

Village of Chatham 2039 Comprehensive Plan

Utilities Assessment

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WASTEWATER MANAGEMENT

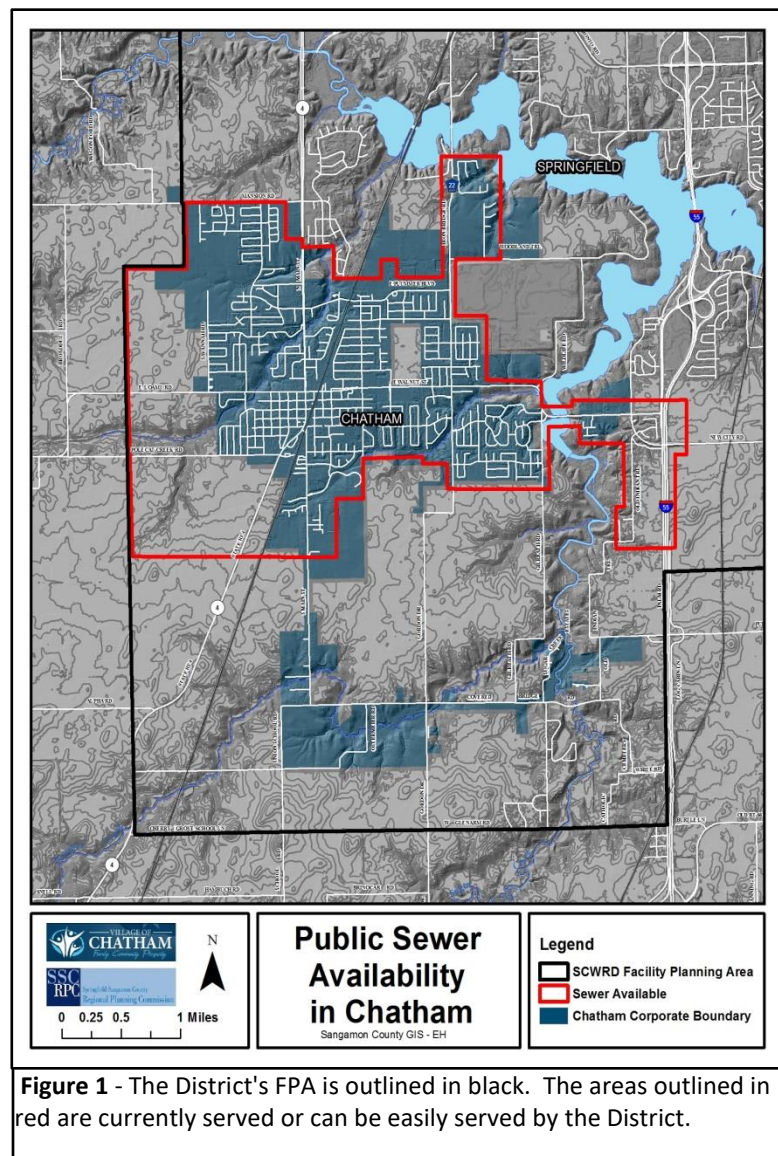
The wastewater for the Village of Chatham is treated by the Sangamon County Water Reclamation District (SCWRD). The Village of Chatham serves as a collector system that feeds into existing sewer mains maintained by the SCWRD. The district treats the wastewater and is responsible for the sanitary sewer permitting process for each development located within the district's Facility Planning Area (FPA).

The sanitary sewer and wastewater treatment system is built to support a maximum density of 15 Population Equivalents (PE) per acre. A single family home is measured at 3.5 PE, which equals roughly four single-family homes per acre.

The majority of the existing sanitary sewer lines in Chatham are gravity fed. The existing topography lends itself to support gravity sewer mains, which directs wastewater to the northwest towards one of the two pump stations near the village. One is located at the north end of the village off Old Route 4. The other is located on the east side of the village near Lake Springfield. These two pump stations take the wastewater from the gravity flow sewer mains and pumps it to the district's treatment plants.

The SCWRD's Spring Creek Treatment Plant serves a portion of the City of Springfield and a number of the surrounding communities, which includes the Village of Chatham. The District completed \$125 million in upgrades to the plant in 2012. The upgrades increased the daily and peak capacity at the plant by 12 million and 30 million gallons, respectively. (Landis)

Due to the size of the district and the large gravity and force mains already in place within the Village of Chatham, the sewage and wastewater needs of the village can easily be met. If any major growth were to occur, the district has the capacity to make upgrades to their system.



If the village were to develop more to the south, a pump station would likely need to be constructed to address the issue of topography with gravity fed mains. Furthermore, the village's proximity to the district's FPA to the west and south could limit viable locations for future growth. Amending the district's FPA with the Illinois Environmental Protection Agency could become necessary depending on where growth occurs.

PUBLIC WATER

Public water is the largest concern for the Village of Chatham when considering future growth. In 2009, the South Sangamon Water Commission (SSWC) was created to provide water to the Villages of Chatham and New Berlin. Since then, the Village of Chatham has established a contract with the SSWC to serve as the water provider.

The average daily water demand for the Village of Chatham consists of 775,000 gallons per day while the peak water usage for a single day in 2017 was 1.3 million gallons. Currently, the SSWC is able to provide 1.8 million gallons of water per day under current conditions. However, the village is not to exceed 80% of this amount, which is roughly 1.44 million gallons.

The SSWC is investing in infrastructure improvements. In 2018, SSWC finalized a loan to complete several projects, one of which being to add a raw water main pigging station. A pigging station is an oversized section of pipe where a device, known as a pig, is inserted into the line. The flow of the water pushes the pig down the line, and can be used to clean the main and inspect for any issues. The pig allows the water to continue flowing while the cleaning or inspecting takes place. The potential benefits of this could be improved water quality and potentially increased capacity from the removal of rust or sediment in the raw water mains supplying the treatment plant.

The SSWC plant has the space to double the production of the plant by constructing an additional water treatment system, which is also referred to as a "train." As discussed with Patrick McCarthy, Village Manager, the lack of demand has kept the plant from purchasing the second train. As additional growth occurs, the SSWC will need to expand to accommodate future growth, or the village will need to consider a supplemental water source to address usage demands.

The Village of Chatham is planning to complete several water related projects to help support future growth. The village currently has two existing above ground water storage tank with a water storage capacity of 2,250,000 gallons. Based on the usage, this stored water would only last around 2-3 days. Adding an additional above ground water storage tank would increase the village's water storage capacity.

In the event of an emergency, the village has an agreement with City Water, Light, and Power (CWLP) to provide additional water. This agreement is not a supplemental water source, and is only to be used in emergencies.

Additionally, the Village of Chatham is planning to make infrastructure improvements to the south by looping the water lines in several locations. This would help increase water pressure and water availability, and allow for more development in the village, especially towards the southern end. One of these proposed loops would need to go underneath a creek from Covered Bridge Road to Old Indian Trail. This would be an expensive project, but the results would help support growth in the village.

Other locations for loops include Goldenrod Drive from South Main Street to Illinois Route 4, and a loop along Mansion Road.

As growth to the north occurs, developments begin to reach other water providers' service boundaries. Mansion Road serves as the boundary between the SSWC and the Curran-Gardner Water District. As development along Mansion Road continues to occur, the village will need to negotiate agreements with the Curran-Gardner Water District to determine which entity will provide water to future developments.

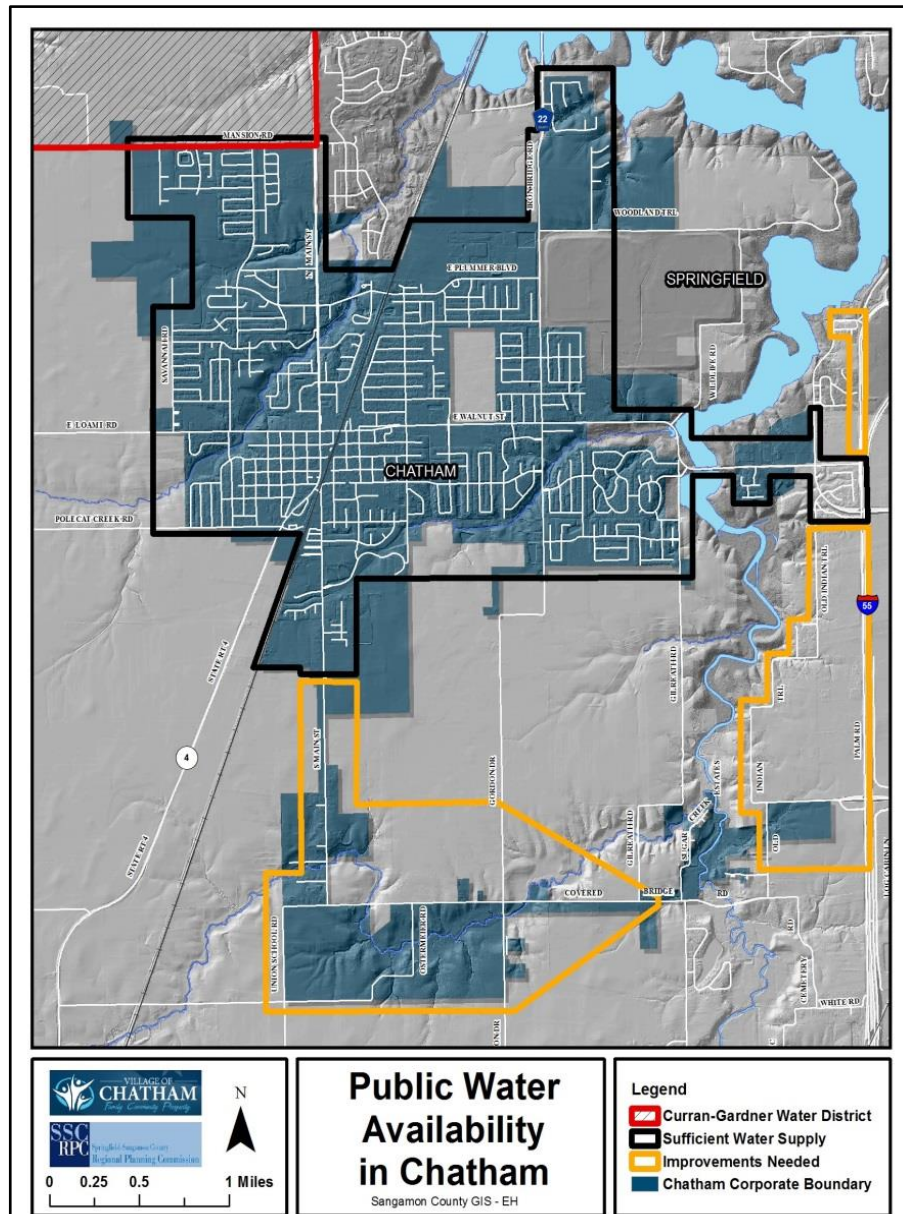


Figure 2 – The area outlined in red is the Curran-Gardner Water District's Jurisdiction. Areas outlined in black have a sufficient water supply from the village. Areas outlined in orange need infrastructure improvements to supply sufficient water to support additional development.

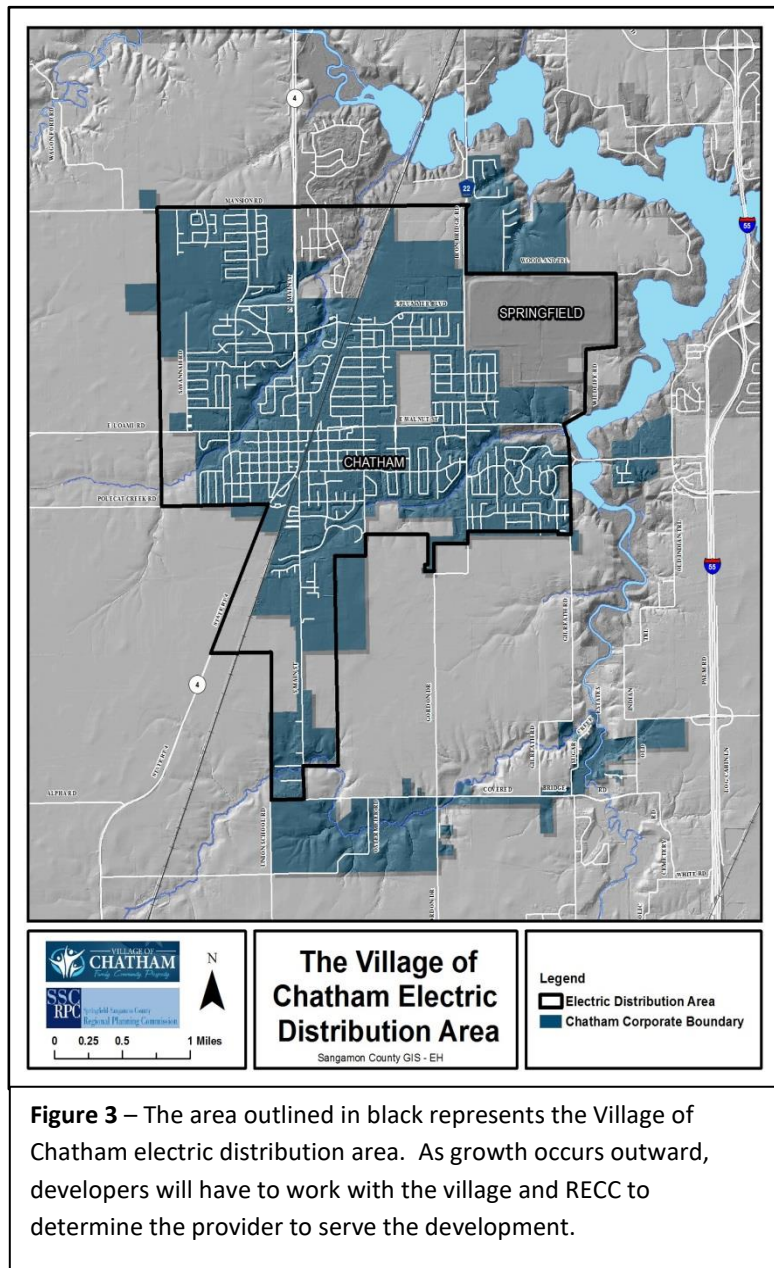
ELECTRIC

The Village of Chatham is currently responsible for the electric distribution area identified in Figure 3. Currently, the electricity supplied to the Village of Chatham is purchased wholesale from the Illinois Municipal Electric Agency (IMEA).

Created in 1984, IMEA is a non-for-profit unit of local government made up of municipal electric systems across the State of Illinois that works to deliver reliable power to its members at low and consistent prices (IMEA). While IMEA supplies electricity to all of its members, the individual communities own and operate their own electric distribution systems.

As was previously stated in the Village of Chatham 2007 Comprehensive Plan, the existing electric distribution system is approaching peak capacity. Despite being supplied by a reliable high voltage transmission line, minor upgrades to the distribution system to increase capacity will be needed in the near future. This includes fusing coordination of a new overhead three-phase line running down Route 4 and west on Mansion Road. This would allow an approximately 12-megawatt load to be added to the Independence Substation. Currently, the electric substation has the space to double its current capacity by adding an additional transformer. As additional development occurs, the need for this additional transformer will increase.

All new developments are constructed with underground electric lines. Additionally, the village has been replacing overhead electric lines with underground service. This has been taking place in older neighborhoods with taller trees to reduce the likelihood of outages during heavy storms. As this



relocation continues, the village's electric distribution system will become more reliable.

The Village of Chatham currently has an agreement with the Rural Electric Convenience Cooperative (RECC) to serve the areas located outside of the village distribution area. The Illinois Commerce Commission approved this agreement and it has been in place since 1996. RECC recently started purchasing wholesale electricity from NextEra Energy Marketing. Because both the village and RECC purchase power wholesale, they both have low, competitive rates. As growth occurs and the village expands outward, developers will have to work with the village and RECC to determine the provider to serve the development. This agreement with RECC is set to expire within the next few years. If the contract is not extended, the village may be responsible for serving properties outside of its distribution area in the future.

SUMMARY

Wastewater Management

- Capacity is not an issue for the district as growth occurs in Chatham. The district has the ability to upgrade as needed.
- Depending on the location of growth, a new pump station may become necessary.
- The village's proximity to the district's FPA could limit areas for future growth or would require amending the district's FPA with the Illinois EPA.
- The density of development is limited to a maximum of 15 PE per acre.

Water

- The water usage in the village is nearing what the SSWC can supply. A supplementary water source or expansion of the SSWC is needed to support additional growth.
- Adding a second above ground storage tank and looping the water mains to the south of the village will help support growth in that area.
- Development to the north of Mansion Road is in Curran-Gardner Water District.

Electric

- The Village of Chatham and RECC have a Service Area Agreement that defines who serves the areas located outside of the village distribution area.
- The agreement with RECC may expire in the next few years. After that, the village may be able to serve areas outside of their distribution area.
- Upgrades to the village's electric distribution system to increase capacity will be needed in the near future with an additional transformer and extending three-phase overhead lines. RECC has no capacity issues to serve areas surrounding the village.
- Relocation of overhead electric lines underground will make the electric distribution system more reliable.

SOURCES

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