These wetlands are located in the area where Lick Creek and Sugar Creek feed into Lake Springfield in the northern part of the Chatham planning area.

The second largest area of wetlands is a P-code, or Palustrine, which are approximately 40 percent of the wetlands area. Palustrine wetlands are more commonly known as prairies, bogs, fens or marshes and tend to be found near rivers and streams (Cowardin et al, 1979/1992). The two largest areas within the Palustrine coded wetlands are broad-leaf deciduous (leaf trees), and temporarily flooded

FIGURE 7

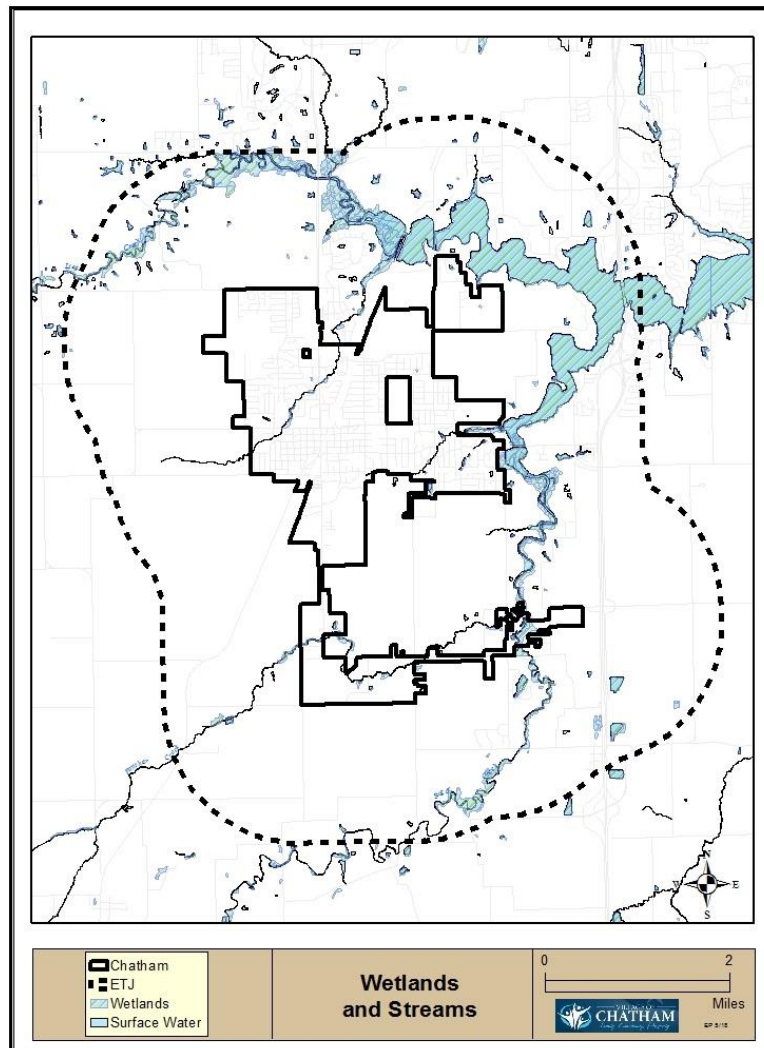


FIGURE 8

Code	Wetlands Codes Description	Acreage	Percent of Total
L1UBHh	Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded	911	49.8
PFO1A	Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded	394	21.5
PFO1Ah	Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded, Diked/Impounded	117	6.4
PEMCh	Palustrine, Emergent, Seasonally Flooded, Diked/Impounded	90	4.9
PUBGh	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Diked/Impounded	77	4.2
PEMFh	Palustrine, Emergent, Semi-Permanently Flooded, Diked/Impounded	54	3.0

meaning they are close to streams. The majority of these wetlands are located near Sugar and Lick Creeks in the northern part of the Chatham planning area. However, there are also some forested wetlands located in the western part of the Chatham planning area along Panther Creek and Polecat Creek.

4. Natural Areas

Natural Areas Inventory

In the 1970s, the Illinois Department of Conservation developed the Illinois Natural Areas Inventory (NAI) which described and graded the characteristics of natural areas. In 2004, the Friends of the Sangamon Valley contracted with LaGesse and Associates to document the natural areas of Sangamon County and the outcome was the Sangamon County NAI. LaGesse and Associates assigned grades to evaluate the quality of the natural areas according to the descriptions below:

- Grade A:** Relatively stable or undisturbed communities.
- Grade B:** Late successional or lightly disturbed communities.
- Grade C:** Mid-successional or moderate to heavily disturbed communities.
- Grade D:** Early successional or severely disturbed communities.
- Grade E:** Very early successional or very severely disturbed communities.

FIGURE 9

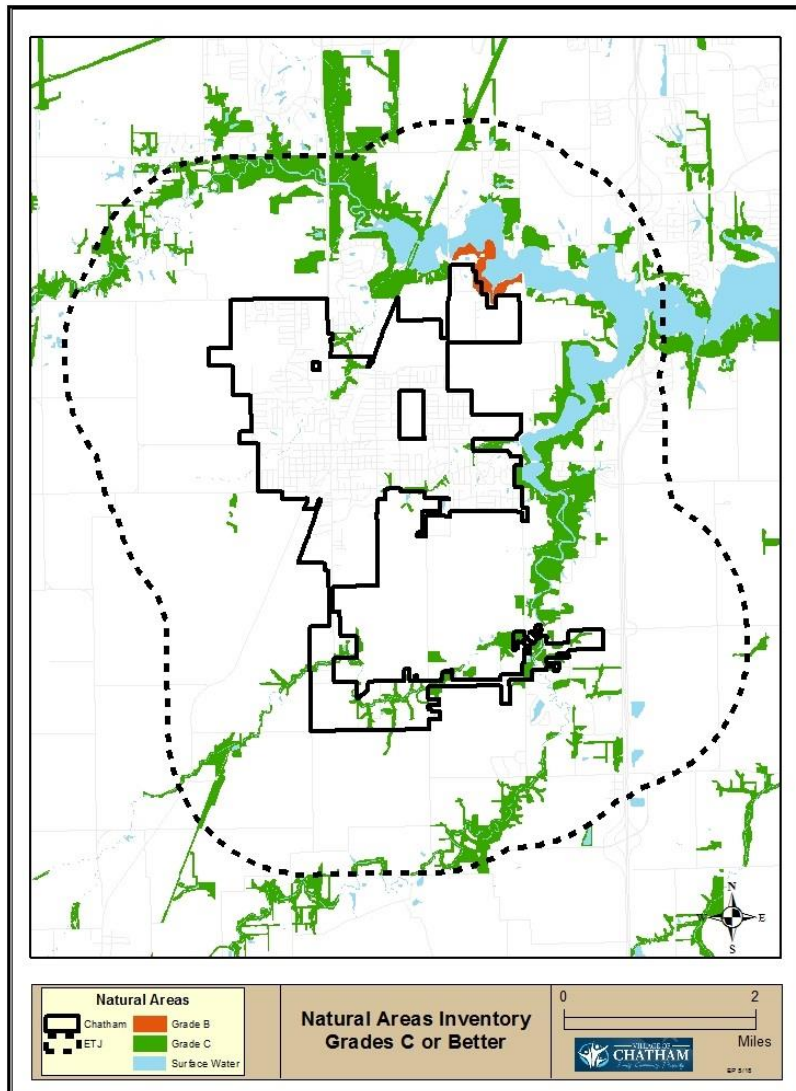


Figure 9 shows natural areas with a grade of C or higher. Grade C or higher was chosen as these findings include the least disturbed plant communities. The grade C natural areas tend to be clustered near and in the floodplains of the Chatham planning area. Also shown is one grade B natural area in the Chatham

planning area. It is located along the shore of Lake Springfield in the northern part of the Chatham planning area along the eastern part of Ironbridge Estates and Irongate Estates subdivisions, and slightly northeast of Spartan Valley subdivision.

Endangered and Threatened Species

The following table (Figure 10) indicates lists of federal and state threatened and endangered species for Sangamon County, and thus Chatham.

The species list is derived from the U.S. Fish and Wildlife Service and Illinois Department of Natural Resources websites, respectively. With a portion of Lake Springfield being located in the Chatham planning area, some of these endangered and threatened species may be located around the lake, and the community should be conscientious of this possibility when planning for new development.

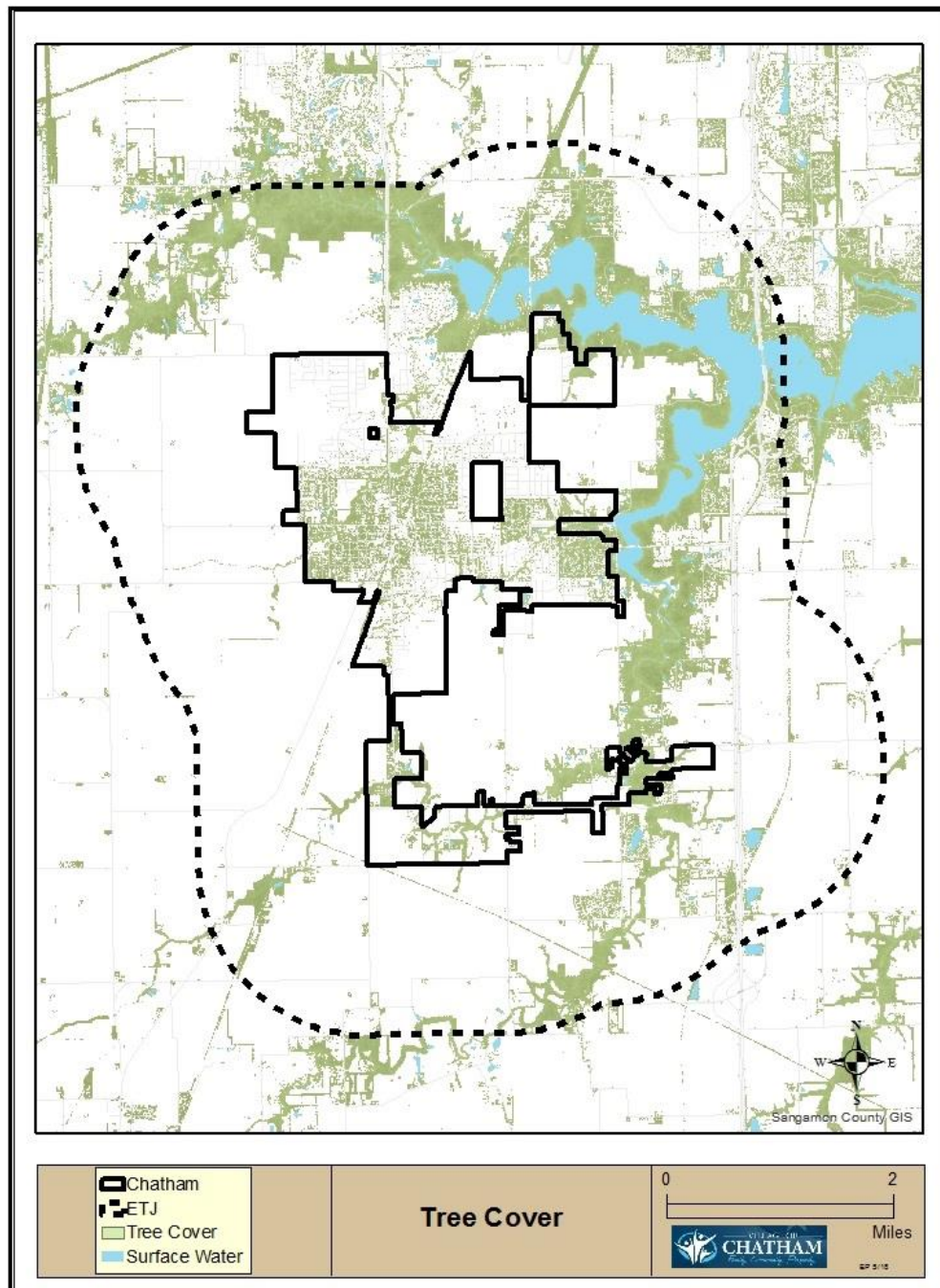
FIGURE 10

Endangered and Threatened Species*		
FEDERAL (US Fish and Wildlife Service)		
Common Name	Scientific Name	Status
Indiana bat	<i>Myotis sodalis</i>	Endangered
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened
Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	Threatened
STATE (Illinois DNR- List as of October 2016)		
Common Name	Scientific Name	Status
Smooth softshell (turtle)	<i>Apalone mutica</i>	Endangered
Short-eared owl	<i>Asio flammeus</i>	Endangered
Northern harrier	<i>Circus cyaneus</i>	Endangered
Loggerhead shrike	<i>Lanius ludovicianus</i>	Endangered
Indiana bat	<i>Myotis sodalis</i>	Endangered
Black-crowned night heron	<i>Nycticorax nycticorax</i>	Endangered
Heart-leaved plantain	<i>Plantago cordata</i>	Endangered
Royal catchfly	<i>Silene regia</i>	Endangered
Great chickweed	<i>Stellaria pubera</i>	Endangered
Kirtland's snake	<i>Clonophis kirtlandi</i>	Threatened
Least bittern	<i>Ixobrychus exilis</i>	Threatened
Bunchflower	<i>Melanthium virginicum</i>	Threatened
Mudpuppy	<i>Necturus maculosus</i>	Threatened
Franklin's ground squirrel	<i>Spermophilus franklinii</i>	Threatened
Ornate box turtle	<i>Terrapene ornata</i>	Threatened
Lined snake	<i>Tropidoclonion lineatum</i>	Threatened
Barn owl	<i>Tyto alba</i>	Threatened
*Blue text denotes a federal endangered species. Red text denotes a state endangered species.		

Tree Cover

Trees cover has several benefits. Tree-lined streets, can improve home sales. Tree cover enhances a neighborhood's character, giving it a shaded look that can be desirable as well as have a natural cooling effect in the summer. Tree cover also gives some privacy from neighbors. Figure 11 shows the tree cover in the Chatham planning area derived from 2007 data. The map indicates tree cover is densest near the railroad tracks in the older part of Chatham, and also along the various floodplains in the area.

FIGURE 11



5. Historical & Cultural Resources

The Chatham planning area has two properties on the National Register of Historic Places, the Sugar Creek Covered Bridge and the Caldwell Farmstead.

The Sugar Creek Covered Bridge, spanning across Sugar Creek southeast of Chatham, is the last covered bridge in Sangamon County and is one of five covered bridges remaining in Illinois. The covered bridge is believed to be the oldest surviving covered bridge of those five left in Illinois being built in 1827. Chatham is responsible for maintaining the covered bridge after the Sangamon County historical society turned deeded over the covered bridge and the adjoining Pioneer Park. The Sugar Creek Covered Bridge was added to the National Register of Historic Places in 1978.



The Caldwell Farmstead sits just north of Chatham located along Route 4. The farmstead has several structures on the property including the mansion, barn, smoke house, garage, and storage shed with the mansion and barn being the historic structures on the property. The Caldwell Mansion was built in 1876 and is a two-story towered Victorian Italianate villa style mansion. The barn was also believed to have been built around the same time as the mansion. The Caldwell Farmstead was added to the National Register of Historic Places in 1984.



Conclusion

- Chatham is flat and much of its surrounding landforms were created by glaciers, wind, and water over long periods of time.
- Chatham has two areas for mine subsidence, one in the Village, and one in its planning area outside Village limits. Both are former coal mines.
- Much of Chatham's planning area is very limited for septic fields.
- Much of the Chatham Planning area drains to the Sugar/Lick Creek watershed.
- Chatham's three floodplains are: Polecat/Fox Creek, Sugar/Panther Creek, and Lick Creek.
- Much of Chatham's wetlands are located near Lake Springfield and along its floodplains.
- Chatham has one grade B natural area in its planning area. Its grade C natural areas tend to cluster near the floodplains.
- Sangamon County contains 3 federally threatened/endangered species and 17 state threatened/endangered species.
- Chatham's areas of dense tree cover include the older portion of town near the railroad tracks and near the floodplains.
- Chatham's planning area contains two properties on the National Register of Historic Places, the Sugar Creek Covered Bridge and the Caldwell Farmstead.

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