# City of Mahtomedi – Prelim CPU

## RESILIENCE

### Energy Infrastructure and Resources

□ Solar Resource Protection: Include your community's Minnesota Solar Suitability Analysis Map.

□ Solar Resource Protection: Include calculations of your community's gross solar and rooftop solar resource.

- *Include "Gross Potential" and "Gross rooftop" potential calculation as the Production calculations represent a VERY conservative 10% production conversion efficiency. Conversion efficiency changes every year with technological advances, but the gross potentials will remain the same for millions of years. As such, the Council recommends using all four (4) figures with the production calculation being a starting point to inform policy and goal setting development and strategies.*

□ Solar Resource Development: Include a policy or policies relating to the development of access to direct sunlight for solar
energy systems.

□ Solar Resource Development: Include strategies needed to implement the policy or policies.

## THRIVE 2040 OUTCOMES

The City's Plan must also use the Metropolitan Council's Thrive 2040 Outcomes as "lenses" through which we view the city's future. Each chapter of the Plan works to achieve a balance between the following Thrive 2040 Outcomes:

1. Stewardship: responsible management of natural and financial resources and making strategic investments in the future.

2. Prosperity: investing in infrastructure and amenities that attract and retain successful businesses, a talented workforce and, consequently, wealth.

3. Equity: connecting all residents to opportunity. This includes viable housing, transportation, and recreation opportunities.

4. Livability: creating and renewing vibrant places and underlying infrastructure that build community identity; investing in parks and affordable housing; and collaborating with neighbors.

5. Sustainability: protecting regional vitality for generations to come. This includes promoting wise use of water; climate change mitigation, adaptation and resilience efforts.

## Chapter 2: Vision and Goals

4. Mahtomedi's parks are constructed and maintained based on the principles of sustainability.

   a. In all park decisions, acknowledge the interrelationship and balance between natural resources, the economy, and the social aspects of life in Mahtomedi and its park system.

   b. Showcase Mahtomedi parks as a model, or demonstration, of how sustainable development principles can be applied throughout the City.

## Chapter 4: Land Use

### SOLAR ACCESS, WIND ENERGY CONVERSION SYSTEMS, AND SIMILAR ISSUES

The City has experienced increased interest by property owners to integrate solar equipment, wind energy conversion systems, geothermal and similar technology into development. Roof-mounted solar installations are currently allowed and encouraged by the City in all zoning districts.

The City recently updated its zoning ordinance to allow small-scale solar installations (ground-mounted) in Public and Semi-Public districts. Amendments have also been made to allow wind and solar systems

on private residential property. The City will continue to explore opportunities to allow and promote sustainable energy generation to its residents and business owners while respecting neighboring property rights and preserving neighborhood character. Refer to the sustainability chapter of this Plan for additional information.

## Chapter 7: Parks, Trails, and Open Space

**GOAL PP-4: Mahtomedi parks are constructed and maintained on the principles of sustainability.**

**Objective PP-4.1: In all park decisions, acknowledge the interrelationship and balance between natural resources, the economy, and the social aspects of life in Mahtomedi and its park system.** Policy PP-4.1.a: Construct and maintain park facilities, equipment, furnishings, and so on, in a manner consistent with current environmental initiatives. For example, implement site furnishings that are made of recycled materials and/or are able to withstand harsh park environments to minimize ongoing maintenance and replacement needs, integrate **solar energy**, design to LEED standards, etc.

**Objective PP-4.2: Showcase Mahtomedi parks as a model, or demonstration, of how sustainable development principles can be applied throughout the city.** Policy PP-4.2.a: Provide demonstration areas, including educational/ interpretive signs, that illustrate key sustainability principles. For example, provide a lake-scaping demonstration area at Wildwood Park, showcase native landscapes at Katherine Abbott and Neville Pond, create a pollinator garden area within a park setting, demonstrate innovative storm water management techniques, etc.

## Chapter 8: Sustainability

### Energy Infrastructure and Efficiency

**Mahtomedi promotes alternative energy resources, reduction in energy consumption, and reduction of energy-related emissions.**

Energy planning plays a critical part of reaching community energy goals and Mahtomedi has taken the initiative to develop an Xcel Energy Partners in Energy Action Plan. The Plan provides the city with support for developing and implementing an energy plan tailored to the community's needs and priorities while focusing on reductions in energy use and greenhouse gas emissions.

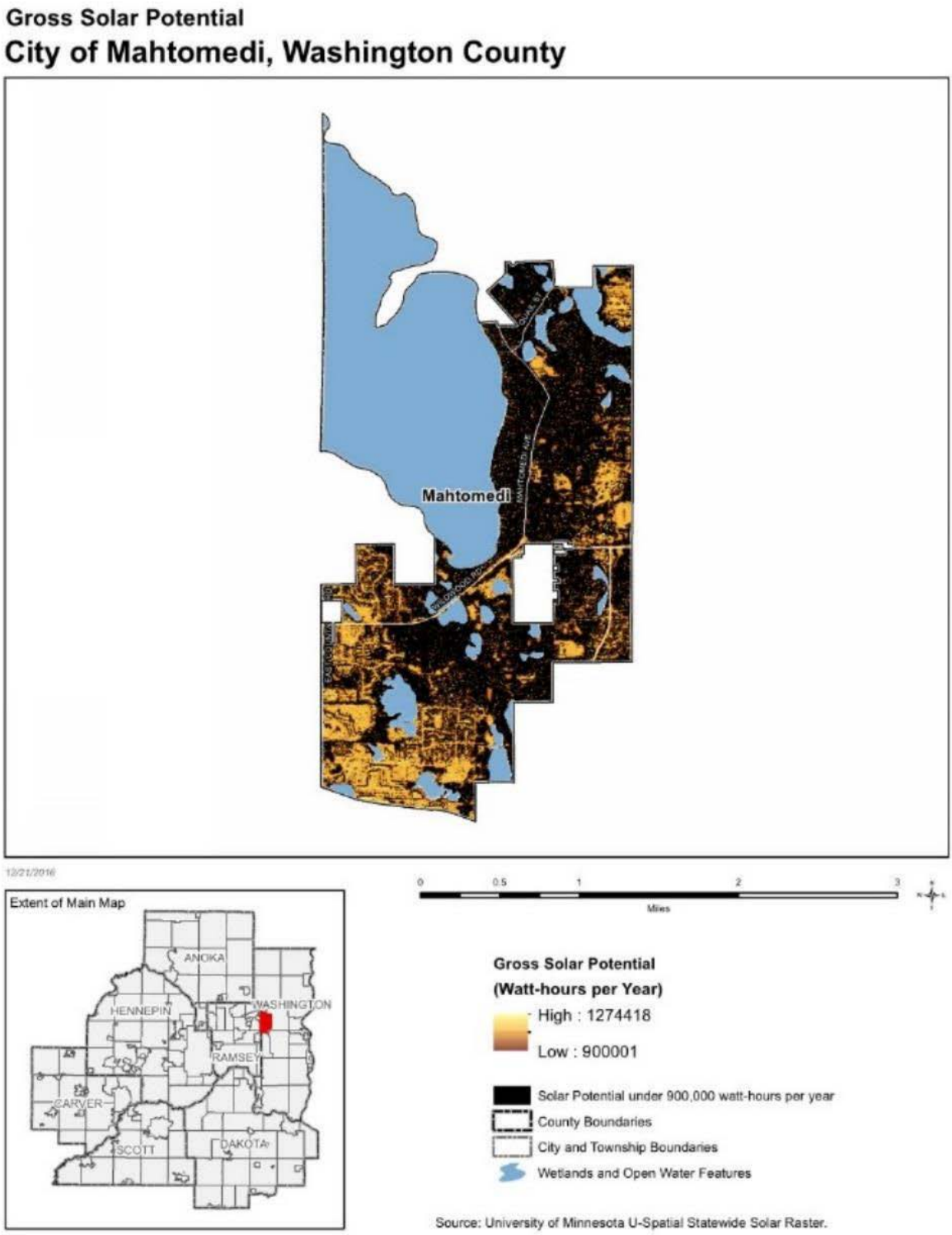
Solar development can bring environmental and economic benefits to a community through clean energy production, creation of local revenue, and improved property values. It is important that solar resources are integrated into the decision-making framework of community development while taking into consideration other factors such as competing development and resources, community benefits, and land use forms. Solar generation calculations were provided by the Metropolitan Council and should be utilized as a planning and decision-making tool for future development before removing areas suitable for solar energy production.

Currently, Mahtomedi has established a zoning ordinance to allow solar equipment that is consistent with setback and height requirements of the principal or accessory building. The city has also adopted ordinance language for the use of wind renewable resources within the community, and both forms of renewable energy are currently in use within the city. In 2015, the city participated in the Solar Garden Lottery program with the Metropolitan Council which resulted in an allocation for the city to offset 690,069 KWh through solar gardens. Nineteen solar garden assignment agreements were approved by the city council in February 2017.

The Metropolitan Land Planning Act requires that the comprehensive plan shall contain “an element for the protection and development of access to direct sunlight for solar energy systems” (Minn. Stat. 473.859). An analysis of Mahtomedi’s solar energy capacity, based on exposure to sunlight, indicates that the city does have solar resources available for alternative energy production. The estimates are based on the total potential resources in the community and it is estimated that Mahtomedi has a Gross Generation Potential of 322,083 Mwh/yr (Figure 1) and a Rooftop Generation Potential of 33,595 Mwh/yr based on existing technology and assumptions on the efficiency of energy conversion.

In alignment with the state requirements of identifying protection of renewable resources, the community has a strong desire to set specific goals related to energy-related greenhouse gas emission reduction and energy consumption reductions. In 2016, the city used 46.7 million kWh of electricity and 3.46 million therms of natural gas based on utility data (Xcel Partners in Energy). It is estimated that, as a ramification of electricity and natural gas use, Mahtomedi had 38.7 MTCO2 (thousands) energy-related greenhouse gas emissions in 2016. The Mahtomedi Partners in Energy Action Plan has established the following energy reduction goals:

- Achieve a 30 percent reduction in energy-related greenhouse gas emissions by 2030 and a 100 percent reduction (carbon neutrality) by 2050.
- 1.4 percent average annual energy savings to reduce energy consumption 19 percent by 2030.




MAP 8-2. GROSS SOLAR CAPACITY THAT COULD PRODUCE 322,083 MWH/YR OF ELECTRICITY WITH CURRENT TECHNOLOGY. SOURCE METROPOLITAN COUNCIL.

# 2040 Sustainability Goals and Strategies

Implementation strategies for each goal provide a "roadmap" for the community to follow in order to achieve "A Sustainable Future". The 2040 sustainability goals and strategies are structured using categories identified by the Metropolitan Council's Report on Resilience.

## Infrastructure and Environmental Assets

• Continue the GreenStep Cities program.

• Investigate adopting sustainable vegetation management ordinances which allow for native tall grass plantings.

• Adopt or amend tree ordinance language to promote species diversity of future tree plantings to reduce concerns for tree species which are targeted by disease and biological pressures.

• Consider developing a Natural Resources Management Plan which identifies areas of sensitive resources which should be preserved, enhanced, and protected; incorporate protection of priority natural systems or resources.

• Educate residents about the water quality benefits of rain gardens and living streets, and provide support and guidance on installation.

• Encourage residents and businesses to plant native, pollinator-friendly vegetation.

## Energy Infrastructure and Renewable Resources

• Establish zoning ordinances to allow solar as an accessory use in all districts.

• Encourage residents to use or subscribe to renewable energy resources such as creating a program that enables community members to participate in a community renewable energy project.

• Protect access to solar resources and maximize renewable energy resources in new development while minimizing potential adverse impacts to biological, visual, and natural resources.

• Achieve the following goals which are outlined in the Xcel Partners in Energy, Mahtomedi Action Plan:

    o 30 percent reduction in energy-related greenhouse gas emissions by 2030 and a 100 percent reduction (carbon neutrality) by 2050.

    o 1.4 percent average annual energy savings to reduce energy consumption 19 percent below the 2016 baseline by 2030.

• Reduce community water use and energy needed to treat, deliver, and collect wastewater.
• Consider the use of renewable energy on city buildings.

## Healthy Community

• Implement policies to make sustainability a part of resident's daily lives and take necessary actions to keep citizens informed of sustainable policy decisions.

• Use a committee to lead, coordinate, and report to community members on implementation of GreenStep best practices.

• Increase community access to local food resources by promoting Community Supported Agriculture (CSA) farms, Mahtomedi farmer's market, and residential and community gardens.

• Implement actions or develop policy that minimizes the production of waste by maximizing reuse, recycling, and composting.

• Implement incentives that encourage local businesses to participate in sustainable practices, such as the Washington County Business Recycling Program.

• Promote sustainable transportation infrastructure and adopt zoning language that aligns with the Green Streets Program strategies.

• Pursue becoming recognized as a bicycle friendly community through the League of American Bicyclists.

• Develop specific healthy community initiatives and strategies in the city's Sustainability Plan Update.

## Economy and Society

• Encourage green business development such as promoting:

- o Shared parking to reduce impervious;
- o Buildings located within walking distance from transit;
- o Focus on reuse and recycling during redevelopment;
- o Green buildings;
- o Low-impact site development.

• Integrate climate resilience into city planning, policy, operations, and budgeting processes.