Least-Conflict Solar Siting on Washington's Columbia Plateau

Kickoff Gathering Summary

Date September 20, 2022
Time 10:00am – 3:00pm PDT
Location Zoom online meeting
Links WSU Energy Program Least-conflict Solar Siting project website
Meeting Agenda
Zoom Meeting Recording

Meeting Objectives

- Launch a process to identify least-conflict lands in eastern Washington's Columbia Plateau region for utility-scale solar development
- Provide project background and introduce participants to the least-conflict process
- Begin identifying key considerations to guide least-conflict mapping
- Foster knowledge-sharing and collaboration among participants
- Lay the groundwork for the creation of mapping groups

Meeting Notes

Project Background and Purpose

Following an initial welcome, Karen Janowitz (WSU Energy Program) introduced the WSU Energy Program and the project team. She outlined the objectives and agenda for the day's gathering. Participants then had an opportunity for quick "impromptu networking" to meet others attending the meeting.

Karen continued with an overview of the Least-Conflict Solar Siting on the Columbia Plateau project. She described the legislative directive and context for the work and acknowledged the assumption that utility-scale photovoltaic solar installations are needed and that some have been and will be built in the Columbia Plateau region. The least-conflict solar siting process aims to answer the question: *Where can large-scale solar be developed in the Columbia Plateau region while also ensuring that important habitat, productive farmlands and rangelands, and Tribal rights and*

At-a-Glance Information

Hosted by Washington State University Energy Program in partnership with the Conservation Biology Institute and Ross Strategic.

Approximately 90 people joined the meeting.

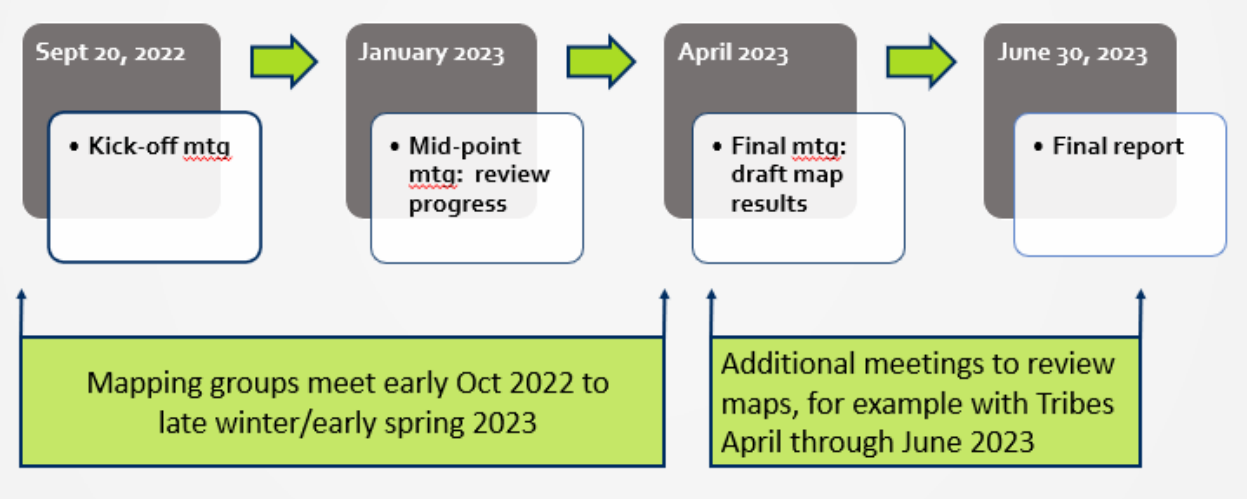
Meeting participants represented a broad array of organizations and geographic locations.

Most meeting participants' top interests (indicated via registration) were solar PV development (31%) or environmental conservation (28%), followed by agriculture (farmlands and/or ranchlands) (21%) and tribal considerations (9%). Other interests (10%) included Hanford cleanup and land use planning.

cultural resources are protected? Based on a similar project in the San Joaquin Valley, California, this project is unique in that it is landscape-based, not site-specific, non-regulatory, people-oriented, and voluntary. It will generate a mapping tool that can be used by planners, developers, agencies, and anyone else.

The project will involve three large gatherings (September, January, and April) with mapping groups meeting in between. A Final report will be produced by June 30, 2023.

Project Schedule



Audience Participation

Following Karen's presentation, participants were asked to share short responses to the question: **What opportunities or concerns does the concept of least-conflict solar siting evoke for you?** Responses were varied but many cited the opportunities to "think outside the box," protect vital habitat, wildlife, and ecosystem services, and further consider the relationship between the state's Growth Management Act (GMA), energy siting, resource lands, and critical areas. Concerns included losing resource lands to solar development, repeating mistakes of the "big dam" era, and the process' lack of regulatory "teeth."

Overview of Least-conflict Process

Jim Strittholt (Conservation Biology Institute) provided an overview of the least-conflict process. He began with a description of the 2016 San Joaquin Valley project where groups representing the solar industry, farmland, and environmental conservation mapped least-conflict areas supported by mapping expertise and coordinated through an online gateway. Jim described how Tribal considerations, information about Department of Defense operational areas, and transmission were incorporated into the project. In addition to mapping, the effort identified key challenges and recommended solutions to solar siting issues.

Audience Participation

Following Jim's presentation, participants were asked to contribute to a word cloud poll asking, **What are sources of potential solar siting conflict on the Columbia Plateau that should be considered in this effort?** Top responses included shrubsteppe, habitat, trust, connectivity, farmland, and resources (see

word cloud image below). In the afternoon breakout sessions, groups discussed how these sources of conflict could become siting criteria for the least-conflict process.

Overview of Project Mapping Groups

After lunch, Jim Strittholt provided an overview of the mapping group process and Data Basin, CBI's web-based mapping platform. Mapping groups are organized around specific interests, and members work together to develop a specific least-conflict map from each group's perspective. Through a series of meetings, mapping groups:

1. Choose mapping criteria and a modeling approach
2. Develop a draft model that defines least-conflict
3. Present draft results and rationale at the project's second large gathering (January 2023)
4. Prepare a final draft
5. Present final group results at the third large gathering (April 2023)

Mapping groups will coordinate their work through the Washington Columbia Plateau Gateway within CBI's Data Basin. Data Basin is a web-based mapping and analysis platform that enhances knowledge sharing through easy data access and integration. The design focuses on usability and supporting collaboration. The Gateway has sections to support collaboration for each mapping group. Data and maps can be as simple or complex as groups would like. Following this gathering CBI hosted in-depth Data Basin tutorials, which were recorded.

Interest-based Small Group Discussions

Meeting participants were invited to join one of six small groups (Zoom breakout sessions) to meet other participants with similar interests and begin discussing key least-conflict criteria. Some of these small groups may turn into mapping groups, and some may not. Small groups were: (1) Tribal considerations; (2) Environmental conservation; (3) Solar PV development and transmission; (4) Farmlands; (5) Ranchlands; and (6) Local communities and economies. Small group participants were asked to discuss two questions: **What are the ideal siting criteria needed to determine optimal lands, if any, for solar development?** and, **Beyond siting criteria, are there other opportunities or challenges related to solar development that this least-conflict project should address?** Each small group used a

virtual whiteboard (Jamboard) to organize initial responses. High-level takeaways from each small group are described below.

Environmental Conservation

Jim Strittholt (CBI) and Moriah Van Voorhis (CBI) facilitated the environmental conservation small group. Potential siting criteria the group identified included:

- **Areas that limit impacts to water quality, run off, and riparian zones.** Noting significant current issues with water availability and quality in the Columbia Plateau, participants emphasized that solar development should not exacerbate water challenges through additional withdrawals for construction and impacts of washing and run-off. In addition to solar panels themselves, complementary needs like access roads and vegetation control can also degrade water resources.
- **Areas that avoid priority species, habitat, and habitat connectivity**. Participants noted concern over the scale of potential solar development in a shrubsteppe environment. They highlighted the importance of maintaining ecological connectivity and migration corridors and avoiding impacts to species of concern, native grasslands, wetlands, and critical habitats. For example, solar development should avoid Conservation Reserve Program lands, Washington Department of Fish and Wildlife's wildlife areas, conservation easements, and north facing slopes. Useful resources mentioned by participants included:
    - Audubon and eBird (ebird.org) data for the Columbia Plateau.
    - The Washington Shrub Steppe Restoration and Resilience Initiative , which brings together stakeholders to advise on ensuring persistence of this landscape.
    - RCMAP data, which characterizes land cover types in the Western United states.
    - The Department of Natural Resources' Washington Natural Heritage Program, which has data on rare plants.
- **Already disturbed areas.** Participants emphasized that impacts to habitat and species will be minimized by developing on degraded or developed lands. These may include brownfield sites as well as sites that are already developed for other uses (e.g., wind energy, transmission corridors). It may also include areas with invasive species or where traditional uses are now restricted, such as agricultural lands without access to sufficient irrigation water.

Other opportunities and challenges they identified included:

- **Tensions across the "Cascade divide."** Public support for solar siting is influenced by a narrative that the more urban west side of the State has the most influence on clean energy policy, and the more rural east side bears the brunt of clean energy impacts. Recent legislation expanding the role of the Energy Facility Site Evaluation Council (EFSEC) and, in some cases, limiting the role of local decision-making, has exacerbated this tension.
- **Strengthen monitoring and enforcement.** More robust monitoring can inform adaptive management of environmental conditions on developed sites, and greater enforcement can help ensure compliance with mitigation and other requirements.
- **New technologies and solutions.** Innovations like agrivoltaics can use land for multiple purposes, reducing pressure on other natural and working lands. Emphasis should continue to be put on solutions like rooftop solar that can reduce the need for utility-scale projects.

- **Tension between agricultural and natural lands.** Public opposition to developing even marginal agricultural lands can put pressure on use of natural areas instead.
- **Site design.** Sites can be designed to reduce environmental impacts. For example, fencing and the arrangement of solar panels can help animals move through sites.
- **End of life issues.** Developers should have plans for final disposition of sites when facilities are retired or not needed. Solar panels should be recycled.
- **Mitigation.** The state could provide mitigation funds for solar projects, for example protecting critical mitigation lands by purchase or easement.

Participants suggested additional information that would be useful for the process going forward, including greater understanding of:

- Impacts of solar on water use and quality.
- Expected sizes and acreage affected by utility-scale solar projects.
- Forecasts of the amount of solar generation needed to meet state energy and climate goals and potential future shifts in energy sources (e.g., whether hydro power may be replaced with solar and wind).
- An overview of the environmental review and permitting process, especially at the county level.
- An overview of Washington's Healthy Environment for All (HEAL) Act on environmental justice and how it might pertain to solar development.

Tribal Considerations

Karen Janowitz (WSU Energy Program) led the Tribal considerations small group.

An important theme of discussions was that mapping may not be the best way to identify and engage on Tribal cultural issues because Tribes don’t want to publicize culturally significant locations. Instead, there should be individual efforts with Tribes that have interests in the area. The Department of Archaeology and Historic Preservation has predictive maps based on access to natural resources and water that can show Tribal interests in a location and help identify who developers should talk to, but these maps don't show locations of sacred sites.

In addition to discussing mapping, participants identified several challenges related to solar development:

- **Some losses can't be mitigated.** There is no mitigation when cultural and sacred sites are lost. Solar development should avoid these sites. Many companies are interested in sites along the Columbia River where there are many sacred sites.
- **Cultural sites are not protected by codes.** Cultural sites aren't necessarily protected by county codes. If codes are met, projects are likely to go through. Cultural sites may be addressed in long-term planning, but guidance may not trickle down from long-term planning to current decision making.
- **Tribal capacity and funding constraints.** There is a lack of funding for Tribal staff to attend all the meetings and work on all the projects going on. Tribal Historical Preservation Officers are not funded at the level needed to do the work they have. There is concern that the recently

passed Inflation Reduction Act will bring in even more developers and proposed projects, further taxing Tribal capacity.

- **Lack of early engagement.** Tribes are not being brought in early enough in the siting process. They are often only contacted at the time of permitting after companies have done large amounts of site assessment work. Engagement should occur before land is leased.
- **Formal Tribal consultation is with government, not developers.** Formal consultation occurs between Tribes and state or federal government. Often there is not enough time in formal decision-making processes for true discussions to take place. Industry talking directly to Tribes is not formal consultation.

Participants also noted examples of Tribes that are developing solar sites. For example, there is a Nez Perce initiative to support a large amount of solar development on Tribal land. The Yakama Tribe is starting to put solar over canals on the reservation in order to produce energy and to reduce evaporation of water. Participants also discussed serving Tribal energy needs with solar.

Solar PV Development and Transmission

Tom Beierle (Ross Strategic) facilitated the solar PV development and transmission small group. Potential siting criteria the group identified included:

- **Proximity to transmission.** Proximity to transmission lines and interconnection points—as well as capacity of lines for additional load—are critical considerations for solar developers. In addition to understanding current locations and capacities, it would be valuable to map where future infrastructure is likely to go (e.g., from increased federal investment). One person mentioned the potential to develop solar facilities on lands that are transmission rights-of-way.
- **Proximity to high-demand facilities.** Cloud server farms and other high-demand user facilities can be nearby users of solar energy, reducing the need for long-distance transmission capacity.
- **Adequate solar insolation levels.** Solar insolation (i.e., the amount of solar energy in a specific area over a set period of time) influences the amount of energy that can be produced from solar infrastructure and the cost-effectiveness of investments. Location-specific factors like topography (e.g., ridges and valleys) and weather patterns (e.g., inversions) can affect insolation. As technology evolves, future projects may not need insolation levels as high as in the past to be viable.
- **Conducive physical conditions of sites.** Site conditions like steep slopes, forested areas, wetlands, and floodplains make it more difficult and expensive to site and construct solar facilities or may be off-limits for development. Conditions like adequate water and suitable soils are valuable for solar development.
- **Interested Tribes, communities, and landowners.** Solar developers would prefer to establish sites where Tribes, communities, and landowners are supportive. This support can speed the process of siting, review, and permitting and help avoid uncertainty and delays caused by opposition and appeals. Indicators of potential support include land that is zoned for clean energy development (e.g., Klickitat County's Energy Overlay Zone) or otherwise designated for clean energy development (e.g., Department of Natural Resource lands identified via the department's Solar Mapping Project). Strategies like early Tribal and community engagement and community benefit agreements can help build support.

- **Avoiding other high value land uses and characteristics.** Developers would like to avoid competition with other high-value land uses and characteristics (and related controversy or opposition). Participants specifically identified avoiding land that is culturally significant for Tribes, key habitat, and valuable agricultural land. Opposition may also emerge around lands not currently regarded as high-value but are identified as such once there is additional assessment and scrutiny due to the siting, environmental review, and permitting process.
- **Disturbed and/or degraded lands.** Disturbed or degraded lands may be appropriate for solar infrastructure, avoid competing land uses, and potentially benefit communities by developing land that would otherwise be unproductive. Participants discussed the potential of developing on brownfield sites, but also noted that it can be expensive to remediate these sites and the risk of developing on contaminated property can inhibit financing.

Other opportunities and challenges they identified included:

- **Importance of Tribal and community engagement**. Decision-making should include assessment of cultural impacts and involve Tribal engagement and the opportunity for public input.
- **Skilled and trained labor.** The availability of workers in an area or that are able to relocate for construction is valuable to developers.
- **Incorporating a regional perspective**. Given that Washington's energy system is connected to other states and provinces in the region, it is important to understand how much solar development needs to happen within Washington to supply state and regional clean energy needs. There is the potential to over-build solar in Washington if regional supply and demand for clean energy are not considered.
- **Solar and storage.** Many solar facilities are now being developed with accompanying battery or other storage. The presence of storage can affect how much transmission capacity is needed (and when) and the location of generation relative to where it is used. Storage can create new permitting issues (e.g., fire safety for batteries). It can also influence site selection—for example locating solar facilities near geographies appropriate for pumped hydro storage.

Farmlands

Justin Brice (CBI) and Shelby Thomas (Ross Strategic) facilitated the farmlands small group. Potential siting criteria the group identified included:

- **Irrigation status and/or water access.** If Columbia Plateau resource lands have access to water, there is likely a crop that can grow well there no matter what the soil properties are (for example, grapes—a potentially lucrative crop in Washington— grow well in sandy soil that cannot support other types of crops). If access to water and/or the ability to irrigate changes in the future, farming may or may not be viable on the same lands that support farming today. A water rights and irrigation history map layer could be helpful with this criterion.
- **Farming value and soil quality.** Soils have different qualities and capabilities when it comes to the types of crops they can support and production value. Using soil quality as a mapping layer would help identify where high-yield and/or lucrative crops are most likely to grow. However, as noted in the above example about grapes, it is important not to assume that “lower quality” soil is less valuable. A suggestion was made that highly erodible soils (not suitable for farmland)

could be suitable for solar. These areas may also be suitable for the USDA Conservation Reserve Program.

- **Additional context around existing farmlands.** Farmland connectivity, proximity to infrastructure, and history of farmland use are examples of the type of information necessary to fully understand farming resource lands and how solar development could impact them.

Other opportunities and challenges the farmlands group identified included:

- **Working with Washington's EFSEC.** There is concern that solar siting projects can be permitted/fast-tracked through EFSEC at the state level and this overrides local authority. The process would be better if there were more coordination between the state and counties.
- **Growth Management Act (GMA)** and current resource land designations (specifically non-agriculture uses) do not necessarily align with lands being designated for solar siting. Some counties don't allow for conditional use, and changing these areas is extremely difficult.
- **Intersection of solar siting with GMA's Voluntary Stewardship Program (VSP).** If current farmlands are re-designated for solar development, they are no longer considered a resource land and VSP no longer applies.
- **Co-location.** Co-location of solar with active farmland was discussed and seen as less likely in this geography due to limited precipitation.
- **Economic considerations.** The economic reality of farmers, increased land values, and the appeal to sell for solar development was discussed.

Ranchlands

Gladwin Joseph (CBI) facilitated the ranchlands small group. Potential siting criteria the group identified included:

- **Avoid designated rangelands**, especially those of long-term commercial significance. Ranchers are concerned they will not be able to competitively lease federal lands for grazing if these lands are leased to solar companies.
- **Consider marginal lands and/or fire-prone lands.** These lands have little or no agricultural or industrial value. In addition, siting solar development on fire-prone lands could provide fire breaks. With the right kind of design, solar could also provide local sources of electricity when distant sources are inoperative or transmission is disrupted (e.g., because of fires).
- **Proximity to transmission** will reduce the need for additional infrastructure and reduce negative aesthetic impacts.

Other opportunities and challenges the ranchlands group identified included:

- **Rapidly changing solar technology** may make large-scale development obsolete in the near term.
- **Fragmenting of ranchlands disrupts the connectivity** for wild herbivores (ex., mule deer) that are necessary for the health of the grasslands that serve both wildlife and cattle. Cattle use the ranchlands for a small part of the season while wild animals are always there.
- **Co-locating solar and ranchlands is not tenable** in the long term, however the group did not have adequate time to explore this opportunity in any depth. Some felt that co-locating solar on

grazing land may impact the quality of soils and also the grasslands making it unsuitable for grazing.

- **Social divisiveness** between ranch owners that solar siting is bringing to the region concerned some participants.
- **Scarcity of water** already affects Eastern Washington counties. Participants raised concerns that limited supplies of water for domestic purposes would need to be redistributed for solar installations.

Local Communities and Economies

Angela Cruz (Ross Strategic) facilitated the local communities and economies small group. Potential siting criteria the group identified included:

- **Avoid city limits, Urban Growth Areas and Rural Activity Centers.** Understanding how local governments define areas for planning and zoning is important. Large installations should not take up land that is needed for compact development. Especially in rural areas with large amount of farmland, Rural Activity Centers are essential to communities by providing space for schools, post offices, and other services.
- **Consider interconnection queue position.** Siting criteria should consider the queue that developers enter into in order to connect to utilities, such as the Bonneville Power Administration.
- **Zoning and local ordinances conducive to solar.** Identifying areas that are least conflict does not imply that they can be developed consistent with local ordinances and zoning. It is important to talk to local planning offices before considering or developing a site. Some areas may not currently be zoned for solar, and there will be a delay for re-zoning.

Participants also noted other criteria to consider, including:

- Locations of substations and distribution of transmission lines
- Avoid areas designated in county codes as prime/unique farmland
- Solar site access (e.g., roads, etc.)

Other opportunities and challenges the group identified included:

- **Address and avoid unequal benefit to communities hosting a project.** Hosts of solar arrays on private land and those in the transmission corridor can often receive one-time payments for their land. On public lands, the value of solar depreciates over time, leading to reduced tax revenue to communities and a shift in tax burden over time. (Participants discussed that revenue assessors are revisiting assessment of the value of solar installations in Washington). It is important to consider and communicate financial benefits to communities when considering new solar sites.
- **EFSEC versus local control.** The dynamic between EFSEC and local communities may be a place of conflict moving forward in Washington state.

Project Next Steps

Karen wrapped up the gathering by thanking everyone for participating. She noted that the second large-group gathering is being planned for January 2023. The focus of the second meeting will be the ongoing work of the mapping groups to identify least-conflict areas, as well as presentations of significance to the project. Between the kickoff and second meetings, CBI will host Data Basin tutorials and convene the mapping groups.

Before closing, participants were asked to identify which mapping groups they would like to be notified about following the meeting. This invitation to mapping groups will also be made to those who weren't able to attend the meeting but have identified themselves as being interested in the project.