

## CHAPTER 6: STREETS AND UTILITIES

### STREETS

Streets play a crucial role in the infrastructure and development of Green Isle, providing a network for transportation, access, and connectivity within the community. Well-maintained and efficiently designed streets contribute to the safety, mobility, and overall quality of life for residents and visitors alike.

The City of Green Isle is committed to maintaining and improving its street network to meet the current and future needs of the community. This involves regular maintenance, repairs, and upgrades to ensure that streets are safe, accessible, and functional for all users, including motorists, pedestrians, and bicyclists.

The city's street network consists of a hierarchy of street types, including arterial streets, collector streets, and local streets. Arterial streets, such as Main Street, serve as major thoroughfares, handling higher volumes of traffic and connecting the city to regional transportation networks. Collector streets, like Church Street, gather traffic from local streets and distribute it to arterial streets. Local streets provide access to residential areas and individual properties.

To ensure the long-term sustainability and efficiency of the street network, the City of Green Isle will develop and implement a comprehensive street maintenance plan. This plan will prioritize street improvements based on factors such as pavement condition, traffic volume, safety concerns, and community input. Regular pavement assessments, crack sealing, and surface treatments will be conducted to extend the life of the streets and minimize the need for costly reconstructions.

In addition to maintenance, the city will explore opportunities to enhance the streetscape and promote multi-modal transportation. This may include the incorporation of "complete streets" principles, which aim to accommodate the needs of all users, including pedestrians, bicyclists, and transit riders. Streetscape improvements, such as sidewalks, bicycle lanes, and landscaping, will be considered to create a more vibrant and inviting public realm.

The City of Green Isle will also work to secure funding for street improvements through a combination of local, state, and federal sources. This may include exploring grant opportunities, partnerships with other agencies, and the use of dedicated funding mechanisms, such as special assessments or transportation impact fees.

By prioritizing the maintenance and improvement of its street network, the City of Green Isle aims to enhance the safety, mobility, and overall quality of life for its residents and visitors, while supporting the long-term growth and development of the community.

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FIGURE 5.1 MAP OF GREEN ISLE STREETS

Green Isle City Council has recently held discussions on the need to mark truck routes. Marking truck routes is important for several reasons:

1. **Safety:** Designating specific routes for trucks helps to reduce conflicts between large vehicles and smaller passenger vehicles, pedestrians, and bicyclists. By directing trucks to roads that are designed to accommodate their size and weight, the risk of accidents and injuries can be minimized.
2. **Infrastructure protection:** Heavy trucks can cause significant damage to roads, bridges, and other infrastructure that are not designed to handle their weight. By restricting trucks to designated routes, the city can ensure that the appropriate infrastructure is used and maintained, prolonging its lifespan and reducing repair costs.
3. **Efficient traffic flow:** Truck routes are typically designed to provide efficient access to key destinations, such as industrial areas, commercial centers, and highways. By directing trucks to these routes, traffic congestion can be reduced on residential streets and other areas where truck traffic is less appropriate.
4. **Noise and pollution reduction:** Trucks can generate significant noise and air pollution, which can be a nuisance for residents living along heavily trafficked roads. By establishing truck routes away from residential areas, the impact of noise and pollution on the community can be minimized.
5. **Economic development:** Well-planned truck routes can support economic development by providing efficient access to businesses and industrial areas. This can help to attract new businesses and retain existing ones, creating jobs and supporting the local economy.
6. **Compliance with regulations:** Many cities and states have specific regulations regarding truck traffic, such as weight restrictions and emissions standards. By establishing and enforcing truck routes, the City of Green Isle can ensure compliance with these regulations and avoid potential fines or penalties.

Incorporating the designation and marking of truck routes into the City of Green Isle's comprehensive plan can help to address these important issues and support the long-term safety, efficiency, and sustainability of the community's transportation network.

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FIGURE 5.2 MAP OF GREEN ISLE TRUCK ROUTES

## UTILITIES

Utilities are crucial in rural communities for several reasons, playing a fundamental role in supporting the well-being, development, and sustainability of these areas:

1. **Basic Services:** Utilities, including water and sanitation services, provide rural residents with essential amenities for daily living. Access to clean and safe drinking water, as well as proper sanitation facilities, is vital for public health and hygiene.
2. **Economic Development:** Utilities are critical for attracting and sustaining economic activities in rural areas. Reliable energy sources, water supply, and communication infrastructure support the establishment and growth of businesses, contributing to economic development and job creation.
3. **Quality of Life:** Adequate utilities enhance the overall quality of life in rural communities. Access to electricity, heating, and cooling systems, as well as modern communication services, improves living conditions and provides residents with opportunities for education, entertainment, and social connectivity.
4. **Education and Healthcare:** Utilities are essential for supporting educational and healthcare facilities in rural areas. Reliable electricity is necessary for powering schools, clinics, and hospitals, while proper water and sanitation services are critical for maintaining hygiene in healthcare settings.
5. **Community Resilience:** Utilities contribute to the resilience of rural communities. Access to reliable power sources, water, and communication services helps communities respond effectively to emergencies, natural disasters, and other challenges.
6. **Technology and Connectivity:** In today's interconnected world, access to modern utilities is vital for rural areas to participate in the digital economy. Reliable internet and communication infrastructure support education, business, and access to information, bridging the urban-rural digital divide.
7. **Attraction of Investment:** Adequate utilities can make rural areas more attractive to investors. Reliable infrastructure, including energy and water supply, can influence businesses to establish operations in rural communities, bringing economic opportunities and contributing to local growth.
8. **Preservation of Rural Lifestyle:** Providing essential utilities helps preserve the rural way of life by enabling residents to meet their basic needs and participate in modern society without sacrificing the unique characteristics and values of rural living.

In summary, utilities are indispensable for rural communities as they support essential services, economic activities, and overall community well-being. Access to reliable and sustainable utilities is key to ensuring that rural areas remain viable, resilient, and attractive places to live and work.

## WATER SYSTEM

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- The city's water supply comes from groundwater.
- There are 2 wells that draw from the Quaternary Water Table aquifer.
- Average daily water production is around 115,000 gallons per day.

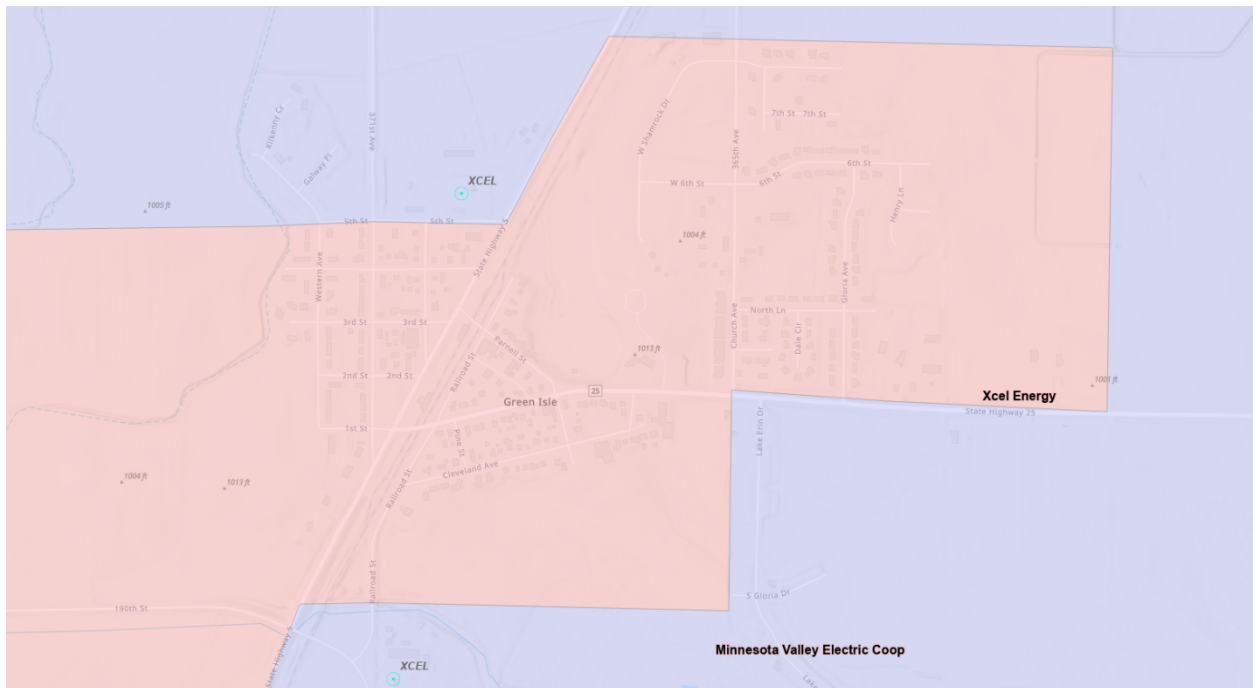
- The water system has a 75,000-gallon elevated storage tank.
- The city provides water service to approximately 330 connections.
- Past drinking water violations include an MCL violation for combined radium between 2005-2006 which was resolved.

## SEWER SYSTEM

- Green Isle has a shared wastewater treatment facility located in Arlington, MN.
- It is a Class A facility with a design flow capacity of 0.115 MGD.
- Treatment process consists of aerated lagoons, stabilization pond, and UV disinfection.
- Biosolids are land applied according to MPCA regulations.
- In 2017, approximately \$223,000 was spent on sewer system operations.
- There are around 270 sewer connections in the city.

## ELECTRIC SERVICES

- The primary electric utility providing service in Green Isle is Xcel Energy. They are an investor-owned utility that serves most of southern and central Minnesota.
- The second electric utility providing service in Green Isle is Minnesota Valley Electric Coop out of Jordan, MN.



- For electricity generation, Xcel Energy operates a mix of coal, natural gas, wind, solar and nuclear plants. Approximately 21% of their electricity supplied comes from renewable sources as of 2021.

- Customers have the option to enroll in Windsource, Xcel Energy's voluntary green power program. For a premium monthly fee, homeowners can purchase electricity generated exclusively from wind farms.
- Some residents choose to install their own on-site renewable energy like rooftop solar panels. However, there are few incentives for customer-generated power in Minnesota compared to other states.
- Municipal utilities or electric cooperatives that provide more renewable mix options are not available in Green Isle. The city is fully within Xcel Energy's service territory.
- As an alternative, homeowners could choose to install a standby generator that runs on propane, natural gas or diesel as a backup electricity source in case of power outages.
- Energy efficiency programs and rebates are available from Xcel Energy to help residents manage costs and electricity usage in their homes.

The "farm" is where Nathan grew up, a plot of around 200 acres. The farm is not a little less than an hour southwest of the Twin Cities. He tells us the farm life, along with the values it imparts, is difficult to leave behind. It's a

### NATURAL GAS

- As of 2018, approximately 85.4% of homes in Green Isle used utility (piped) gas as their primary heating fuel. Only 9.2% used electricity as their main heating fuel. The primary natural gas utility serving Green Isle is Xcel Energy. They provide piped natural gas to much of southern and central Minnesota
- Approximately 85.4% of homes in Green Isle use utility (piped) natural gas as their main heating fuel source.
- Xcel Energy offers various residential natural gas plans and pricing options for heating, water heating, cooking, etc. Rates are regulated by the state public utilities commission.
- For customers looking for an alternative to Xcel, there are no municipal natural gas utilities that service Green Isle.
- Propane can be used instead as a heating/cooking fuel alternative to natural gas. Some homes and businesses in Green Isle have private propane tanks. Several propane suppliers like Ferrellgas serve the area.
- Renewable natural gas (biomethane) is not currently available as an option.
- Energy for Green Isle residents. RNG availability is very limited in Minnesota.
- Homeowners could install an on-site renewable energy system like a geothermal heat pump that doesn't rely on natural gas. However, these systems tend to have high upfront costs.

### SOLAR OPTIONS

- Solar panels can be installed on rooftops or ground-mounted to generate electricity or heat water. Typical residential systems are 4-8 kW.
- The city gets around 4-4.5 peak sun hours per day, making solar reasonably feasible though not as high potential as further south.
- There are no local/state rebates or tax incentives for installing solar currently available in MN. The 30% federal tax credit is still available through 2032.
- Xcel Energy, the local utility, has a net metering program but no feed-in tariff or PPA options. Net metering allows selling excess power back to the grid.
- Community solar gardens that Green Isle residents can subscribe to are located in the City of Green Isle, or nearby Plato and Glencoe.

- The city has solar permit requirements beyond the county and state building codes.
- Average solar panel installation costs in Minnesota range from \$2.50-\$3.50 per watt. A 5 kW system would be around \$12,500-\$17,500 installed.
- A handful of solar installers operate in the broader region that could serve Green Isle like MN Community Solar, Steele Waseca Cooperative Electric.
- Off-grid solar with battery storage is an option but is more complex and doubles the system costs.



Green Isle Community Solar Garden

## INTERNET

- RS Fiber- Offers fiber internet with speeds up to 1 Gbps download/upload as well as bundled TV and phone services. Their fiber network covers most of Green Isle.
- Mediacom - Provides cable internet with speeds up to 1 Gbps. Their service area also includes most of Green Isle.
- StarNet - A wireless internet service provider with speeds up to 50 Mbps download/10 Mbps upload. They use fixed point-to-point wireless to serve rural areas.
- HughesNet - A satellite internet provider, speeds up to 25 Mbps down/3 Mbps up. Used in rural areas unreachable by other providers. Higher latency.
- Cellular data - Mobile hotspots or dedicated data lines from AT&T, Verizon, T-Mobile can provide home internet but with lower data caps and speeds. 5G service not yet available.

The city has a fiber optic backbone providing high speed infrastructure. Most residents can access cable or fiber connectivity. Satellite, wireless and cellular are alternatives for rural/remote regions near Green Isle. Overall the area is reasonably well-served for a small rural town regarding internet availability.

## TELEPHONE

- Landline phone service is provided by CenturyLink in the area. They offer traditional wired home phone service, along with bundles including internet and TV.
- VoIP phone services like Vonage, Ooma, and MagicJack allow using an internet connection for home phone service. These can offer lower costs compared to traditional landlines.
- Cell phone service is available from major providers like Verizon, AT&T, T-Mobile, and regional carriers. Coverage varies but is generally good in the Green Isle area. 5G service is not yet available.
- Satellite phone services like Inmarsat can provide coverage in extremely rural areas lacking cellular signals. But they require an unobstructed view of the sky and have higher costs.
- Traditional long-distance calling cards and services are an option for international calling without using a cell phone. Popular options include Googlevoice, Skype, and PennyTalk.
- There are no municipal telephone utilities located in Green Isle. Service is provided by private companies.
- The city retains a prefix code of 507 for all wired and wireless numbers.
- Emergency services can be reached by dialing 911 on any phone in the area.

The committee would like to see more options for refuse service in the City of Green Isle. The committee also highlighted the need to showcase the services available to new residents on the website. Especially the option for fiber to the home for individuals who work from home. Those that work from home who currently live in the Twin Cities could keep their jobs and move to Green Isle.

## STREETS AND UTILITY GOALS, OBJECTIVES AND POLICIES

**Goal: Provide reliable, efficient, and sustainable utility services to support the well-being and growth of the Green Isle community, while ensuring a well-maintained and safe street network.**

Objective 1: Maintain and improve the water system to ensure a safe and reliable water supply.

- Policy 1.1: Regularly monitor and test the water quality to ensure compliance with all state and federal standards.
- Policy 1.2: Develop a long-term plan for the maintenance, upgrade, and expansion of the water infrastructure to meet the community's current and future needs.
- Policy 1.3: Promote water conservation through educational campaigns and incentives for water-efficient appliances and practices.

Objective 2: Enhance the efficiency and sustainability of the sewer system.

- Policy 2.1: Collaborate with the City of Arlington to ensure the shared wastewater treatment facility operates effectively and meets the needs of both communities.
- Policy 2.2: Encourage the use of water-saving fixtures and appliances to reduce the burden on the sewer system.
- Policy 2.3: Explore opportunities for the beneficial reuse of treated wastewater, such as irrigation or industrial processes, to promote sustainability.

Objective 3: Promote the availability and adoption of renewable energy options.

- Policy 3.1: Encourage residents and businesses to participate in Xcel Energy's Windsource program or install on-site renewable energy systems like solar panels.
- Policy 3.2: Provide information and resources to help residents understand the benefits and process of adopting renewable energy options.
- Policy 3.3: Collaborate with Xcel Energy to explore opportunities for community solar gardens or other renewable energy projects in Green Isle.

Objective 4: Expand and promote high-speed internet access to support remote work and enhance quality of life.

- Policy 4.1: Showcase the availability of fiber-to-the-home internet services on the city's website to attract remote workers and new residents.
- Policy 4.2: Partner with internet service providers to ensure that all areas of the city have access to reliable, high-speed internet.
- Policy 4.3: Explore the creation of public Wi-Fi hotspots in key community locations to provide internet access for residents and visitors.

Objective 5: Improve solid waste management and provide more refuse service options.

- Policy 5.1: Collaborate with waste management companies to expand the range of refuse service options available to residents and businesses.
- Policy 5.2: Promote recycling and composting through educational campaigns and by providing accessible recycling and composting facilities.
- Policy 5.3: Encourage the reduction of waste generation through initiatives like "pay-as-you-throw" pricing and promoting the use of reusable products.

Objective 6: Maintain and improve the city's street network for safety and efficiency.

- Policy 6.1: Develop and implement a long-term street maintenance plan to ensure that all streets are kept in good repair and safe condition.
- Policy 6.2: Prioritize Street improvements based on factors such as traffic volume, pavement condition, and safety concerns.
- Policy 6.3: Incorporate "complete streets" principles into street design and improvements, accommodating the needs of pedestrians, bicyclists, and motorists.
- Policy 6.4: Explore funding opportunities, such as grants or partnerships, to support the maintenance and improvement of the street network.

By implementing these objectives and policies, Green Isle can work towards providing high-quality, sustainable utility services and a well-maintained street network that supports the community's growth and well-being.