

CHAPTER 2: NATURAL RESOURCES AND SUSTAINABILITY

NATURAL RESOURCES GOALS

Goal #1

Promote preservation of Blaine's high value natural resource areas for public enjoyment through passive and active recreational opportunities.

Goal #2

Promote and protect natural resources areas in the review and approval of new development

Goal #3

Elevate the importance of both maintenance and management of existing natural resources in open spaces and developed land.

Goal #4

Become a more sustainable city by continuing to focus on programs and policies that advance environmental enhancement.

Goal #5

Conserve water and air resources through a mixture of conservation practices, incentives, and/or regulation.

ENERGY AND SUSTAINABILITY GOALS

Goal #6

Encourage local production of solar energy and other renewable resources.

Goal #7

Incorporate climate change resiliency into city planning and decision making.

SUSTAINABLE COMMUNITY GOALS

Goal #8

Support and promote community-wide health initiatives.

Goal #9

Support community-wide environmental education campaigns, opportunities, and programming.

INTRODUCTION

This chapter addresses the goals and actions that the city will follow for the protection, preservation, and enhancement of natural resources as well as the actions that the city will utilize to become a more sustainable community. Emphasis is given to the following important resources and actions:

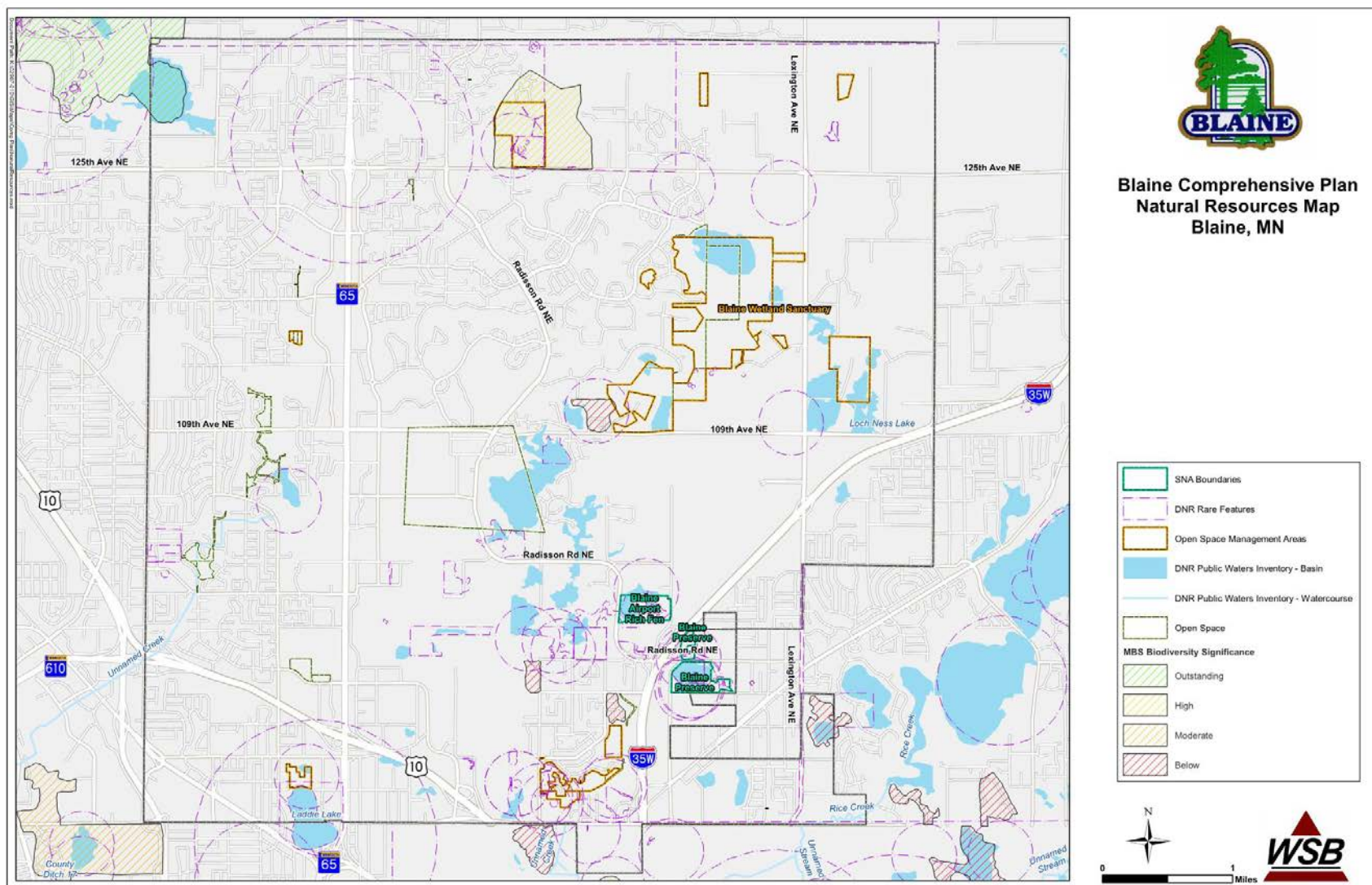
- Natural resource communities of high priority and open spaces for the preservation of biological diversity, public access, and environmental education outreach.
- Water resources including the quality, quantity, and preservation of surface and ground water.
- Renewable energy resources.
- Community-wide sustainability efforts.

NATURAL RESOURCE SUPPORTING DATA

Balancing community infrastructure development and natural resources preservation is a challenge for most communities amongst continued community growth. Locating and evaluating the remaining natural resources and open space areas within the city is an important step in determining the potential for restoration and preservation of resources into the future. Natural areas contribute to overall ecosystem health as well as provide aesthetic, public, and real estate value to land within the city. The DNR Natural Heritage Information System (NHIS) lists 63 rare features within the city. The Blaine Open Space Management Plan identifies over 11 priority open-spaces within the city which should be protected and preserved. These areas are shown on [FIGURE 2-1](#). Being aware of these rare features and natural open spaces enables the city to prioritize sites for protection, preservation or restoration. Selection of sites should be based on their ecological and cultural values, the ability for natural linkages between

other green spaces, and the ability to involve local residents and city staff in all phases of the preservation decision-making process.

FIGURE 2-1: NATURAL RESOURCES WITHIN THE CITY OF BLAINE



Natural Resources Conservation Board

Blaine has adopted the Natural Resources Conservation Board which is an advisory committee to the City Council. The board makes recommendations for action concerning land acquisition and environmental policy to the City Council. The Board should develop a Natural Resources Plan which contains criteria for all future open space acquisition. This Plan will include the policy and guidelines for the maintenance and preservation of existing and future open space. Open space sites that are a current focus include: 131st Avenue, Blaine Wetland Sanctuary, Hidden Ponds, Kane Meadows, Laddie Lake, Lever Street, Lochness Park, Oak Savannah, and Pioneer Park.

Open Space Management Plan

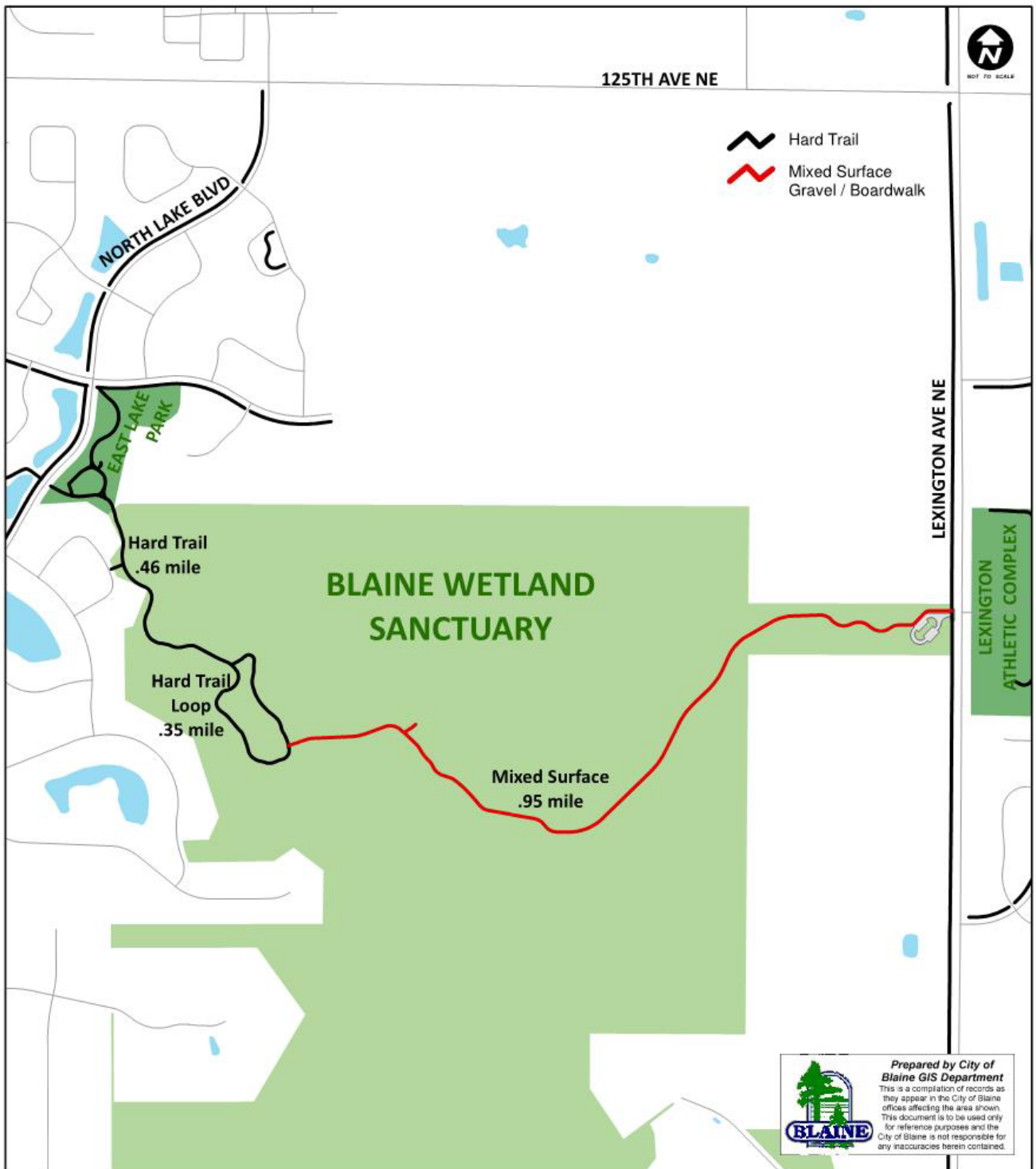
The City developed a Natural Resources Inventory (NRI) in 1999 which was utilized to create strategies for protection and enhancement of natural resources. Using the NRI, the city developed an Open Space Management Plan in 2008. Copies of the plan can be viewed on the City's webpage (<https://www.blainemn.gov/596/Natural-Resources-Conservation-Board>).

The Open Space Management Plan was adopted in 2008 and focuses on key sites of high priority within the city that are already designated as Open Space. This plan identifies recommendations for further action to protect and enhance natural sites within the city. In addition, the city currently has two DNR scenic and natural areas (SNA) within its limits; the Blaine Airport Rich Fen and the Blaine Preserve. The locations of these areas, as well as the locations of mapped DNR National Wetland Inventory (NWI) wetlands and DNR Public Waters Inventory (PWI) are included on [FIGURE 2-1](#). Other parks, open spaces, and trails throughout the city are shown on the [Figure 3-X – Parks and Trails Map](#) in Chapter 3.

Blaine Wetland Sanctuary Plan

The Blaine Wetland Sanctuary is a 500-acre open space west of Lexington Avenue which the city has preserved and opened to the public as a recreational and environmental education area. The wetland contains several rare and endangered plant species and the city is actively restoring and managing the wetland plant community to preserve these ecologically significant features. Management activities of this site will continue for five years after restoration efforts are complete. A boardwalk, pathways, trail heads, parking areas, bird watching blinds, overlooks and a future nature center will contribute to the recreational and environmental outreach goals of the city. The *Blaine Wetland Sanctuary Trail Map* is shown below in [FIGURE 2-2](#).

FIGURE 2-2: BLAINE WETLAND SANCTUARY TRAIL MAP



NATURAL RESOURCE PLANNING

The city's open spaces and natural resources contain a diversity of native and rare wildlife and plant species. Through the adoption of the Open Space Management Plan, the city has established a series of steps towards achieving their target project goals. The update of this plan and the development of a Natural Resources Plan will allow the city to identify current options for preservation, enhancement, and management of open spaces. Other organizations and individuals may also play an important role in the implementation of the city's natural resource related plans, such as:

Residents and landowners adjacent to natural areas should be encouraged to maintain or improve the natural vegetation and habitat quality of these open spaces or Greenway Corridors. Residents adjacent to high-quality natural areas or those utilizing protected areas should be educated in environmental protection practices.

Private developers may be required to assist with the implementation of plans by providing Greenways, green infrastructure, urban forest, and trails as a part of the park and open space dedication plan.

Watershed districts, Rice Creek Watershed District (RCWD) and Coon Creek Watershed District (CCWD), may work with the city to obtain additional conservation easements, maintenance activities, or funding resources for natural resource projects.

Planning for future development should consider native vegetation as a type of infrastructure. Urban forests are an important feature of expanding communities because they provide shade to reduce heat island effects, shield from snow drifts, produce oxygen and sequester carbon, produce biomass for fuels, provide aesthetic and calming values, increase habitat for wildlife, and increase real estate values. The planting of a diversity of species and a range of tree ages will help protect the city's trees against threats from disease and invasive pests. As the city continues to develop, there should be a focus on creating greens spaces with native vegetation that supports pollinators and local wildlife. Pollinators support biodiversity and the production of foods, fibers, oils, and medicines. The greatest immediate support of pollinator populations is to provide food and habitat through the planting of vegetated areas which include species of forbs that bloom throughout the year.

In addition to city conservation efforts on public lands, the preservation and enhancement of private lands within the city is imperative to protecting the city's

natural resources and increasing the city's resiliency in the face of climate change. Environmental education and outreach is a way to promote public awareness of current environmental threats, provide information on methods to protect and enhance the natural environment, teach about pollutants and water quality, and to inform residents about the importance of the natural environment and how it relates to public health and well-being. Managed open spaces provide ideal settings for public outreach, such as the Blaine Wetland Sanctuary. Public education campaigns can also provide useful information to residents that result in an overall healthy community. Educational content may include: recycling information, local energy reduction methods, organics composting, native plantings, rain garden installation, community clean-ups, public tree sales, etc.

As the natural environment is changing and the city is making progress towards achieving restoration, preservation, and management of high-quality natural resource areas, the city may need to update existing plans to reflect progress and to add additional areas that have been acquired or restored. Other natural resource plans should also be pursued that will allow the city to stay up-to-date with their policies and management strategies. The city should consider the following plan updates and additions:

- **Natural Resources Plan** – policy and guidelines for the maintenance and preservation of existing and future open space.
- **City-wide Wetland Assessment and Classification** – inventory and management classification based on functional assessment scores.
- **Pollinator Plan** – locations within the city where mowing does not need to occur and can be planted with native, pollinator-friendly plants.
- **Urban Forest Plan** – Identify goals for the protection, replacement, and selection of trees that are planted throughout the city. Identify strategies for possible tree disease or pest outbreaks, such as Emerald Ash Borer.
- **Open Space Management Plan** – update the existing plan.
- **Natural Resources Inventory (NRI)** – update the existing plan.

External funding sources may be available to the city for natural resources related projects. Possible external funding available for city projects includes:

Grant	Funding Entity	Project Type
Lessard-Sams Outdoor Heritage Council (LSOHC)	LSOHC	Conservation and preservation
Legislative-Citizen Commission on Minnesota Resources	LCCMR	Environment and natural resources

(LCCMR)		
Conservation Partners Legacy	DNR	Conservation efforts
Aquatic Invasive Species Control Projects	DNR	Aquatic invasive species control
Park Legacy Grants	DNR	Parks
Trails Legacy Grants	DNR	Trails
Regional Parks Grants	DNR	Parks
Regional Trails Grants	DNR	Trails
Accelerated Implementation Grant	BWSR	Approved water plans
Projects and Practices	BWSR	Approved water plans in metro

SUSTAINABILITY SUPPORTING DATA

Renewable Energy Resources

Climate change poses a substantial threat to the health, prosperity, and security of the community. Climate change can lead to:

- Extreme weather event clean-up and reconstruction,
- Adverse effects on plant and wildlife habitats,
- Threats to food and water supplies,
- Management of snow and ice,
- Temperature changes,
- Invasive plant and insect control and removal or replanting of trees,
- Human health concerns such as new disease or sicknesses.

In the face of climate change, it is important that the city incorporates measures of energy reduction and energy related greenhouse gas emission reduction into community planning. Areas of focus for energy-related reductions should include residential, business, industrial, transportation, land use, and renewable energy. Considerations for each of these focus areas may include:

Residential – education campaigns, promoting recycling and composting opportunities, efficient appliances and lighting incentives, renewable energy subscription incentives, rooftop solar, and native plant sales.

Business and Industrial – energy-efficient construction and demolitions incentives, lighting upgrades, renewable energy use, and green infrastructure requirements.

Transportation and Land Use – Bicycling and walking trail connectivity, green space, fuel efficient vehicle incentives, electric vehicle charging stations, urban forests, public transit, and shared parking.

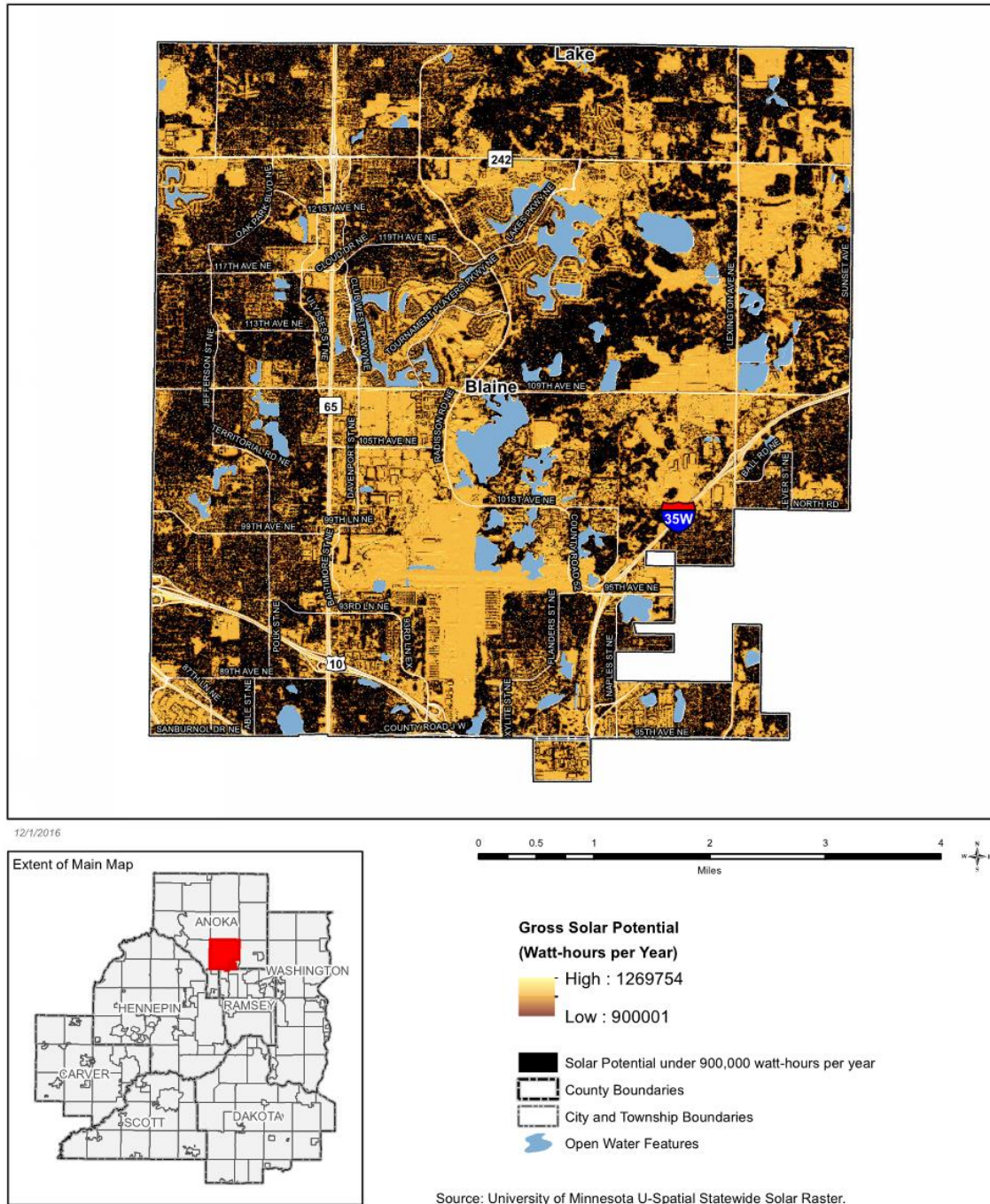
Renewable Energy – Explore solar ordinances, encourage renewable energy subscriptions, rooftop solar on city buildings, and educate residents.

Energy conservation and reduction is an important step in developing climate change resiliency within the city. Other resiliency opportunities involve utilizing renewable energy resources. Solar energy can bring environmental and economic benefits to a community through clean energy production, creation of local jobs and revenue, and improved property values. It is important that solar resources are integrated into the decision-making framework of community development while taking into consideration other factors such as competing development and resources, community benefits, and land use forms.

The local landscape and existing development defines whether an area can be utilized for solar energy. An adequate solar resource is a site that is unshaded for at least 6 hours a day, both now and into the future. The Metropolitan Council has mapped the gross solar potential in the City of Blaine which is shown on [FIGURE 2-3 – Solar Potential Map](#). The gross solar potential and gross solar rooftop potential were calculated by the Metropolitan Council to assess the total potential of solar resource available within the City. These calculations can be utilized as a planning and decision-making tool for future development before removing areas unsuitable for solar development or factors related to solar energy efficiency.

FIGURE 2-3. SOLAR POTENTIAL WITHIN THE CITY OF BLAINE.

Gross Solar Potential City of Blaine, Anoka and Ramsey Counties



The gross solar generation potential and the gross solar rooftop generation potential for your community are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The following table shows the gross solar potential was determined for the City of Blaine.

Community	Gross Potential (Mwh/yr)	Rooftop Potential (Mwh/yr)	Gross Generation Potential (Mwh/yr)	Rooftop Generation Potential (Mwh/yr)
Blaine	50,751,140	3,441,213	5,075,114	344,121

Sustainable Community

Fostering a healthy community can be accomplished through better food choices, encouraging active lifestyles, and educating the public about the environment, water resources, pollution prevention, and energy reduction.

The city should further explore opportunities to educate and encourage healthy lifestyle and environment choices for the community. Healthy lifestyle choices can be incorporated into city planning and decision making, and should consider:

- Enhanced recycling project.
- Energy reduction incentives and retrofits.
- Native pollinator vegetation plantings.
- Vegetated buffers.
- Local or community gardening and composting.
- Pollution prevention such as lawn care, pet waste, pesticides/herbicide
- Organized active or outdoor community events.
- Environmental education programming.
- Local access to food resources.
- Healthy lifestyle education campaign.
- Connectivity of parks, trails, and open spaces.

NATURAL RESOURCES ACTION ITEMS

Action #1

Continue to pursue the habitat enhancement, management, and protection of the Blaine Wetland Sanctuary and all other open spaces.

Action #2

Develop environmentally-focused recreational and educational opportunities in open spaces with focus on natural resource conservation.

Action #3

Capitalize on street reconstruction, new development, and redevelopment as an opportunity to plant more trees and achieve a more robust urban tree canopy.

Action #4

Identify and implement vegetated corridors and connections throughout the city which allow for natural movements of wildlife as well as recreational opportunities such as hiking.

Action #5

Update the Natural Resources Inventory and Open Space Management Plan and develop a Natural Resources Plan with new policies and guidelines for the maintenance and preservation of open spaces and natural areas. Continue to identify new areas for protection and enhancement within the city.

Action #6

Stay up-to-speed on Best Management Practices related to conservation, wildlife protection, wetland preservation, and low impact development standards.

Action #7

Increase stormwater infiltration throughout the city by examining “stacked function”, where stormwater management, open space, recreation opportunities, and natural resource/habitat enhancement can be achieved through one project or effort.

Action #8

Adopt park and city land management standards that maximize native landscaping and low-maintenance management.

Action #9

Develop a Pollinator Planting Plan and consider enact a Native Plants First planting policy on city-managed park and open space.

Action #10

Prioritize the preservation of lands which contain endangered, threatened, and special concern species or critical habitats.

Action #11

Encourage updating the City's ordinance to be more flexible toward taller, no-mow native grasses and flowers which provide pollinator food and habitat as well as surface water treatment.

Action #12

Create incentives and programming to increase tree and pollinator-friendly plantings on private lots and in public right-of-way.

Action #13

Support actions that help to achieve soil health citywide.

SUSTAINABLE ENERGY ACTION ITEMS

Action #14

Investigate and implement the use of sustainability design practices, such as green roofs, into new city projects and developments, and as retrofits of existing buildings.

Action #15

Develop a plan to improve the energy efficiency of existing municipal buildings.

Action #16

Incent local homeowner's associations to allow and promote solar and other renewable energy resources.

Action #17

Maximize the production of solar energy to the extent feasible, while enhancing biological, agricultural, and environmental features.

Action #18

Adopt reasonable zoning that allows for the use of alternative forms of energy (i.e. wind and solar).

Action #19

Develop a CO₂ emissions reduction goal and plan for city buildings, services, and vehicles and continue to review actions that will reduce city GHG emissions, such as replacing the police fleet with hybrid or fuel-efficient vehicles and using electric mowers for city-owned property.

Action #20

Continue to explore options for community solar gardens within the city.

Action #21

Participate in the GreenStep Cities program.

SUSTAINABLE COMMUNITY ACTION ITEMS

Action #21

Continue and expand the weekly farmer's market and community garden efforts.

Action #22

Pursue becoming a Bicycle Friendly Community through the League of American Bicyclists.

Action #23

Encourage and support environmental education programs and recreational opportunities within the city.