

# Planning and Zoning for Solar Energy

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**American Planning Association**

*Making Great Communities Happen*

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ISBN: 978-1-61190-108-5

## Foreword

As the nation's centers of electricity consumption, cities and counties are uniquely positioned to support economic growth, strengthen America's energy independence, and reduce pollution by converting to solar energy. Planners have important roles to play in making sure their communities' plans and land use regulations allow and encourage this clean, safe energy source.

Perhaps the most obvious and visible aspect of planning and zoning for solar energy is allowing *solar energy systems*—photovoltaic panels, which can be roof- or ground-mounted, as well as solar hot water systems—for both residential and nonresidential uses. Large-scale utility *solar farms* are being proposed and built in communities around the country as well. Because solar energy systems can be useless if no sunlight can reach them, *solar access* provisions and *solar easements* that define and protect property owners' rights to sunlight are important local tools. Beyond solar energy systems, development codes can promote active and passive use of solar through subdivision *solar siting* provisions, which orient lots for maximum solar gain, and *solar-ready homes* provisions for new development, which require the installation of electrical and plumbing components needed for future solar energy system installation.

This Essential Info Packet provides a number of articles and guidebooks to bring planners up to speed on the current state of solar and help them plan for solar in their communities. A sampling of solar provisions in comprehensive plans provides guidance for integrating this important element into communities' guiding policy documents, and planners can draw on the sample ordinances on the various aspects of solar energy described above from municipalities across the country to update their codes or add solar provisions for the first time.

This packet is being made available to all planners and the general public as part of APA's participation in the Solar America Communities Outreach Partnership, an initiative of the U.S. Department of Energy (DOE). Through this effort, APA and its partners are providing outreach, training, and technical assistance to local and regional governments to help them implement solar energy in their communities.

The Solar America Communities Outreach Partnership builds on DOE's Solar America Cities Program. In 2007 and 2008, DOE designated 25 major U.S. cities as Solar America Cities and provided these cities with financial and technical assistance to help develop comprehensive approaches to increase solar energy use. In 2009, 16 of the Solar America Cities received additional funding for special projects that address specific barriers to solar energy use in urban environments through the American Recovery and Reinvestment Act. The federal-local partnerships formed through this program have enabled DOE to share best practices, identify barriers to solar energy use in diverse locations and at various stages of market development, and to collaboratively develop solutions to address those barriers.

**Solar Energy Articles and Reports**

Feldman, Gail, and Dan Marks. 2009. "Balancing the Solar Access Equation." *Zoning Practice*, April.

- Review of issues relating to solar access to allow planners to avoid unintended consequences of solar facility development.

HDR Engineering, Inc. 2010. *City of Seattle Code Review: Final Gap Analysis Report*. Executive Summary; Appendix A, Best Management Practices Gap Analysis. Prepared for U.S. Department of Energy National Renewable Energy Laboratory and City of Seattle.

- Report describes the gap analysis process for Seattle’s codes relative to best management practices for solar energy development. Appendix A list BMPs covering building energy standards, permitting requirements, technical training, solar access, leading by example, and solar tracking.

Jenior, Mary-Margaret. 2010. "Solar Access: Using the Environment in Building Design." *Zoning Practice*, April.

- Provides an overview of passive and active solar building design strategies. Outlines a number of considerations for subdivision and zoning standards to promote better solar design.

Muller, Hannah. 2009. "Solar Access: Recommendations for the City and County of Denver." U.S. Department of Energy Solar Energy Technologies Program.

- Discusses solar easements and solar rights; lists best practices for promoting and protecting solar access.

Ross, Brian, and Suzanne Sutro Rhees. 2010. "Solar Energy and Land-Use Regulation." *Zoning Practice*, November.

- Reports back on a survey of solar energy system land-use regulations and policies in Solar America Cities and other communities.

White, Darcie. 2008. *Site Design Strategies for Solar Access*. The Rocky Mountain Land Use Institute Sustainable Community Development Code Research Monologue Series: Energy. Denver, CO: Rocky Mountain Land Use Institute.

- Describes the benefits of adopting solar access provisions at the local level; provides land use code strategies to help local governments maintain solar access.

U.S. Department of Energy, Energy Efficiency and Renewable Energy, and Solar America Communities. 2011. *Solar Powering Your Community: A Guide for Local Governments*. Second Edition. Getting Started: Assessing A Community’s Policy Environment; Section 1.0, Organizing and Strategizing A Local Solar Effort; Section 3.0, Updating and Enforcing Local Rules and Regulations. Washington, D.C.: U.S. Department of Energy.

- Comprehensive guide to implementing solar power at the local level. Section 1.0 provides guidance in organizing to promote and support solar; Section 3.0 covers updating and enforcing local rules and regulations, including solar access laws, building codes, permitting, and installer licensing. Entire report available at [http://solaramericacommunities.energy.gov/resources/guide\\_for\\_local\\_governments/](http://solaramericacommunities.energy.gov/resources/guide_for_local_governments/)

**Solar in the Comprehensive Plan**

Fort Collins (Colorado), City of. 2011. *City Plan*. Environmental Health: Energy.

- See policies ENV 5.2, Utilize Solar Energy, ENV 6.6, Provide Renewable Energy Alternatives, and ENV 7.10, Integrate Technologies.

Jackson (Oregon), County of. 2007. *Jackson County Comprehensive Plan*. Section 11, Energy Conservation.

- Promotes the potential for solar energy use in the county; sets numerous detailed goals for solar energy development. See Parts 3, 5, and 8 for solar-specific implementation strategies.

Greensburg (Kansas), City of. 2008. *Greensburg Sustainable Comprehensive Plan*. Housing; Future Land Use and Policy.

- Plan recommends individual house and neighborhood site layouts to maximize solar access, as well as studying and adopting solar access and solar energy system ordinances.

Owensboro Metropolitan Planning Commission. 2007. *Comprehensive Plan for Owensboro, Whitesville, Daviess County, Kentucky*. Section 710. Climate and Solar Access.

- Describes solar potential of the county and suggests ways to promote solar energy use; provides solar data for the county.

Pinal (Arizona), County of. 2009. *We Create Our Future: Pinal County Comprehensive Plan*. Chapter 7, Environmental Stewardship – Energy.

- Discusses solar resources and planned utility-scale solar power plant. Sets goal to expand renewable energy in the county.

Pleasanton (California), City of. 2009. *General Plan 2005–2025*. Energy Element.

- Describes the city’s incorporation of solar technologies. Policies 7 and 8 address solar energy.

Shakopee (Minnesota), City of. 2009. *Comprehensive Plan 2030*. 12, Solar Access.

- Discusses solar access issues, sets goal of promoting solar energy use.

Victoria (Minnesota), City of. 2010. *2030 Comprehensive Plan Update*. Part II.L.1, Plan Elements – Special Resources – Solar Access Protection. Prepared by TKDA, St. Paul, Minn.

- Sets goal and four policies for assuring adequate solar access for residents and regulating alternative energy sources.

**Model Solar Ordinances and Commentary**

Kent (Maryland), County of. 2010. “Renewable Energy Task Force.” Renewable Energy Systems: Solar. Appendix B, Background Information for Solar Energy.

- This white paper describes the RETF’s discussion of solar energy system issues and regulatory recommendations for utility-scale solar. Provides sample ordinance language.

Lancaster (Pennsylvania), County of. 2010. *Municipal Guide to Planning For and Regulating Alternative Energy Systems*. Lancaster, Penn.: Lancaster County Planning Commission.

- Describes and provides sample ordinance language for accessory/small-scale and principal/utility-scale solar energy systems.

Monroe (Pennsylvania), County of. 2010. "Model Ordinance for On-Site Usage of Solar Energy Systems."

- Establishes roof- and ground-mounted solar energy systems as permitted in any zoning district as an accessory use subject to specific criteria.

Minnesota Environmental Quality Board. 2008 [revised 2012]. "Solar Energy Standards." In *From Policy to Reality: Updated Model Ordinance for Sustainable Development*. Prepared by CR Planning, Inc., Minneapolis, Minn.

- Provides purpose statements, definitions. Allows solar energy systems as accessory uses on all districts subject to standards on height, setbacks, visibility; administrative plan approval required. Provides conditional use standards for systems that do not meet those requirements. Prohibits private restrictions on solar energy systems; provides for solar access permits and development incentives for solar roofs.

Rocky Mountain Land Use Institute. 2011. "Site Design Strategies for Solar Access." *Sustainable Community Development Code*. Beta Version 1.5. Denver, CO: Rocky Mountain Land Use Institute.

- Provides a menu of regulatory options and examples for removing obstacles, creating incentives, and enacting standards for solar access.

### **Solar Access Ordinances**

Ashland (Oregon), City of. 2011. *Municipal Code*. Title 18, Land Use; Section 18.70, Solar Access.

- Protects solar energy collector shading from buildings and vegetation. Sets Solar Setbacks so that shadows from adjacent buildings are no more than 6' at the north property line. Provides for Solar Access Permit to protect solar access by preventing the planting and requiring the trimming of vegetation that would otherwise shade the recorded collector.

Boulder (Colorado), City of. 2011. *Boulder Revised Code*. Title 9, Land Use Regulation; Chapter 9-9, Development Standards; Section 9-9-17, Solar Access. Fort Collins, Colo.: Colorado Code Publishing Company.

- Establishes three Solar Access Areas for the city. For SA Areas I and II, establishes "solar fence" concept for baseline allowable lot shading. For SA Area III where development density is high, provides for Solar Access Permits. Requires solar siting for new residential and nonresidential development.
- Building Service Center's 2006 Solar Access Guide condenses requirements in brochure form.

Clackamas (Oregon), County of. 2011. *County Code*. Title 12, Zoning and Development Ordinance; Section 1000, Development Standards; Part 1018, Solar Balance Point/Infill Ordinance, and Part 1019, Solar Access Permit Ordinance.

- Part 1018 establishes Shade Point Height standards and Solar Balance Points for development; includes formulas and illustrations. Part 1019 provides for solar access permits to prohibit shading of solar features by vegetation on neighboring properties.

Fort Collins (Colorado), City of. 2011. *Land Use Code*. Article 2, Administration; Division 2.8, Modification of Standards; Section 2.8.2, Modification Review Procedures. Article 3, General Development Standards; Division 3.2, Site Planning and Design Standards; Section 3.2.3, Solar Access, Orientation, Shading. Article 5, Terms and Definitions; Division 5.1, Definitions. Fort Collins, Colo.: Colorado Code Publishing Company.

- Provides for modification of standards if property conditions hinder the owner's ability to install a solar system. Requires at least 65% of residential lots less than 15,000 SF to conform to the definition of a "solar-oriented lot"; addresses shading issues.

Laramie (Wyoming), City of. 2011. *Code of Ordinances*. Title 5, Business Taxes, Licenses and Regulations; Chapter 5.58, Solar Rights Permit System. Tallahassee, Fla.: Municipal Code Corporation.

- Provides for protection for the use of a wide range of "solar collector" structures without causing undue hardship on the rights of adjacent property owners.

Prairie du Sac (Wisconsin), Village of. 2011. *Code of Ordinances*. Title 10, Land Use Regulations; Chapter 8. Solar Access.

- Provides for Solar Access Permit to prevent "impermissible interference" for solar energy access to collector surfaces.

San Luis Obispo (California), City of. 2011. *Municipal Code*. Title 16, Subdivisions; Chapter 16.18, General Subdivision Design Standards; Section 16.18.170, Easements for Solar Access. Seattle, Wash.: Code Publishing Company, Inc.

- Solar easements protecting solar exposure between 10AM to 2PM PST on the winter solstice must be recorded for new lots unless lot layout is designed to provide adequate solar access.

Santa Barbara (California), City of. N.d. *Solar Access Packet*. Municipal Code Chapter 28.11, Protection and Enhancement of Solar Access.

- Includes instructions on determining whether residential lots comply with the Solar Access Ordinance and preparing a shadow diagram. Ordinance sets height limitations to balance solar access rights with development rights.

### **Solar Siting Ordinances**

Clackamas (Oregon), County of. 2011. *Zoning and Development Ordinance*. Section 1017. Solar Access Ordinance for New Development.

- Ensures that land is divided so as to maximize solar access for structures and minimize shade on adjoining properties from structures and trees. Includes definitions and illustrations; requires 80% of lots in a development to comply with one or more design options provided. Provides for exemptions and adjustments.

Dixon (California), City of. 2011. *Zoning Ordinance*. Section 12.19.21. Single Family Residential and Secondary Living Units Design Standards. Section 12.27. Energy and Water Conservation Regulations.

- Encourages building design and lot orientation to enhance passive and active solar systems and the incorporation of solar energy. Subdivisions shall be designed to permit maximum exposure to the winter sun; solar energy systems shall not be prohibited.

Laramie (Wyoming), City of. 2011. *Unified Development Code*. Chapter 15.14, Development Standards; Section 15.14.030.A, Solar Energy; Part 3, Solar Oriented Lots. Chapter 15.28, Definitions.

- See part 3 of solar ordinance. To encourage the use of active and passive solar heating systems, the right to solar access is protected and at least 40% of the lots less than 15,000 SF in single- and two-family residential developments must be "solar-oriented lots."
- Ordinance also provides several solar-related definitions.

Oakridge (Oregon), City of. 2011. *Zoning Code*. Article 15, Subdistricts; Section 15.04(8), Planned Unit Development Subdistrict.

- Subdistrict encourages use of solar energy and protection of solar access; development plan must include shadow pattern analysis; 70% of all proposed buildings must have their long axis oriented to within 45 degrees of the true east-west axis for "proper solar orientation" and their south-facing walls and rooftops must be protected from shadows between 9:30AM and 2:30PM on December 21.

San Luis Obispo (California), City of. 2011. *Municipal Code*. Title 16. Subdivisions; Chapter 16.18, General Subdivision Design Standards; Section 16.18.160, Energy Conservation. Seattle, Wash.: Code Publishing Company, Inc.

- Requires subdivisions to provide opportunities for passive heating and cooling through building envelope siting, adjustment of setback lines to create adequate solar access, and orienting longest lot dimensions within thirty degrees of south.

Santa Clara (California), County of. 2011. *County Code*. Division C12, Subdivisions and Land Development; Article IV, Requirements; Part 9, Solar Access for Subdivision Development. Tallahassee, Fla.: Municipal Code Corporation.

- Requires the design of all subdivisions to demonstrate the use of natural heating and cooling opportunities to the maximum extent feasible through submittal of energy conservation plans; dedication of solar access easements may be required as a condition of tentative map approval for new parcels.

### **Solar-Ready Homes**

Chula Vista (California), City of. 2011. *Municipal Code*. Title 15, Buildings and Construction; Chapter 15.24, Electrical Code and Regulations; Section 15.24.065, Photovoltaic Pre-Wiring Requirements. Chapter 15.28, Plumbing Code; Section 15.28.015, Solar Water Heater Pre-Plumbing. Code Publishing Company: Seattle, Wash.

- For building permit approval, residential units must include plumbing to allow the later installation of a solar water heating system and conduit to allow the later installation of a PV system.

Henderson (Nevada), City of. 2011. *Development Code*. Chapter 19.7, Development and Design Standards; Section 19.7.12, Sustainability; Table 19.7.12-1, Menu of Site and Building Design Options for Sustainability, part 1.9: Solar-Ready Design.

- New development in Henderson must score a minimum number of points from a menu of sustainability site and building design features, including solar-ready design.



Oro Valley (Arizona), Town of. 2009. *Ordinance No. (O)09-11: An Ordinance of the Mayor and Council of the Town of Oro Valley, Amending Chapter 6, Article 6-1-7, "Residential Code" Otherwise Known as the "2006 International Residential Code" to Add a "Residential Solar Ordinance" Requiring Installation of Solar Ready Measures in Residential Construction.*

- Ordinance amending the IRC to require the installation of a solar hot water system or specific features to support the future installation of solar hot water systems as well as conduit to support the future installation of solar PV systems.
- Also included: June 17, 2009, staff report describing the ordinance.

Rancho Palos Verdes (California), City of. 2011. *Municipal Code*. Title 15, Buildings and Construction; Chapter 15.04, Building Code; Section 15.04.070, Renewable Energy Systems. Tallahassee, Fla.: Municipal Code Corporation.

- New homes and major remodels must provide roof layout plan showing how future installation of a PV and/or solar water heating system could be accommodated; requires installation of PV conduit or hot water heater and pipes on south-, east-, or west-facing roofs.

Tucson (Arizona), City of. 2008. *Ordinance No. 10549: Relating to Buildings and Construction: Requiring New Single Family and Duplex Residential Dwelling Units to Provide for Future Installation of Solar Energy Devices; "Residential Plan Review: Solar Ready Ordinance"; Ordinance No. 10605: Relating to Buildings and Construction: Amending the International Residential Code 2006...by Adding Local Amendments to Chapter 23, Section M2301, Solar Energy Systems.*

- Ordinances require solar energy "stub-ins" on all new single family and duplex dwelling units to support future photovoltaic panel and solar hot water heater installation.

### **Small-Scale Solar Energy Systems**

Bethany Beach (Delaware), Town of. 2010. *Ordinance no. 455: An Ordinance to Add A New Chapter 484 "Solar Energy Systems" To The Town Code Of Bethany Beach.*

- Allows solar energy systems for on-site energy use as permitted accessory uses in all zoning districts. Encourages rooftop panels on side and back roof slopes rather than ground-mounted systems. Commercial solar energy installations are prohibited.

Brown (Minnesota), County of. 2009. *Zoning Ordinance*. Section 4, Rules and Definitions; Part 402, Definitions. Section 7, Performance Standards; Part 702, Solar Energy Systems and Solar Structures.

- Solar energy systems conforming to lot requirements and setbacks are permitted accessory uses in all districts. May be exempted from height, lot coverage, and setback requirements through variance. Includes solar access provisions.

Granville (North Carolina), County of. 2010. *Code of Ordinances*. Chapter 32, Land Development Code; Article III, Use Standards; Division 3, Section 32-162(5), Accessory Uses, Residential. Section 32-166(7), Accessory Uses, Nonresidential. Article XIX, Definitions – Solar. Tallahassee, Fla.: Municipal Code Corporation.

- Accessory-use solar energy systems must meet district setback and height requirements. Detailed standards provided for non-residential rooftop and ground-mounted systems.

Hermosa Beach (California), City of. 2011. *Municipal Code*. Title 17, Zoning; Chapter 17.46, Yard, Height, and Area Restrictions; Section 17.46.220, Solar Energy Systems Can Exceed Height Limits.

- Solar panels are permissible roof structures that may exceed the height limit by the amount needed for their safe and efficient operation. Includes other development standards applicable where feasible.

Houston (Minnesota), County of. 2011. *Zoning Ordinance*. Section 28, General Provisions; Part 0110.2808, Solar Energy Systems and Solar Structures.

- Solar energy systems are permitted uses in all districts (conditional use in floodplain district) if in compliance with minimum lot requirements and setbacks. May be exempted from setback, height, and lot coverage requirements by variance. Private-nuisance solar access provision.

Irvine (California), City of. 2011. *Zoning Ordinance*. Division 3, General Development Standards and Land Use Regulations; Chapter 3-31, Solar Energy System Standards. Tallahassee, Fla.: Municipal Code Corporation.

- Encourages investment in solar energy systems. Building permit required; provides standards for both residential and commercial/ nonresidential installations.

Ithaca (New York), Town of. 2011. *Town Code*. Chapter 270, Zoning; Article III, Terminology; Section 270-5, Definitions. Article XXVI, Special Regulations; Section 270-219.1, Solar Collectors and Installations.

- Rooftop and building-mounted solar collectors are permitted in all zoning districts with building permit. Ground-mounted and freestanding solar collectors are permitted as accessory structures in all districts subject to setback, height, and lot coverage standards. Abandonment clause.
- "Photovoltaic Systems Building Permit Application Checklist" (Code Enforcement Department, 2010) included.

Minneapolis (Minneapolis), City of. 2011. *Code of Ordinances*. Title 20, Zoning Code; Chapter 535, Regulations of General Applicability; Article XII, Solar Energy Systems. Chapter 537, Accessory Uses and Structures; Section 537.110, Solar Energy System. Tallahassee, Fla.: Municipal Code Corporation.

- Permitted in all districts subject to compliance with development standards. Height limits and setbacks provided for building-mounted and freestanding solar systems; freestanding systems limited to 5% of total lot area in residential and office-residential districts.

Portland (Oregon), City of, Bureau of Development Services. 2010. *Program Guide: Solar Water Heating and Photovoltaic Electric Generators Installed on One- or Two-Family Dwellings*. Also, *Program Guide: Solar Water Heating and Photovoltaic Electric Generators Installed on Commercial Buildings*.

- These program guides outline the application and review procedures for obtaining the necessary permits to install solar energy systems on new or existing residential and nonresidential buildings.

Rock Hill (South Carolina), City of. 2011. *Zoning Ordinance*. Article 4, Use Regulations; Section 4-400, Accessory Uses and Structures; Table 4-400(B), Table of Permitted Accessory Uses. Part 4-400(D)(19), Accessory Uses and Structures Allowed – Ground-Mounted Solar Installations. Article 5, Density, Intensity, and Dimensional Standards; Table 5-200(A), Allowable Yard Encroachments. Article 6, Development and Design Standards; Section 6-800(B)(2)(e), Residential Design Standards – Roof Penetrations and Equipment. Section 6-800(C)(9)(c), Commercial

and Institutional Design Standards - Roof Penetrations and Equipment. Article 10, Definitions.

- Solar energy systems are permitted as accessory uses in all districts. Provides development standards for both residential and nonresidential ground-mounted systems. Also provides for solar-powered lighting.
- Staff report from June 28, 2010, describing ordinance included.

Schaumburg (Illinois), Village of. 2011. *Code of Ordinances*. Title 15, Land Usage; Chapter 154, Zoning; Section 154.27, Definitions. Section 154.56, Solar Energy Systems. Section 154.58, Solar and Wind Energy System Figures. Section 154.62, Building Heights, Bulk Regulations, and Required Yards – Solar Access Protection.

- Solar energy systems for on-site power use are permitted as accessory structures. Provides development standards for both freestanding and building-mounted systems. Provides for the creation of easements to protect solar access. Illustrations included.

Seattle (Washington), City of. 2011. *Municipal Code*. Title 23, Land Use Code; Subtitle III, Land Use Regulations; Division 2, Authorized Uses and Development Standards; Chapter 23.42, General Use Provisions; Section 23.42.130, Nonconforming Solar Collectors. Chapter 23.44, Residential, Single-Family; Section 23.44.046, Solar Collectors. Chapter 23.45, Residential, Multi-Family; Subchapter III, Accessory Uses; Section 23.45.545, Standards for Certain Accessory Uses – Solar Greenhouses, Greenhouses and Solariums. Chapter 23.47A, Commercial; Section 23.47A.012(C), Structure Height – Rooftop Features – Solar Collectors.

- Solar collectors permitted outright as accessory uses to principal by-right and conditional uses. Provides exemptions from height, setback, and nonconformance regulations.

Troy (Michigan), City of. 2011. *Zoning Ordinance*. Article 2, Section 2.02, Definitions. Article 12, Sustainable Design and Development Standards; Section 12.05, Solar Structures and Easements.

- Permits active and passive solar energy systems in all zoning classifications subject to administrative approval; if systems project into or are free standing in required front or side yards, site plan review is required. Provides for solar access easements.

Tucson (Arizona), City of. 2011. *Land Use Code*. Article III, Development Regulations; Division 2, Development Criteria; Section 3.2.5.2(E), Accessory Structures. Section 3.2.6.6(C)(1), Exceptions to Perimeter Yards – Structures Within Perimeter Yards. Section 3.2.7.3(D). Structure Height Measurement – Exceptions. Section 3.2.9.3(A)(5). Lot Coverage – Exceptions – Buildings. Section 3.2.12, Solar Orientation. Article VI, Definitions; Division 2, Listing of Words and Terms.

- Solar energy systems as accessory uses are permitted in all zones; may project up to 4 feet into required perimeter yards; may exceed allowable height limits by 10 feet; and are not counted toward lot coverage.
- Proposed multistory structures must mitigate or minimize shading of solar energy systems on adjacent lots.

West Lake Hills (Texas), City of. 2011. *Code of Ordinances*. Chapter 22, Building Regulations; Article 22.03, Construction Code; Division 1, Generally; Section 22.03.009, Solar Energy Devices. Lubbock, Tex: Franklin Legal Publishing.

- Solar energy devices are permitted use within all zones, either as part of a structure or an independent structure; reasonable variances from height and setback requirements will be granted where necessary.

**Large-Scale Solar Energy Systems**

Erie (Pennsylvania), City of. 2010. *Ordinance No. 4-2010*.

- Urban Solar Farm ordinance provides for urban solar farms as conditional uses in manufacturing districts in accordance with specified regulations. Includes decommissioning provision.

Granville (North Carolina), County of. 2010. *Code of Ordinances*. Chapter 32, Land Development Code; Article III, Use Standards; Division 4, Limited, Conditional, and Special Uses; Section 32-233, Ground-Mounted Solar Power Energy System "Solar Farm" (NAICS 221119). Tallahassee, Fla.: Municipal Code Corporation.

- Accessory-use solar energy systems must meet district setback and height requirements. Detailed standards provided for non-residential rooftop and ground-mounted systems.

Huntersville (North Carolina), Town of. 2011. *Zoning Ordinance*. Article 9, Conditions for Certain Uses; Section 9.54(2), Solar Energy Facility – Major Solar Energy Facilities. Article 12, Definitions.

- Special use permit required for major facilities; provides standards including required existing features plan, setbacks, 8' height limit, minimum lot size of 10 acres.
- Also provides standards for minor solar energy facilities.

Iron (Utah), County of. 2010. *County Code*. Title 17, Zoning; Chapter 17.16, Establishment of Zoning Districts; Section 17.16.030, Table of Uses. Chapter 17.20, Use Definitions; Section 17.20.010, Definitions. Chapter 17.33, Solar Power Plants. Chapter 17.84, Section 17.84.010, Definitions.

- 2010 ordinance provides regulations and design standards for both concentrated thermal and PV solar power plants. Includes permit requirements and detailed list of provisions for conditional use permit review.

Madera (California), County of, Resource Management Agency. 2010. "CZ #2009-008, Title 18 Revisions to Allow for Solar Farms." Staff report to Board of Supervisors. *Ordinance No. 525NN*.

- Staff report describing commercial solar farms amendment – solar farms permitted as conditional use subject to standards intended to address glare and excessive water use.

Port St. Lucie (Florida), City of. 2011. *Code of Ordinances*. Title XV, Land Usage; Chapter 158, Zoning Code; Article I, General Provisions; Section 158.006, Definitions. Article IV, General Use Districts; Section 158.060(C)(13), General Use Zoning District (GU) – Special Exception Uses. Article IX, Industrial Districts; Section 158.136(C)11, Industrial Zoning District (IN) – Special Exception Uses; Section 158.137(C)(4), Utility Zoning District (U) – Special Exception Uses. Article X, Supplementary Use Regulations; Section 158.230, Solar Energy. Tallahassee, Fla.: Municipal Code Corporation.

- Utility-scale "solar generation stations" are special exception uses in certain districts subject to requirements.
- Also provides for small-scale accessory solar energy systems, which are exempted from building height regulations and may be collocated on communication towers and light poles.

Salisbury (Massachusetts), Town of. 2010. *Code of Ordinances*. Chapter 300, Zoning; Article XXIII, Solar Photovoltaic Installations Zoning Bylaw.

- Provides general standards and application requirements for large-scale solar power generation installations. Requires site plan, operations and maintenance plan, landscaping

plan, liability insurance, and financial surety. Sets setbacks of 50', requires visual screening; abandonment provision.

San Antonio (Texas), City of. 2011. *Unified Development Code*. Article III, Zoning; Division 7, Supplemental Use Regulations; Section 35-398(b), Renewable Energy Systems – Solar Farms. Tallahassee, Fla.: Municipal Code Corporation.

- Provides detailed standards for fixed-panel photovoltaic solar farms, including site development standards, submittal requirements for solar farm building permits, and required compliance with other regulations.

Santa Clara (California), County of. 2010. *Ordinance No. NS-1200.331: An Ordinance Of The Board Of Supervisors Of The County Of Santa Clara Amending Appendix I Of The County Of Santa Clara Ordinance Code Related To Commercial Solar Energy Conversion Systems*.

- Provides for minor (under 8 acres) and major commercial solar energy conversion facilities. Restricted to marginal agricultural lands.

Stearns (Minnesota), County of. 2010. *Land Use and Zoning Ordinance #209*. Section 3, Definitions. Section 6, Performance Standards; Part 6.50, Solar Energy Systems. Drafted by CR Planning, Minneapolis, Minn.

- Defines solar farms, allows as conditional use in agricultural, commercial, industrial, and educational/ecclesiastical zoning districts. Provides performance standards and application requirements.
- Also provides standards for roof- and ground-mounted accessory solar energy systems, permitted in all districts.

Straban (Pennsylvania), Township of. 2010. *Ordinance 2010-02*.

- Detailed development standards for "solar electric facility" use as a by-right use in residential rural areas.

### **Solar Energy Online Resources**

Database of State Incentives for Renewables and Efficiency.

[www.dsireusa.org/](http://www.dsireusa.org/)

- A comprehensive and easily searchable database of federal, state, and local policies and programs promoting renewable energy use and energy-efficient practices.

Interstate Renewable Energy Coalition.

[www.irecusa.org/](http://www.irecusa.org/)

- Model policies and reports for bringing renewable energy to a community.

National Renewable Energy Laboratory (NREL). "The Open PV Project."

<http://openpv.nrel.gov/>

- Interactive database providing real-time statistics on the status of solar energy in the U.S.

National Renewable Energy Laboratory (NREL). "Solar Research."

[www.nrel.gov/solar/](http://www.nrel.gov/solar/)

- Information on NREL programs focusing on photovoltaics and solar heating systems.

Solar America Board for Codes and Standards.

[www.solarabcs.org/](http://www.solarabcs.org/)

- Provides technical information on best-practice code requirements for solar energy systems.

U.S. Department of Energy. "SunShot Initiative."

[www1.eere.energy.gov/solar/sunshot/](http://www1.eere.energy.gov/solar/sunshot/)

- DOE's SunShot Initiative focuses on making large-scale solar energy systems cost-competitive without subsidies by the end of the decade.

U.S. Department of Energy, Energy Efficiency and Renewable Energy. "Solar."

[www.eere.energy.gov/topics/solar.html](http://www.eere.energy.gov/topics/solar.html)

- Clearinghouse page for all DOE solar resources and programs.

U.S. Department of Energy, Energy Efficiency and Renewable Energy. "Solar America Communities."

<http://solaramericacommunities.energy.gov/>

- Learn from the efforts of the DOE's 25 designated Solar America Cities.