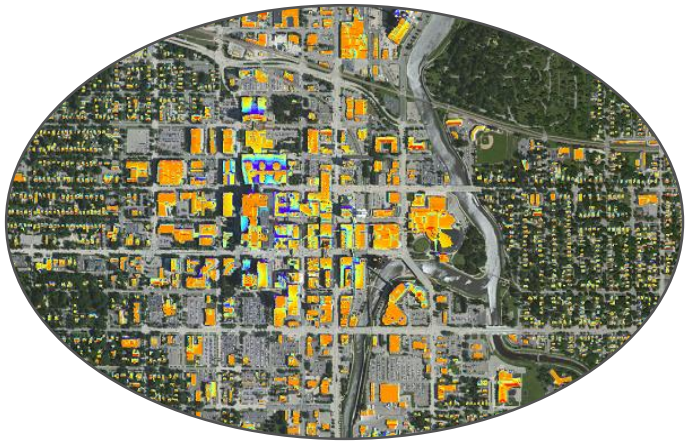
Grow Solar

Solar in Comprehensive Planning

Purpose

Comprehensive plans are the foundational policy document reflecting a community's priorities and values regarding development and local resources. Solar energy resources are an increasingly valuable local resource — solar development can bring environmental and economic benefits to a community through clean energy production, creation of local jobs and revenue, and improved property values. Communities are acknowledging this valuable resource and incorporating support and guidance for solar energy development into comprehensive plans, sending a strong message of commitment for sustained growth in the solar energy sector.

Communities are not, however, familiar with the characteristics of solar resources and solar land uses. This document outlines considerations that communities should make and identifies elements that allow for clear priorities around solar energy objectives. Identifying how solar development can benefit the community will help decision-makers determine how solar resources and investments are integrated into the community in a way that balances and protects competing development or resources.



Downtown Solar Resource Map. Rochester, MN

Considerations

When addressing solar development in a comprehensive plan, it is important to acknowledge what makes solar work for a community as well as the inherent conflicts that may arise. Any comprehensive plan that includes a solar component should:

1. Address the solar resource and the different land use forms that solar development can take
2. Acknowledge the multiple benefits of solar development
3. Guide decision-makers on optimizing opportunities when solar development might conflict with other resources or land use forms

Each of these components can help a community identify how they wish to include solar as a resource and to be able to reasonably justify why and where solar development is supported.

Solar Resource

The local landscape (e.g., topography, on-site obstructions, obstructions on adjacent land, potential future obstructions) defines whether or not a given site has a good solar resource. An adequate solar resource is a site that is unshaded for at least 6 hours a day, both now and into the future. Communities can map their solar resource using LiDAR data that is frequently available in urban areas, and in some states even in rural areas. Such a map can allow the community to measure the size of their “solar

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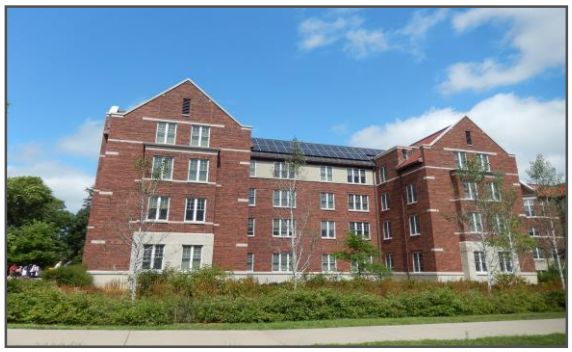
reserves" identify areas with good and poor resources for prioritizing development in a manner consistent with other land uses, and even distinguish between opportunities for rooftop and ground-mount solar development opportunities.

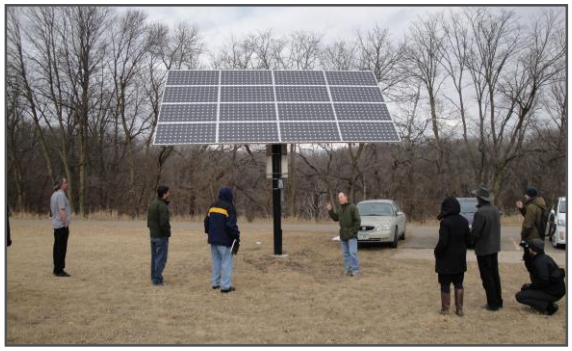
In addition to measuring and recognizing the solar resource, communities should recognize that a variety of methods exist to capture the energy and provide economic value. There are several different types of solar installations a community will want to consider: rooftop, accessory ground-mount, and principal ground-mount. A community can use the comprehensive plan to determine which of these technologies to support and/or promote.



Rooftop Solar

Solar Benefits

Communities can realize a number of benefits through solar development, including environmental, energy production, and economic development. Environmental benefits include helping meet local air quality or climate protection goals. Communities with renewable energy or energy independence goals can better achieve these through explicit support of solar energy development. Economically, solar development creates construction jobs for a variety of trades, financially benefits those who install systems on their properties with lower energy bills, and increases the property value of buildings within the local housing market.



Ground Mount System

Land Use Conflicts

Like any development, solar may come into conflict with other land uses, and solar resources are often co-located with other important local resources. Recognizing these issues in the comprehensive plan can help to mitigate future problems. Some conflicts to consider include:

Solar Farm

- **Agricultural practices**
- **Urban forests**
- **Historic resources**
- **Airport control towers**
- **Natural areas**
- **Future housing or commercial development**

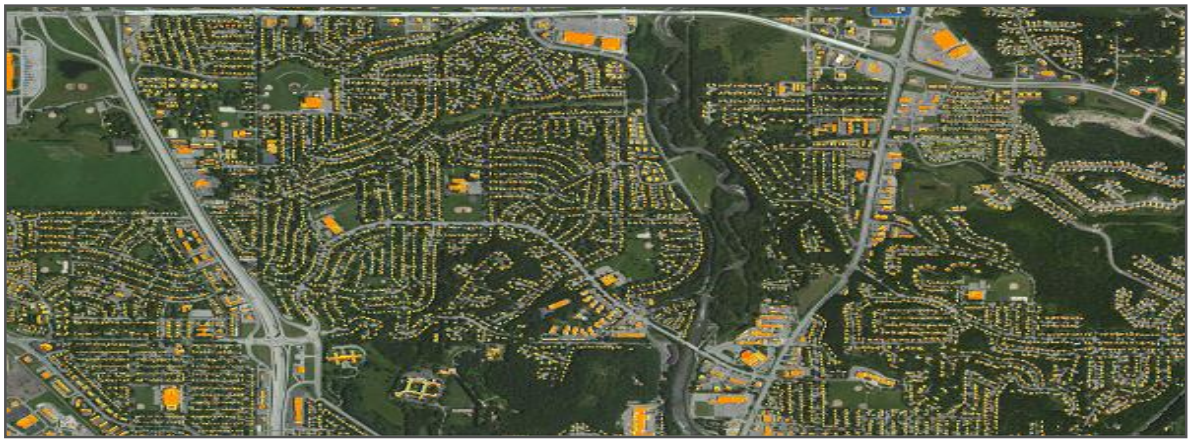
Each community is different and may see conflicts arise that are not listed here. Identifying and addressing those conflicts in comprehensive planning will need to happen at the community level.

Elements

Common features of a comprehensive plan include a discussion of existing conditions, a presentation of desired outcomes in the form of a vision and goals, and an inventory of policies and actions that support those goals. The following model language are examples of what could be incorporated into a comprehensive plan.

Existing Conditions

Understanding the potential importance of a community's solar resource requires some knowledge of both the availability of the local solar resource and the community's existing energy use. Using a solar map, like the one described above, is a useful way to demonstrate the solar potential across the area. Identifying the areas with the greatest potential can help the community plan and prepare for the best sites to locate investment and to achieve the goals outlined in the plan. Understanding the nature of the community's energy use – data that can be obtained from the community's utility providers – can put the solar resource within the appropriate economic and use intensity context. For instance, most communities have sufficient solar resources to theoretically meet a substantial portion of their electric energy consumption, even if only the best resources are used.



Community Rooftop Solar Resource. Rochester, MN

Goals

Among communities that have added renewable energy goals and objectives to their plans, common themes include encouraging solar site design for new subdivisions, improving the energy performance of municipal facilities, removing barriers and creating incentives for small-scale or "distributed" installations, and capturing economic development opportunities associated with renewable energy investment. Examples of goals may be:

> **Goal 1:** Encourage local production of solar energy on new residential and commercial construction.
>
> **Goal 2:** Maximize the production of solar photovoltaic energy to the extent feasible, while minimizing potential biological, agricultural, visual, and other environmental impacts.

Policies and Actions

In Comprehensive Plans, policies are statements of intent with enough clarity to guide decision-making. Policy statements should be tied to the desired goals and set a clear path to action. Examples of policies are:

> **Policy 1:** Establish clear guidelines for solar ready development in all zoning districts where solar is a permitted use.
>
> **Policy 2:** The City supports the State's effort to achieve the Renewable Portfolio Standard (RPS), which requires utilities to generate 25% of electricity from renewable energy sources, and the State's solar energy goal of having sufficient solar generation to meet 10% of electric use by 2030.

Actions are more specific statements that direct programs, regulations, operational procedures, or public investments. Action statements are intended to guide the implementation of the stated policies. Examples of action statements follow:

> **Action 1:** Provide incentives for developers who build solar-ready residential and commercial structures.
>
> **Action 2:** The City should complete a study to identify opportunities for investment in solar energy resources on public buildings and lands.

References:

Planning for Solar Energy, American Planning Association
https://www.planning.org/store/product/?ProductCode=BOOK_P575

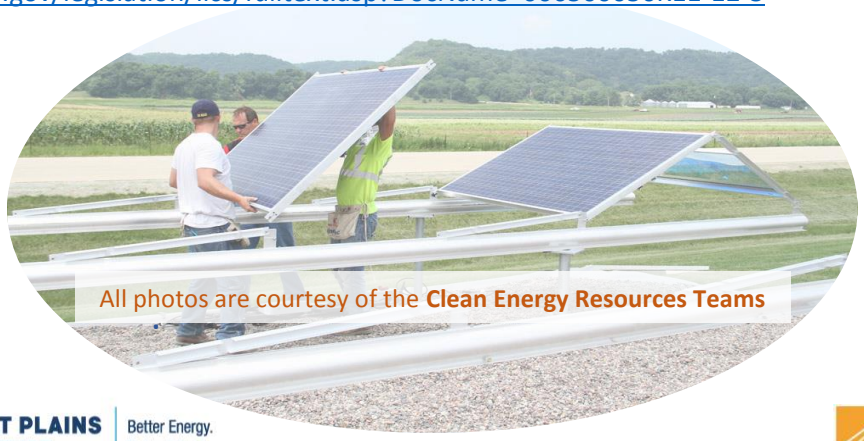
Planning Advisory Service Essential Info Packets, Planning and Zoning for Solar Energy
https://www.planning.org/pas/infopackets/open/eip30.htm

Iowa Smart Planning Principles, Statute, Guidance document on-line.
https://rio.urban.uiowa.edu/sites/rio/files/Iowa_Smart_Planning_Overview_0.pdf

Minnesota Solar Planning Requirement – Metropolitan Land Planning Act 473.859. Subd.2b

Metropolitan Council Local Planning Handbook

Illinois Planning Authority for Protection Solar Resources ((65 ILCS 5/11-12-5) (from Ch. 24, par. 11-12-5)
http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=006500050K11-12-5



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