INTRODUCTION

The Metropolitan Land Planning Act requires that comprehensive plans for Metropolitan Area communities to contain an element related to the protection and development of access to direct sunlight for solar energy systems. As a result, the following solar resource-related information must be included in the Elko New Market's 2040 Comprehensive Plan update:

1. A map which illustrates the City's gross solar potential.

2. A calculation of the City's solar resources.

3. A policy (or policies) which relate to the development of access to direct sunlight for solar energy systems.

4. Strategies to be applied to implement established solar resource policies.

SOLAR PLAN

Solar Potential

Attached as Figure 8.1 is a graphic depiction (map) of Elko New Market's gross solar potential. The map was developed by the University of Minnesota and is being utilized by the Metropolitan Council. The map illustrates annual sun energy dispersed throughout the City with "high end" potential areas shown in yellow and areas having "low end" energy potential illustrated in black. Such information can be used to predict the productivity of solar installations. According to the Metropolitan Council, the primary issue in the consideration of solar energy installations is intermittent shading due to nearby structures and trees. In this regard, areas which are shown to have "high end" potential in the City are those areas with very little tree cover.

Solar Resource Calculations

Table 8-1 below provides an approximation of Elko New Market's solar potential. The gross solar potential and gross solar rooftop potential, as provided by the Metropolitan Council, are expressed in megawatt hours per year (Mwh/yr). To be noted is that the calculations estimate the current potential resource of the City (prior to the removal of areas considered unsuitable for solar development or factors related to solar efficiency).

Table 8 - 1

Elko New Market - Gross Solar Potential (Megawatt Hours per Year)			
Gross Potential (Mwh/yr)	**Rooftop Potential (Mwh/yr)**	**Gross Generation Potential (Mwh/yr)**	**Rooftop Generation Potential (Mwh/yr)**
6,880,061	193,918	688,006	19,391
Source: Metropolitan Council			

Metropolitan Council Notes:

- In general, a conservative assumption for panel generation is to use 10 % efficiency for conversion of total insolation into electric generation.
- The rooftop generation potential does not consider ownership, financial barriers or building-specific structural limitations.

The estimated gross solar generation potential and gross solar rooftop potential are intended to convey how much electricity could be generated in the City of Elko New Market using existing technology and assumptions on the efficiency of conversion. According to the Metropolitan Council, for most cities, the rooftop generation potential is equivalent to between 30 and 60 percent of a community's total electric energy consumption. To be noted is that there is no minimum amount of solar resource development required for cities in the Metropolitan Area.

Solar Policies

The City of Elko New Market has established the following policies which relate to solar resources:

1. Promote reasonable access to solar energy by controlling artificial blockage of solar radiation through land management tools, such as zoning and building codes, for optimum long-term economic and environmental benefits.

2. Encourage residential solar development which maintains community and neighborhood character.

3. Increase energy resilience of critical facilities such as police, fire and emergency and hazard response centers.

4. Fairly balance the development rights of land owners with solar resources with the community character rights of adjacent landowners.

5. Encourage the development of community solar gardens on lands outside of the City's 2040 MUSA boundary which retain the community character and provide co-benefits such as the creation of pollinator habitat.

Solar Goal Implementation

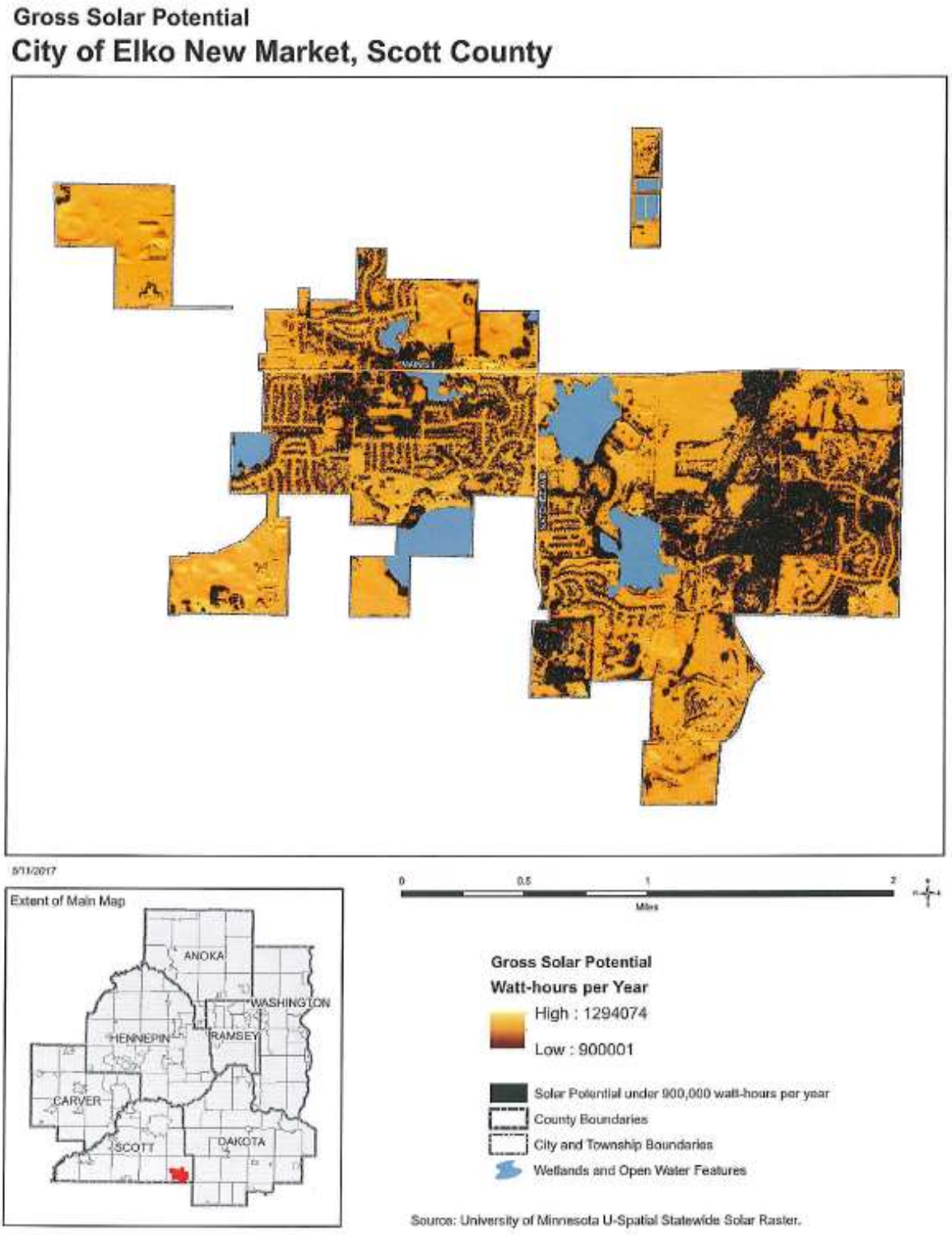
City actions will include the following:

- Consider changes needed to local ordinances which will make solar energy more feasible. This may include evaluating regulations to allow additional solar opportunities in the City's Institutional zoning districts (schools, churches, public facilities).

- Continue to accommodate alternative energy systems (wind, solar and geothermal) in accordance with applicable Ordinance requirements.

- Continue to monitor technological changes which relate to alternative energy systems, including solar, to ensure that the City's Ordinance provisions respond to such changes in a responsible manner.

Figure 8.1


Gross Solar Potential
City of Elko New Market, Scott County
5/11/2017
Extent of Main Map
ANOKA
WASHINGTON
HENNEPIN
RAMSEY
CARVER
SCOTT
DAKOTA
0
0.5
1
2
Miles
Gross Solar Potential
Watt-hours per Year
High : 1294074
Low : 900001
Solar Potential under 900,000 watt-hours per year
County Boundaries
City and Township Boundaries
Wetlands and Open Water Features
Source: University of Minnesota U-Spatial Statewide Solar Raster.