Integrating Solar Energy into Local Development Regulations

Many communities recognize the economic and environmental benefits of local renewable energy, generally, and solar energy, specifically. Homes and businesses with solar installations will have lower energy bills, and new solar energy systems mean new jobs for local installers. Also, by increasing their use of solar energy, communities can decrease air pollution, greenhouse gas emissions, and the secondary impacts that mining or drilling for fossil fuels have on the environment and surrounding communities.

One of the keys to local solar market growth is a supportive regulatory environment. Planners write, amend, and administer standards, policies, and incentives that have important influences on the nature and timing of future private development as well as what, where, and how local resources are used or protected. Applying this idea to the solar resource, planners can examine zoning codes, building codes, subdivision codes, and other regulations and ordinances to determine if—and how—they address solar energy, and whether barriers, either intentional or unintentional, exist. Where codes are silent on the subject, they can propose amendments to enable communities to take advantage of this clean, local energy source, and suggest incentives to encourage solar energy use.

This briefing paper provides planners, public officials, and engaged citizens with an overview of three aspects of integrating solar energy into local development regulations—removing barriers, creating incentives, and enacting standards—and offers examples from communities across the country that are taking steps to support local solar market growth.

Preparing for Regulatory Change

Before initiating regulatory reform, planners have a responsibility to help communities clarify how their goals and priorities relate to solar energy use. In practice this often means formally introducing solar energy into the community conversation and educating residents and business owners about the local solar market. See the first briefing paper in this series, "Solar Community Engagement Strategies for Planners," for more information on responding to common questions and concerns about solar and using public engagement techniques to broaden the conversation. It is also important that planners help incorporate solar energy into the community's guiding document, its comprehensive plan. The third briefing paper in this series, "Integrating Solar Energy into Local Plans," explains how weaving goals, objectives, policies, and actions that support solar energy use into the local comprehensive plan makes these connections official and sets the foundation for taking action and realizing renewable energy goals.

Removing Barriers

Regulatory barriers to solar energy development can take a number of forms. Some barriers are obvious: homeowners' as-

sociation covenants or design review requirements that prohibit or restrict solar panel installation, or zoning ordinances that restrict the types of districts in which solar facilities are allowed. Other barriers are more subtle, such as height restrictions, lot coverage limitations, or setback requirements that do not allow for the placement of solar panels on existing rooftops or building sites. Screening requirements for rooftop equipment and landscaping requirements that limit access to solar resources can also act as barriers, as can silence on solar energy systems in permitted use listings or design standards.

Though private homeowners' association covenants and restrictions are typically outside the control of local government, more than half of all states have passed solar rights laws that either limit the restrictions that private covenants can place on solar energy system installation or explicitly enable local governments to adopt regulations aimed at protecting solar access (DSIRE 2012a). Planners in these states can raise awareness around this issue and ensure that residents and local officials understand when private restrictions on solar energy systems will be preempted by state or local protections. In states without such protections, planners can encourage home-rule municipalities to adopt local provisions limiting private restrictions on solar energy system installation. The Model Solar Energy Standards provided by the Minnesota Environmental Quality Board offers the following sample language: "Restrictions on Solar Energy Systems Limited: No homeowners' agreement, covenant, common interest community, or other contract between multiple property owners within a subdivision of [Community] shall restrict or limit solar energy systems to a greater extent than [Community's] solar energy standards" (Part VI; MEQB 2012).

Planners can also introduce ordinance provisions that make solar a by-right accessory use in all zoning districts; craft exceptions to allow solar in special districts, such as historic preservation districts; add solar panels to the list of rooftop appurtenances (air conditioning units, skylights, chimneys, etc.) exempted from height restrictions; and allow modest adjustments to regulations to allow applicants access to the solar resource on their properties.

Seattle provides an example of how a community might take a close look at the solar-friendliness of its regulations. As part of its Solar America City program, the city commissioned a gap analysis of its municipal code to determine how well it complied with identified best management practices for increasing solar energy use. The final report provided recommendations for improving permitting processes and policies affecting solar energy implementation.

It is also important to provide clear information regarding the permitting process and associated code requirements for solar. In Portland, Oregon, the Bureau of Development Services has created program guides for solar energy system installation on one- or two-family homes, as well as on commercial buildings (Portland 2010). The guides define solar energy systems; explain installation requirements, including applicable development and design review standards as well as structural and electrical specifications; describe permitting requirements and processes; and offer submittal checklists for users. In San Jose, California, staff created a solar PV system residential inspection checklist to make it easier for property owners and installers to understand and track solar permitting and installation requirements (San Jose 2011).

Creating Incentives

Communities can create incentives by streamlining the approval process, reducing permitting costs, and increasing flexibility on other standards in exchange for the incorporation of solar. Tucson, Arizona, has passed resolutions waiving permitting fees through FY 2013 for qualifying solar energy systems up to a maximum of $1,000 for a single installation or $5,000 for a larger project. In San Diego, developers can qualify for expedited permitting by either achieving LEED certification or using solar PV to generate a certain percentage of energy needs in their projects (DSIRE 2012b).

Many zoning codes already include lists of development amenities for which developers may obtain density or floor area ratio bonuses; planners should make sure that installation of solar energy systems in new development are added to those lists. According to the zoning code of Pullman, Washington, for example, developers may obtain up to five density bonus points for new planned residential developments by incorporating solar orientation or solar energy systems into 50 percent or more of proposed dwelling units (§17.107.040).

Solar requirements may also be incorporated into municipal green building programs and policies, which typically require that new or retrofit construction meets a certain level of energy efficiency and environmental sustainability. Encouraging the incorporation of solar energy into building design and operations can be an easy way to help developers and property owners

meet these standards. Fremont, California, recently adopted a green building ordinance that requires new low-rise residential construction to either meet minimum California Green Building Code requirements or achieve 50 points on the Build It Green GreenPoint Rated checklist—and installing a solar hot water system and PV panels counts for 16 points on that checklist (§7-1920.A4.601).

Enacting Standards

Finally, planners can help communities enact standards related to solar. It is important that communities address solar in their land use and development codes to eliminate uncertainty around where solar energy systems may or may not be allowed, ensure that installations are placed in appropriate locations, and mitigate any potential negative impacts. Clear standards can also help communities avoid conflicts over competing values, such as tree cover or historic character of protected districts or structures. The fifth briefing paper in this series, "Balancing Solar Energy Use with Potential Competing Interests," offers more information on how communities are addressing these issues. Finally, standards can help set the stage for future implementation of solar by ensuring that new development is situated for maximum solar access and new structures are wired and plumbed for solar electric and hot water systems.

When it comes to enacting standards, some baseline considerations include clarifying what types of solar systems are allowed and where; mitigating potential nuisances associated with solar equipment, such as visual impacts or encroachment; and addressing solar access issues. Communities should attend to basic zoning issues such defining solar energy–related terms; determining whether solar energy systems will be allowed as primary or accessory uses in each zoning district; setting forth height, lot coverage, and setback requirements; and describing relevant development standards for solar energy systems such as screening and placement (on building or site). Communities may also tackle solar easement and access requirements; site planning guidelines for lot and building orientation that maximize solar access; and solar-ready development standards wherein buildings are constructed to allow for the future installation of solar energy systems. Planners should also consider the context, such as residential, nonresidential, new development, or infill or redevelopment, when establishing such standards, as solar objectives may conflict with other community objectives (i.e., higher-intensity development) in some locations.

While specific standards will vary from community to community based on the community's goals and local context, there are a number of common types of provisions related to different aspects of solar energy use.

Accessory Solar Energy Systems

Say "solar energy" and most people think of solar panels on a roof. Indeed, small-scale—or, more accurately, accessory—solar energy systems in the form of ground-mounted or rooftop solar installations alongside or on a primary structure are the most common and familiar manifestation of solar energy implementation. These systems can range from a few solar panels or a solar hot water system installed on a residential bungalow to a much larger PV installation on the rooftop of a big-box warehouse or municipal building. The impacts of these systems are typically minimal, and rooftops in particular provide a vast amount of potential space for installing solar and generating electricity with no additional land consumption or impervious surface increase. The main concerns regarding these systems tend to be aesthetic: how and where systems are placed on a property. The basic considerations for these facilities are to make sure they are permitted in appropriate locations throughout the community and to address specific requirements by location.

Communities may address accessory solar energy systems in their codes in a number of ways. Some line-list them as permitted uses in defined districts; others define solar energy systems through accessory use provisions as permitted by right in both residential and nonresidential districts, often subject to

Impacts of accessory solar energy systems are typically minimal. (Image courtesy of DOE/NREL)

specific development standards. Still other communities adopt a stand-alone chapter or section of the zoning code addressing solar energy (and often other renewable energy sources such as wind), stating where it is permitted and laying out specific development standards. Related definitions may be listed in that section, but are typically added to the zoning code's definitions section. A separate section may be the most user-friendly option, as residents can find all the information on solar in one spot, though an integrated approach, especially if the entire code is being updated, may allow for a more streamlined document overall.

Specific development standards typically address placement. Some communities encourage rooftop over ground-mounted systems and many communities require rooftop panels to be located on side or rear roof slopes rather than street-facing roof slopes, when possible, for aesthetic reasons. Some ordinances limit the height that rooftop panels may extend above the roofline (often 2 or 3 feet), while others exempt solar panels altogether from district height restrictions, along with other typical rooftop structures such as chimneys, air conditioning units, or steeples. Many ordinances also address system appearance, requiring neutral paint colors and screening of nonpanel system components. For ground-mounted systems, communities often restrict location to side or rear yards and sometimes require screening from public rights-of-way. In all placement and screening considerations, however, the effects of requirements on the efficacy of the panels' operation must be considered, and most ordinances provide for some degree of flexibility to ensure that property owners can work within site and structural constraints to achieve reasonable solar collection.

While accessory solar facilities are typically installed to meet on-site power needs for buildings and other uses, there is no need to place limitations on the size or power production capacity of an accessory system—height and location restrictions will place reasonable constraints on the size or extent of panels and their placement. In most states, net-metering arrangements allow solar energy system owners to feed excess energy back into the grid, "turning the meter backwards" and earning credits for that electricity, which can serve as a further incentive for solar energy installation—not to mention a local, decentralized power generation source. Adding stipulations that accessory systems be limited in capacity to on-site power needs or implementing an arbitrary system size cap can only act as a barrier to solar implementation.

Finally, some communities require that solar systems remain well-maintained throughout their working life, and mandate the decommissioning of panels once they cease to function properly or if they are abandoned for a certain length of time. This ensures safety and prevents obsolete or damaged panels from becoming hazardous or aesthetically blighting.

Some examples of accessory solar energy system provisions include those of Bethany Beach, Delaware, which added a stand-alone chapter on solar energy systems to its Town Code in 2010 (Chap. 484). It begins with a section on legislative intent that references solar energy's role in mitigating the need for additional electrical generation and reducing atmospheric pollution and encourages the use of solar energy systems in the town. Subsequent provisions establish solar energy systems as permitted uses in all zoning districts and encourage panel placement on side and rear roof slopes of principal buildings. There are no limits to the number of panels that may be installed as part of the system, though the main purpose of the system must be to generate power for onsite use—commercial solar operations are prohibited within the town. Hermosa Beach, California, addresses solar energy systems in the yard, height, and area restrictions chapter of its zoning code (§17.46.220). It allows solar energy systems to exceed height limits to the minimum extent necessary for safe and efficient operation and provides flexibility in modifying other development standards that might reduce system performance. Minneapolis, Minnesota, permits building-mounted or freestanding (ground-mounted) solar energy systems in all zoning districts subject to height limits and required setbacks (§537.110). Solar energy systems that do not comply with those regulations may be allowed by conditional use permit.

Solar Energy Systems as Primary Uses

As interest in renewable energy increases and more states pass renewable energy portfolio standards that require a certain percentage of state energy use to come from renewable sources, large utility-scale "solar farms"—centralized facilities that comprise the primary or principal use on a site—are gaining in numbers. These typically large-scale systems can have very different impacts on land use than accessory systems and may give rise to public concerns over these impacts. Planners should make sure that their communities' land-use codes allow for these uses where appropriate and that any potential nuisances are mitigated.

Primary-use solar farms, often large in scale, should be regulated to mitigate potential impacts. (Image courtesy of DOE/NREL)

When solar energy systems constitute a primary land use, most or all of the electricity produced is consumed off site. A major difference between these solar farms and small-scale, accessory systems is the amount of land that they occupy. As noted, most accessory use systems are placed on rooftops or limited by lot coverage or setback requirements and therefore have little to no impact on land use or consumption. In contrast, primary-use systems are ground-mounted and can range in size from less than an acre in urban settings to hundreds of acres in remote locations. This can raise concerns regarding impervious surface coverage, tree and habitat loss, transmission infrastructure, and construction impacts. Solar farm proposals can become controversial, especially when greenfields or productive agricultural lands are proposed as sites. Indeed, Santa Clara County, California, specifically prohibits commercial solar energy conversion systems on land designated for large-scale agriculture by the general plan, and allows this use on only those medium-scale agricultural lands that are deemed to be of marginal quality for farming purposes (Ord. NS–1200.331). On the other hand, a primary-use "community solar garden," in which local residents can purchase shares to support renewable energy production as an alternative to installing their own individual systems, may be fairly small in size and a more appropriate fit within developed areas.

Planners should be aware that primary-use renewable energy facilities can be a great match for vacant industrial or brownfield sites. The site cleanup requirements for a solar farm are typically less extensive and costly than they would be for recreational, commercial, or residential uses, and a solar farm can be dismantled and moved to make way for a higher and better use of the property if other redevelopment opportunities eventually arise. See the sixth briefing paper in the series, "Recycling Land for Solar Energy Development," for guidance on taking advantage of these opportunities.

Because of the greater impacts that may be associated with primary-use solar energy systems, many communities restrict their locations to rural, industrial, agricultural, or certain commercial zoning districts. Solar farms may be allowed as by-right uses, but typically in very limited locations; more frequently they are designated as conditional or special uses. Common development standards include height limitations, setbacks from property lines or neighboring structures, and screening from adjacent public rights-of-way. For security and safety reasons, many communities require that solar farms be securely fenced, that warning signs be posted, and that on-site electrical interconnections and power lines be installed underground. Some communities establish a minimum lot size to better control where these facilities can be located within their jurisdictions.

Some communities also provide some guidance for the permitting process. Required documentation for a solar farm permit typically includes a detailed plot plan, as well as an agreement with a utility for interconnection of the completed facility. Some ordinances include stormwater management considerations, and in more rural communities or areas that abut public land environmental analysis for potential impacts on wildlife and vegetation may be required. Finally, decommissioning of facilities once they are no longer operational is typically required, with some communities requiring restoration of the site to its previous condition, especially for formerly agricultural lands.

Cities and counties throughout the country have adopted regulations for primary-use solar energy systems. For example, Erie, Pennsylvania, permits urban solar farms by right in certain industrial and manufacturing zones, and as a conditional use in others (Ord. 4-2010). Fencing, safety signage, and undergrounding of on-site power lines are required. Permit applications require a plot plan and utility notification, and solar farms inactive for one year must be removed and the site restored to its natural condition within six months of the removal. Granville County, North Carolina, permits ground-mounted solar energy systems as conditional or limited approval uses in industrial districts; other provisions establish height, setback, and screening requirements and require compliance with building and electrical codes (§32-233). Iron County, Utah, provides 13 considerations for conditional use review for solar power plants, including siting considerations, analysis of local economic ben-

efits, visual impacts, environmental analysis, and transportation plans for construction and operation phases (Chap. 17-33).

Solar Access Ordinances

Allowing solar energy systems is key to encouraging local renewable energy production, but standards that define and protect the rights of property owners to sunlight are also important. Solar access ordinances guarantee property owners a reasonable amount of sunlight and protect installed systems from being shaded by structures and vegetation. There is currently no federal property "right" to sunlight for solar energy production. The only places where such a right exists is in states that have passed such statutes, and in places where local governments have created some sort of a "right" via ordinance. See the fifth briefing paper in this series, "Balancing Solar and Other Potential Competing Interests in Communities," for more information on how states and municipalities are addressing this issue.

Resources: Solar Energy in Development Codes

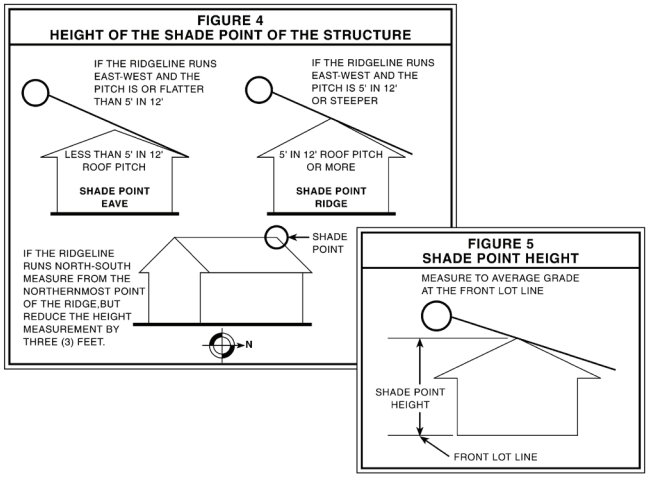
The following are some resources that provide guidance on integrating solar energy into land development regulations and processes:

- "Planning and Zoning for Solar Energy" (American Planning Association, PAS Essential Info Packet 30, 2010; www.planning.org/pas/infopackets/open/eip30.htm). This packet offers background articles and reports on planning and zoning for solar energy, as well as a collection of model and sample ordinances on a range of solar code elements.
- "SunShot Solar Outreach Partnership" (American Planning Association, 2012; www.planning.org/research/solar/). This site offers additional resources on planning and zoning for solar energy, including solar zoning FAQs, an annotated resource list, and links to webinars on solar energy implementation.
- "DSIRESolar" (Database of State Incentives for Renewables and Efficiency, U.S. DOE, 2012; www.dsireusa.org/solar). This comprehensive online searchable database lists federal, state, and local solar-related incentives, policies, and regulations by state.
- "Site Design Strategies for Solar Access" (Section 8.2, *Sustainable Community Development Code*, Rocky Mountain Land Use Institute, 2012; www.law.du.edu/index.php/rmlui/rmlui-practice/code-framework/model-code). This model code framework offers ideas and examples for removing barriers, creating incentives, and enacting standards for solar energy.
- "City of Seattle Code Review: Final Gap Analysis Report" (HDR Engineering, Inc., prepared for U.S. Department of Energy National Renewable Energy Laboratory and City of Seattle, 2010; http://www.seattle.gov/dpd/cms/groups/pan/@pan/@sustainableblding/documents/web_informational/dpdp018774.pdf). This report describes an audit of Seattle's codes relative to solar energy development and lists best practices for a range of solar code elements.
- "Profiles in Regional Solar Planning: A Handbook and Resource Guide" (National Association of Regional Councils, 2012; http://narc.org/wp-content/uploads/DOE-Solar-Handbook.pdf). This guidebook offers case studies and tools for regional implementation of solar.
- "Solar Ready: An Overview of Implementation Practices" (NREL Technical Report TP-7A40-51296, 2012; www.nrel.gov/docs/fy12osti/51296.pdf). This report offers tools and suggestions for regulating solar-ready construction in communities.
- "Solar Powering Your Community: A Guide for Local Governments" (Second Edition, U.S. Department of Energy, Energy Efficiency and Renewable Energy, and Solar America Communities, 2011; www4.eere.energy.gov/solar/sunshot/resource_center/resources/solar_powering_your_community_guide_local_governments). This comprehensive guide to solar includes a chapter on updating and enforcing local solar rules and regulations.

Communities can provide for the protection of solar resources in three main ways: (1) solar easement, (2) solar access permit, and (3) solar "fences." In the first case, a property owner protects access to the sunlight needed by a solar energy system by negotiating solar easements with other neighboring owners and recording them with the appropriate authorities. Some states have enacted statutes defining and enabling local solar easements; one example is New Hampshire, which offers a model "Solar Skyspace Easement" template in its state statutes (§477:51).

In the second case, a property owner provides documentation of a solar energy system to the local government and obtains a permit providing protection from shading caused by future construction or tree growth on neighboring properties. To balance the rights of other property owners, communities may allow for some degree of system shading above a threshold that ensures the system's effectiveness will not drop below a certain percentage. For example, the Village of Prairie du Sac, Wisconsin, allows owners to obtain a solar access permit to protect their solar energy systems from "impermissible interference," including shading of more than 95 percent of collector surface between 9 AM and 3 PM each day (Chap. 8).

In the third case, a community establishes general solar protections for designated lots in the initial subdivision process—sometimes delineated by an imaginary "fence" creating a "box" on each lot within which sunlight must fall unobstructed by neighboring structures or vegetation, often for a certain daily amount of time (commonly defined as, at minimum, between two to three hours on either side of noon on the winter solstice). Neighboring property owners are prohibited from erecting any structures that would cast shadows during that time in the lot area protected by the ordinance. Boulder, Colorado, uses this approach to establish three different "solar access (SA) areas" that balance solar access with restrictions on development density and height (§9-9-17). The code provides for a "solar fence" in the first two SA areas that sets maximum allowable shading of a lot's building envelope; in the third SA area, solar protections are only granted for specific properties through permits. Solar access area designations may be amended by property owners through a public hearing and review process. Fort Collins, Colorado, limits the shading of structures on adjacent property to that generated by a 25-foot "hypothetical wall" located along the property line, but exempts certain high-density zoning districts from this provision (§3.2.3).



These figures from Clackamas County, Oregon, illustrate how solar access ordinances can provide detailed mechanisms for establishing and protecting access to sunlight for individual lots. (Image courtesy of Clackamas County, Oregon)

Solar Siting Ordinances

Besides allowing for the installation of solar energy systems within existing development, communities can also be proactive in designing and developing new subdivisions and structures to maximize their opportunities for using solar resources. Most existing development patterns and site layouts do not protect or take advantage of solar resources. A number of communities have added solar siting provisions to their subdivision codes or general site development standards to ensure that future development is optimally sited for solar use. These provisions sometimes go hand-in-hand with solar access requirements.

Solar siting ordinances set standards for lot size and orientation—as well as site layout for parcels—that provide for the construction of buildings whose southern sides or ends have unobstructed solar access for a designated time during each day (as in the case of solar access ordinances, typically a minimum of two to three hours on either side of noon on the winter solstice). Requirements include street and lot orientation within certain degrees of an east-west axis to ensure adequate sunlight access. Typically, a certain minimum percentage of lots within new subdivisions must then comply with these requirements. Solar siting ordinances may also place restrictions on the height and location of structures within the lot so that basic solar access to neighboring lots will not be blocked, or they may allow flexibility within setback regulations to maximize solar access for new construction. Such provisions do not only benefit

homeowners who choose to purchase and install solar energy systems, but also maximize opportunities for the design of passive heating and cooling features.

To complement its solar access provisions, Boulder requires new residential development to have roof and exterior wall surfaces that are oriented toward the sun, have unimpeded solar access, and be structurally capable of supporting solar collectors. Similarly, Laramie, Wyoming, requires at least 40 percent of lots less than 15,000 square feet in area in single- and two-family residential developments to meet its "solar-oriented lot" definition, and development plans must protect access to sunshine for solar energy systems to the maximum amount feasible (§15.14.030.A.3). Dixon, California, includes solar orientation and incorporation of solar energy systems in its list of general site design standards for single-family homes (§12.19.21).

Solar-Ready Homes

Besides drafting amendments for zoning and subdivision codes to allow for the installation of solar energy systems and to protect access to sunlight for those systems, planners can also advocate for amendments to local building codes to promote and enhance solar implementation. "Solar-ready" home provisions require new construction to be electrically wired to support the later installation of solar PV systems and plumbed to support the later installation of solar hot water systems, and for roofs to be oriented, designed, and built to easily accommodate and support solar electric or hot water systems. Constructing the building to solar-ready standards is of little use, however, if the construction details are not available when the solar installation is ready to install a new system. Local governments have roles both in encouraging solar-ready construction and in holding solar-ready documentation in the building's permit history.

Some states, such as New Mexico, are adding solar-ready provisions to their energy codes. Local examples include Chula Vista, California, which has added photovoltaic pre-wiring requirements to its electrical code and solar water heater pre-plumbing requirements to its plumbing code that require all new residential units to include electrical conduit and plumbing specifically designed to allow the later installation of solar energy or hot water systems (§15.24.065; §15.28.015). In a different approach, Henderson, Nevada, offers solar readiness as one of a number of sustainable site and building design options developers can choose in order to earn "points" required for development approval (§19.7.12).

Model Ordinances

Though many communities already address solar in one form or another within their codes, other planners will be starting from scratch to incorporate solar provisions into their land development regulations. Luckily, planners do not have to reinvent the wheel on this topic; there is plenty of guidance and resource material available in the form of model ordinances, best practices, and sample regulations already adopted by other communities. Planners whose communities have already adopted solar provisions can also review model and sample ordinances to make sure their regulations are up-to-date and effective.

Model ordinances exist to help communities get started. Many include commentaries or different options to educate planners as to the most important aspects of solar regulations, as well as the reasoning behind various provisions. One example is the Minnesota Environmental Quality Board's model solar energy standards, which offers a general overview of solar energy issues and goals and provides model ordinance language and commentaries regarding rooftop and accessory structure solar installations (MEQB 2012). The model ordinance offers an extensive list of solar-related definitions and provides standards for solar energy systems as accessory uses permitted in all districts. It also addresses solar access through permitted solar easements and provides a list of incentives to promote development that integrates active solar energy systems. Another model ordinance, from the Center for Climate Change Law at Columbia Law School, focuses on small-scale solar energy systems, permitting rooftop, ground-mounted, and other systems by right in all districts subject to standards (Columbia Law School 2011). The model offers additional sections covering a fast-track solar permitting program and siting for future solar access.

Planners should remember, however, that models are just models, and as they draft new code provisions or amendments, they should be sure to tailor these regulations to local community contexts.

Conclusions

Solar energy use fosters economic activity and investment in a local resource and reduces air pollution, greenhouse gas emissions, and dependence on fossil-fuel energy sources. To help their communities better use this local energy resource, plan-

ners can highlight how local development regulations either support or inhibit the installation of both accessory and primary solar energy systems in different areas of their communities. After evaluating the effects of existing regulations, planners can then work to remove barriers, create incentives, and draft standards for solar energy use in existing and new development.

Fortunately, there are already a number of examples and models planners can look to for guidance as they seek to tailor a regulatory strategies for their communities. When consulting these existing resources, planners should adhere to three basic rules:

Use comparable examples: Identify peer communities with similar characteristics in terms of size, geography, climate, regulatory framework, development character, and natural and political environment, and review their codes as perhaps the most relevant.

Talk with the source: When possible, talk with the planners who wrote or who currently administer the ordinance. Ask them questions, such as how frequently the ordinance is being used, what's working and not working, and what they would do differently.

Do your homework: Be prepared to explain to your community members why specific aspects of your proposed regulations are necessary, and how they have been tailored to your community.

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