

North Central Texas Council of Governments



Planning for Solar: Best Practice Guidance for Planning and Zoning of Smalland Large-scale Solar Arrays

May 3, 2024

Session 2 agenda

Welcome

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Zoning Best Practices for Small- and Large-scale Solar

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Who you'll hear from



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Cohort Progress and Session Overview





Cohort structure & timeline



1-on-1 check-ins Session #1: Setting the stage for Session 3: Permitting & inspection Session 5: Wrap up & next steps solar development for solar Address any outstanding questions Overview of regional and state Training on best practices for and chart a pathway forward energy context permitting and inspecting solar arrays May 2024 June/July 2024 **April 2024** June 2024 July/August 2024 Session 4: Community engagement & Session 2: Planning for solar municipal operations Best practice guidance for planning Guidance on how to support residents, and zoning of small and large-scale businesses, and your own operations solar arrays teams as they consider adopting solar

Access to 1-on-1 technical assistance support

Session 2 overview

- This session is focused on SolSmart's "Planning and Zoning" category.
- Communities that attend today's session (or watch the recording) will earn *PZ-18: Planning/zoning training (10pts)*.
 - For those watching the recording, please complete a <u>verification memo</u> and send it to <u>zach.greene@wri.org</u>.
- This session will also cover elements referenced in *PZ-1:* Zoning review (Prerequisite).
- As a reminder, your community will need to choose at least one more criteria to achieve in the Planning & Zoning category to reach the 20-point minimum for Bronze designation.



team.



PZ-1: Review zoning requirements and identify restrictions that intentionally or unintentionally prohibit solar PV development. Compile findings in a memo. (Required for Bronze)

To assist your local government, the national solar experts at SolSmart have conducted a review of your community's zoning and land use regulations to assess the use of best practices, possible barriers (i.e. height restrictions, set-back requirements, etc.) and gaps related to solar PV development. Below, please find the outcome of the review. By reading the narrative and signing the statement at the bottom of the page, your community will satisfy the PZ-1 pre-requisite and be one step closer to achieving SolSmart designation.

I, [full name] as [title] of [community], [state] have re	ceived the zoning review and read its findings.
Signature:	Date: April, 2024
Please note that this review is not an endorsement of the zoning code. This is an informational review only	or recommendation for changing and/or updating /.
If the local government has clarifying comments, ple	ase provide them in a memo to the SolSmart







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Peer Check-in



Peer check-in prompts

Please share:

- Your name and community
- What conversations have you had in the planning department regarding solar and/or SolSmart?
- Do you see any opportunities or challenges related to enabling solar through your local plans and zoning ordinance?









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Integrating Solar Into Local Plans

Local governments have several levers to pull to affect the local solar market

- Municipal procurements
- Municipality-led (or supported) program and projects
- Community engagement efforts
- Local plans (e.g., comprehensive plans, climate action plans, etc.)
- Codes and ordinances (e.g., zoning code, building code, tax code, etc.)





The way solar energy is included in local plans sets the stage for its development

"Good plans enable good solar development"

- Solar energy will increasingly be integrated into your community, so it's critical to address how this will occur through local planning processes.
- Plans lay the policy foundation for development regulations and programs.
- Establishing goals for solar in plans provides multiple benefits, such as more transparency and staff empowerment.
- Planning processes (should) include extensive community engagement, which provides an opportunity to get insight into resident perspectives.

Communitywide Comprehensive Plan







Community engagement and participation is critical

Involve local stakeholders – such as residents and business owners - to develop your strategy:

- Where and how solar should be enabled in the community
- Benefits to prioritize (e.g., equity, cost stability, local generation, resilience, jobs, etc.)
- Gaps in current programs or financing that may make it hard for some stakeholders to take advantage of solar benefits
- The issues and concerns of your stakeholders

Public participation tools & methods

- In-person/online workshops
- In-person/online focus groups
- Printed/online surveys
- Interviews
- Neighborhood meetings
- Booths at community events
- Committees or task forces
- Project websites
- Social media





Core aspects of integrating solar into plans

- \checkmark Identify and define solar resources
- Acknowledge solar development benefits and desired cobenefits
- ✓ Identify solar development opportunities and conflicts in the community
- ✓ Set solar development targets or goals





Assessing solar development potential

- Documenting development potential can help planning process participants understand the limitations on number, size, and types of projects the community could accommodate
 - Quality of local solar resource
 - Location and capacity of local power distribution and transmission network
 - On-site solar potential

Modeled Annual Technical Generation Potential - Residential Rooftop PV with Select Equity Filters







Develop solar goals for inclusion in local plans

Depending on your community priorities this might be:

- % of community energy demand met by solar
- % of municipal energy demand met by solar
- # of solar projects installed
- Types of solar projects installed, ex. community centers, brownfields, etc.
- Solar serving low-income residents

In addition to naming goals, consider how you will track and report your progress





Key questions to consider

- Do your zoning regulations align with the goals?
- Do your staff have the training they need to support the goals?
- Do permitting rules and procedures align with the goals?
- Will you need to develop partnerships to realize the goals?
- How will you engage stakeholders?





Planning group discussion

Prompts:

- Is solar already referenced in any of your local plans?
- Has solar been discussed in planning processes? Have you encountered any challenges or opportunities related to solar during these processes?









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Zoning Best Practices for Small- and Large-scale Solar



Core elements of integrating solar into local zoning

- Explicitly recognize and address the different forms/uses of solar development (have definitions)
- ✓ Create by-right (or permitted) installation opportunities
- Set clear and predictable standards that balance solar resources and development with other resources and land uses
- ✓ Avoid unintentional barriers to solar
- Enable capture of desired local co-benefits (ex. Pollinator species)
- Consider the concerns you identified in planning and set appropriate conditions (ex. Historic resources)
- ✓ Maintain consistency with regional best practices





Defining energy systems as a land use

- Common approaches to defining solar energy systems as distinct land uses based on the following factors:
 - The relationship of the system
 to other structures
 - The relationship between the system and any other land uses on the same parcel
 - The size of the system



Roof of Oncor Electric building (Dallas, Texas) Source: NCTCOG

Ground Mounted Solar Panels as Art (Austin, Texas)

Source: NCTCOG



Roof-Mounted SED in Hurst, Texas Source: http://www.dfwsolartour.org





Solar Parking Canopies, Irving West Library (Irving, Texas) Source: http://www.dfwsolartour.org





The relationship of solar to the site is critical

Use	Definition
Roof-mounted solar energy system	A solar energy system mounted on a rack that is fastened to or ballasted on a structure roof. Roof-mounted systems are accessory to the principal use. (Grow Solar Model Ordinances 2020)
Building- integrated solar energy system	A solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. (Grow Solar Model Ordinances 2020)
Ground- mounted solar energy system	A solar energy system mounted on a rack or pole that rests or is attached to the ground. Ground-mounted systems can be either accessory or principal uses. (<u>Grow Solar Model</u> <u>Ordinances 2020</u>)







Source: U.S. Department of Agriculture





Elements within the zoning code to address related to solar

- Purpose and definitions
- Use cases
- Height allowances
- Aesthetic requirements
- Roof coverage

- Glare
- Non-conforming uses
- Historic and special-use districts
- Setback requirements (groundmounted)
- Lot coverage/impervious surfaces (ground-mounted)





Purpose & definitions

Best Practices:

- Clearly state your clean energy/solar goals as part of your zoning purpose statement
- Include solar and related energy terms in your definitions

Sample Definitions

- **1. Solar energy system:** A device, array of devices, or structural design feature, the purpose of which is to provide for generation or storage of electricity from sunlight, or the collection, storage, and distribution of solar energy for space heating or cooling, daylight for interior lighting, or water heating.
- 2. Solar photovoltaic system: A solar energy system that converts solar energy directly into electricity, the primary components of which are solar panels, mounting devices, inverters, and wiring.
- **3. Grid-connected solar energy system**: A solar photovoltaic system that is connected to an electric circuit served by an electric utility company.
- **4. Roof-mounted solar energy system:** A solar photovoltaic system mounted on a rack that is ballasted on, or is attached to, the roof of a building or structure. Roof-mount systems are accessory to the primary use.
- 5. Ground-mounted solar energy system (Accessory Use): A solar photovoltaic system mounted on a rack or pole that is ballasted on, or is attached to, the ground and the system is accessory to the primary use.
- 6. Ground-mounted solar energy system (Primary Use): A solar photovoltaic system mounted on a rack or pole that is ballasted on, or is attached to, the ground and is the primary land use for the parcel(s) on which it is located. Primary use systems are permitted through a discretionary approval process.
- **7. Community-scale solar energy system:** A solar photovoltaic system that qualifies for the [STATE COMMUNITY SOLAR PROGRAM NAME if applicable].





Use cases

Best Practices:

- Make rooftop solar a permitted accessory use in all districts where buildings are allowed.
- Make ground-mount solar a permitted accessory use in most or all districts.

Table. Basic Example of Solar in a Use Chart

Type of District	Accessory Use Solar	Community- Scale	Utility-Scale
Residential	Permitted by right	Permitted with a discretionary use permit	Prohibited
Commercial	Permitted by right	Permitted by right	Permitted by right
Industrial, Agricultural, Utilities, and Rural	Permitted by right	Permitted by right	Permitted by right
Special Conservation and Historic	Permitted by right or with additional standards	Permitted with a discretionary use permit	Prohibited





Height allowances

Best Practice: Exempt roofmounted solar energy systems on flat roofs from height limits or allow systems to exceed the maximum height by a fixed amount (5-10ft).



Tilted, Flat-Roof Mounted SED (Bastrop, Texas) Source: <u>https://www.energysage.com/project/7006/bastrop-solar-tour-rescheduled-for-nov-14-earth-sh/</u>





Aesthetics

Best Practices:

- Exempt solar from rooftop equipment screening requirements
- Allow PV installations to be seen from public roadways
- Limit screening or aesthetic requirements to historic districts





Historic and special-use districts

Best Practice: Provide guidance about how systems can be installed while still preserving historic character



Place collectors to avoid obscuring significant features or adversely affecting the perception of the overall character of the property.

Source: Plano Downtown Heritage Resource District Design Standards





Ground-mount best practices

- Setbacks & placement: Provide guidance on the placement of groundmount accessory solar if appropriate (for example, rear and side yards). Allow ground-mounted solar energy systems the ability to have a modest encroachment into the setback, similar to other accessory structures or mechanical systems.
- Lot coverage/Impervious coverage: Exempt ground-mounted systems from lot coverage/impervious surface calculations as long as the ground beneath the system is pervious (e.g., vegetated)





Learn more about these best practices through the Go Solar Texas and SolSmart guides



Go Solar Texas Guidelines



SolSmart Zoning Guide



Small-scale zoning group discussion

Prompts:

- Have you seen small-scale solar installed in your community and, if so, in what types of districts?
- Do you know of any zoning-specific challenges that have affected potential residential or commercial installations?
- What best practice elements do you see as potentially having local support? Opposition?





Large-scale zoning





https://scholarscompass.vcu.edu/murp_capstone/41/

Large-scale solar's relationship to the grid

Characteristics	Community-Scale Solar	Utility-Scale Solar
Technology	PV	PV (or CSP)
Relationship to the Grid	Connects to the distribution network either behind or in front of the meter	Connects to the transmission network in front of the meter
Relationship to the Site	Typically ground mounted and the principal land use, but can be sited on large rooftops	Ground mounted and typically the principal land use
Relationship to Existing Land Use and Development Pattern	Fits into the established lot or block pattern of the surrounding area	May require lot mergers, street removal, or new roads for site access
Site Area	1–20 acres	>20 acres
Rated Capacity	250 kW–5 MW	>5 MW





Solar siting authority





Zoning updates for large-scale solar







Zoning best practices for large-scale solar



Define terms	 Define large-scale solar as a unique land use (not an industrial land use), Include storage in the definition of large-scale solar Distinguish between small and large systems by area as needed
Enable development	Most large-scale solar will be a conditional or interim use in those districts where allowed, although small or community scale development can be a permitted use
Land use, not energy use	Performance or design standards should focus on land use impacts and benefits, not on energy use or performance
Recognize land use difference	 Exempt PV panels from coverage limits Exempt PV panels from impervious surface standards if ground cover is suitably pervious (see co-benefits below)
Capture co- benefits	 Enable habitat-friendly ground cover to be installed, established, and maintained Enable co-location of agricultural uses (sometimes in place of ground cover) Enable water quality (surface and ground water) improvements
Screening requirements	 Look to existing screening requirements as a guide, consistency across land uses Limit screening to residential districts or existing uses Balance screening against larger setbacks, both are not necessary
Setback	 Look to existing setback distances as a guide Balance setbacks with screening requirements (more screening, less setback) Measure setbacks from array edge
Glare	Glare studies only needed if adjacent to an airport. On-airport solar will be appropriately regulated by FAA
Decommissioning	Require decommissioning to a reasonable standard and financial risk

Source: Brian Ross (GPI) presentation to Sustainable Jersey, 2022

Large-scale solar standards & site conditions

- Standards
 - Establish dimensional standards for ground-mounted systems (e.g., Setbacks, height limits, lot coverage)
 - Require a decommissioning plan
- Site conditions
 - Ground cover encourage co-location with agriculture and/or pollinator-friendly plantings
 - Buffering or screening
 - Fencing, security, access, & parking
 - Impact on historic or cultural resources
 - Soil quality

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Large-scale solar development considerations

- Current and future land use
 - Agriculture, Forestry
 - Residential use
 - Industrial zoned land
- Location within the community
- Transmission line proximity
- Visual impacts
- Cultural, Hist., Env. resources
- Wildlife corridors

- Stormwater, Erosion, Sediment
- Financial incentives
- Employment (Short/Long-Term)
- Fiscal impacts
- Property Values; Taxation
- Storage safety preparedness
- Landscaping
- Decommissioning





Establishing and communicating procedural standards

- Define application process and fees
- Develop materials that help developers prepare application packages, plan for public hearings, or begin scoping out a project
- Educational materials that can address largescale solar development as a distinct project type include:
 - Fact sheets
 - Brochures
 - Guides
 - Web pages





This Factsheet provides information on the types of permits that may be required and the timing and sequencing of those permits to developers who are proposing to install solar energy generating facilities. Pre-application permit assistance, where applicants can meet with permit program staff to discuss a specific project, is available. To request a preapplication meeting, please complete the <u>Pre-</u> <u>Application Questionnaire</u> and submit it to <u>DEEP_OPPDRet.gov</u>. This Factsheet should be used in conjunction with the DEEP Bureau of Energy

and Technology Policy's Integrated Resource Plan Renewable Siting Recommendations.





Large-scale zoning group discussion

Prompts:

- Do you have parcels that could accommodate large-scale solar?
- Have large-scale solar installations been discussed in your community? If so, what has been the reception?











Next Steps

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Next steps for communities interested in participating in the cohort

- A "Solar Statement" (PR-1) is a letter that demonstrates your local government's commitment to pursuing SolSmart designation.
- All communities receiving technical assistance must submit a Solar Statement, and it's a prerequisite for designation at any tier.
- A Solar Statement is <u>not</u> a binding agreement, a memorandum of understanding or any other kind of legal document.
- The Solar Statement should be signed by a department head or an elected official, or it can go through a council approval process.

Please submit your Solar Statement by 5/10 or share with NCTCOG your proposed timeline for submission

SOLAR STATEMENT	
Tuesday, February 27, 2024	
Debra Perry International City/County Management Association 777 North Capitol St. NE, Ste. 500 Washington, DC 20002	Brandy O'Quinn Interstate Renewable Energy Council 125 Wolf Road, Suite 100 Albany, NY 12205
Dear Debra Perry and Brandy O'Quinn:	
On behalf of (<i>local government name</i>) I am proud to designated community. In partnership with the SolSn improve solar market conditions, making it faster, businesses to install solar energy systems. These effo related to solar development, which may save our loc	announce our commitment to become a SolSmart- nart team, our dedicated staff members will work to easier, and more affordable for our residents and rts will also increase the efficiency of local processes al government time and money.
We will leverage SolSmart to achieve the following so Choose an item or type a custom desc Choose an item or type a custom desc Choose an item or type a custom desc	lar goals: ription. ription. ription.
These goals demonstrate that our community is com market. This includes ensuring solar development is learning more from the SolSmart program how to exp solar energy adoption for those that are under resource	mitted to making continual improvement in our solar s inclusive and equitable. We're looking forward to and access to solar for all our residents and support sed or underserved.
The SolSmart program will build on our solar efforts, plans, community solar, solarize, state or other federa	such as (relevant plans or initiatives such as energy I solar programs)
To measure progress along the way, we will track key installed solar, permitting processing time, and growth	metrics related to solar energy deployment, such as in residential installations.
We understand that the SolSmart program has criteria Program Guide needed to achieve each tier of design complete the first requirement of the program.	a and point requirements as outlined in the SolSmart ation. We're excited to submit this solar statement to
Inquiries related to our SolSmart participation can be	directed to (city contact name) at (email address).

Title



Supporting activities post workshop 2

- 1. Identify staff in the planning department who can support efforts to integrate solar into planning documents and the zoning ordinance.
- 2. If you've already received it, review the SolSmart zoning memo with your planning colleague(s).
- 3. Discuss opportunities to enable small-scale solar as a by-right accessory use (if not already), either through a zoning determination letter or an update to the zoning ordinance.
- 4. Determine any upcoming plan revisions or new plans that may benefit from the inclusion of solar-specific language.





Workshop 3 overview

- Workshop 3 is a "Solar Permitting and Inspection Training" to help staff understand permitting and inspection best practices and relevant aspects of the technology.
- This session is **June 4th from 1-3pm** and will feature Bill Brooks, a national expert on solar engineering issues with over 35 years of experience.
- Permitting and inspection staff need to attend (or watch the recording) for your community to receive credit for PI-2 and PI-3.







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Thank You!

- If you want to have questions about the cohort, please reach out to Joaquin Escalante (energy@nctcog.org)
- If you have **questions about SolSmart or external TA**, please reach out to Zach Greene (zach.greene@wri.org)