

CHAPTER 11: Resilience

11.1 Energy Conservation

11.1.1 Alternative Energy Systems & Fuels

In recent years, attention has been drawn to the nation’s energy supply. Historically, most of Brooklyn Park’s energy came from non-renewable sources. These resources are in limited supply as well as some having been linked to negative environmental impacts. The City has taken steps to make our facilities more efficient and develop alternative energy sources. In addition, we have modified city code to allow facilities that support alternative energy such as wind and solar. The following are examples of the work that has been done and will continue into the future.

Solar Access

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 Brooklyn Park’s solar energy capacity, based on exposure to sunlight, indicates that the city does have solar resources available for alternative energy production. These estimates are based on the total potential resources in the community and are as follows:

Community ¹	Gross Potential (Mwh/yr)	Rooftop Potential (Mwh/yr)	Gross Generation Potential (Mwh/yr) ²	Rooftop Generation Potential (Mwh/yr) ²
Brooklyn Park	42,427,421	4,393,779	4,242,742	439,377

¹ There are a few communities where generation potential calculations could not be produced. There are areas within some maps where data was unusable. These areas were masked and excluded from gross rooftop potential and generating potential calculations.

² In general, a conservative assumption for panel generation is to use 10% efficiency for conversion of total insolation into electric generation. These solar resource calculations provide an approximation of each community’s solar resource. This baseline information can provide the opportunity for a more extensive, community-specific analysis of solar development potential for both solar gardens and rooftop or accessory use installations. For most communities, the rooftop generation potential is equivalent to between 30% and 60% of the community’s total electric energy consumption. The rooftop generation potential does not consider ownership, financial barriers, or building-specific structural limitations.

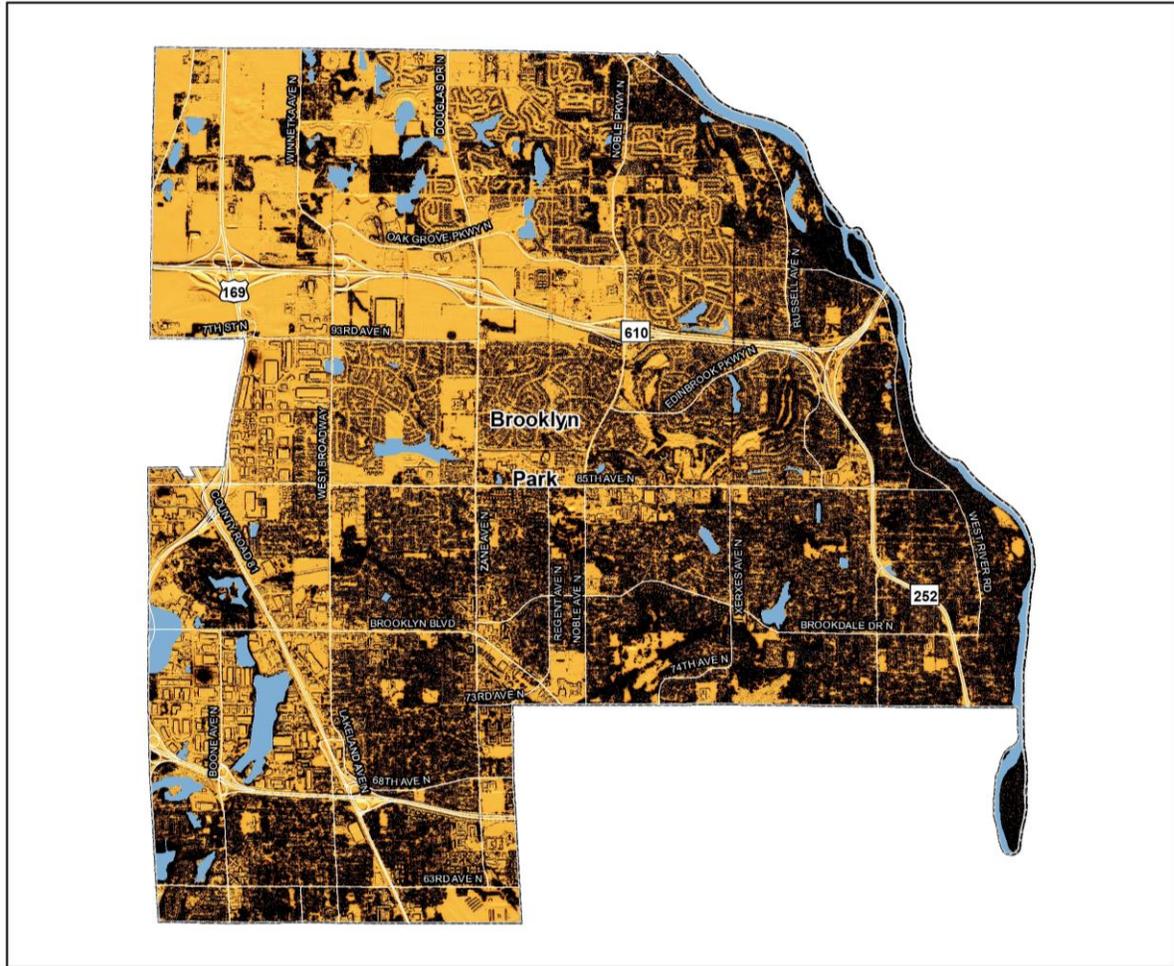
June 2017

Source: Metropolitan Council

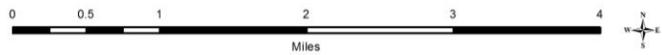
Map 11-1 shows the gross solar potential for the City.

Map 11-1: Gross solar capacity that could produce 4,242,742 Mwh/yr of electricity with current technology. Source Metropolitan Council.

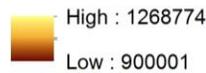
Gross Solar Potential City of Brooklyn Park, Hennepin County



12/2/2016



Gross Solar Potential (Watt-hours per Year)



■ Solar Potential under 900,000 watt-hours per year

▭ County Boundaries

▭ City and Township Boundaries

■ Open Water Features

Source: University of Minnesota U-Spatial Statewide Solar Raster.

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. The City is committed to allowing businesses and residents' access to direct sunlight for solar energy systems. Solar energy collectors are permitted accessory uses in all of the City's zoning districts. Residents and businesses are encouraged to include such systems as part of their homes or buildings.

The City is installing solar systems at multiple locations on city facilities in order to provide power to city buildings.

Alternative Fuels

The City of Brooklyn Park has been a leader in using biodiesel in all City diesel-fueled trucks and maintenance equipment. The City will continue to use alternative fuel vehicles, including E-85 and hybrid vehicles.

The city has an oil recycle center that accepts oil that is then cleaned and used as a fuel source instead of natural gas in particular buildings on the Operation and Maintenance campus.

Wind

The City is committed to allowing businesses and residents' the ability to have wind as a power source on their properties. The city code was changed in 2012 to allow wind generation equipment of various types and sizes in all zoning districts.

Geothermal System

The city installed a system to support the heating and cooling requirements at the Community Activity Center. Providing an energy and water savings for the operation of the ice rinks in the facility.

Lighting

The city has completed a number of lighting projects to help in energy conservation. Lighting inside most city facilities has been converted to motion sensor fixtures. In addition, lighting types have been converted to energy efficient systems. Exterior lighting on many streets and city parking facilities have been converted to LED or induction lighting systems. All lighting changes have resulted in cost savings and reduced energy use.

Other Systems

Technological advancements and new discoveries in energy systems could lead to individual energy systems that are appropriate for an urban or suburban environment. The City will continue to work at with property owners as these systems are introduced and to change our own facilities as appropriate.

11.2 Recycling

Brooklyn Park was the first city in Minnesota to adopt residential single-stream recycling in which all recyclables are placed together in a cart for automated collection. Service is provided to all residents at the place where they live whether it be single family or multifamily residential buildings.

Recycling is one of the easiest practices residents can use to reduce their impact on greenhouse gas emissions. More than 150 tons of recyclable materials are collected through the curbside program every month.

Textile Recycling. In 2017 Brooklyn Park added curbside collection of clothing and textiles for reuse or recycling. According to the U.S. EPA, 85% of used clothing is disposed of in the trash. Clothing is one of the ten top materials most frequently found in residential trash in Hennepin County.

Special Materials Drop-Off Days. Not everything that is recyclable can go in your trash. Twice a year Brooklyn Park hosts a special drop-off for residents to bring in certain unwanted items. This event is held at the Brooklyn Park Operations and Maintenance facility at 8300 Noble Avenue North.

Organics Composting. After Halloween each fall the City has a drop-off station for pumpkins. They are composted at our Environmental Area and the finished compost is used by city crews on various landscaping projects.

Hennepin County will be enacting an ordinance requiring cities to provide curbside residential organics collection. A recent study by Hennepin County found that more than a third of residential trash is organics would could be composted instead of being managed with garbage. For a composting program, residents would separate out food scraps (including meat and dairy) and non-recyclable papers such as napkins. Those items would be hauled to an industrial composting facility.