



## Little Miami Watershed Network

P.O. Box 23

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November 15, 2021

Ohio Power Siting Board Public Hearing  
Greene County Fairgrounds  
Xenia, Ohio 45385

In regards to Case #: 21-0117-EL-BGN

Dear OPSB Board Members,

Please give consideration to the comments of the Little Miami Watershed Network. The mission of our organization is to facilitate communications, build partnerships, and promote stewardship and sustainability across the watershed. We work to stimulate public interest in the river, encourage preservation of river heritage and work on clean up and restoration.

### **Best Practices for Zoning and Siting of Large-scale Solar Arrays**

Presented by: Little Miami Watershed Network

#### **Our Main Concerns**

**"While trying to save the climate, are we killing the environment?"-Michael Shellenberger**

The effect of utility sized solar arrays on the local environment- land, water, flora, and fauna.

- a. There is not a lot of research on the effects to the environment including land fertility, native plants, water, and wildlife that inhabit the broader area.
- b. Will it create its own brownfields at the end of their useful life?
- c. Will it kill off land and aquatic wildlife?
- d. Will it consider the natural weather conditions common to the area, such as flash floods, tornadoes?
- e. Will it affect local aquifer recharge rates impacting surrounding landowners and communities?
- f. How will their noise be minimized? Who will repair local road damage? How will social justice and environmental justice be addressed?
- g. What assurance do neighbors have for long term maintenance and removal?



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- h. What assurances are there that no PFAS, PFOS or related chemical are used in any part of the materials or process.

Universities should be given full access to gather land and water data for research purposes for long term studies.

Sources:

[https://www.ted.com/talks/michael\\_shellenberger\\_why\\_renewables\\_can\\_t\\_save\\_the\\_planet/up-next?language=en](https://www.ted.com/talks/michael_shellenberger_why_renewables_can_t_save_the_planet/up-next?language=en)

<https://energynews.us/2020/11/09/scaled-back-solar-farm-still-a-threat-to-watershed-connecticut-group-says/>

Oregon Secretary of State Administrative Rules

### Threats to the Prime Agricultural Land and How to Curb the Effects

1. Site utility sized solar on already created brownfields, businesses, roofs of parking lots like the Cincinnati Zoo, homes, and under existing utility power lines.
2. Make sure there is no damage to bedrock so hairline cracks are not created that will impact the hydrology of the area.
3. Soil productivity and fertility maps should remain the same so the quality of the land is not changed in a negative way.
4. Keep the topography as it currently is and the topsoil in place.
  - a. Excavation of land will disturb topsoil and many native species on the land, including but not limited to pollinators and native species. Do not alter the current topography of the land.
5. Make sure bonding mechanism for solar removal will grow to meet the post-production or post-use requirements as determined by Land Grant Universities to make sure the land is useable after development.
6. The potential for large amounts of decommissioned panels and other hazard waste and supplies is very real, so be sure removal and proper disposal are part of the post-production plan.
7. Leave standing trees. Cutting down large stands of trees will increase erosion. Plant 2 native trees for every tree of any type that is removed.
8. Require a 'no spray' spray policy so herbicides and pesticides do not get in the ground or water. Maintenance policies should be spelled out in advance and meet ODNR Division of Natural Areas & Preserves natural areas standards.

Source:

<https://www.sustainablesites.org>





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### Threats to the Water Ways and How to Curb the Effects

1. Use greater setbacks on ALL property boundaries of development, especially those near water ways. Setbacks should be from property lines. The setbacks are integral for the cleanliness of the water flowing into the streams and rivers. Water is cleaned best by the ground and roots before it enters the stream or river, thus the farther back from the waterway the better.
2. Use double row of erosion control barriers to help curb erosion from the development.
3. Use filter strips to protect the riparian corridor on ALL waterways within prospective property boundaries, ensuring that they are all adequate to the size of the ephemeral, intermittent and flowing streams. Large riparian buffers are essential to maintain water quality. [1 mile from major and Scenic Rivers, 300 ft. from small streams per recommendations of the Greene Co., Planning Board.]
4. Use high berms covered with topsoil from off site on all edges to not only reduce visual and increase aesthetic impact, but also promote native plant growth and protect the State Scenic Rivers and other major waterways. The main functions of berms are to control erosion and sedimentation by reducing the rate of surface runoff.
5. Planting trees will help with the important aspect of shading the river, but also soften the view scape.
6. Seriously consider the geology of the land. Karst, a porous limestone bedrock with solution voids in its joints and bedding planes, is overlain with a thin layer of glacial till or soil. This terrain is common in some areas of the state where these projects are being considered and not enough consideration has been given to possible impact on aquifers in the glacial till and deep in the limestone itself.
7. Make sure there are no PFAS or related 'forever chemicals' in the materials that could impact the soil, stormwater runoff, drinking water or aquifer.

#### Sources:

<https://crwp.org/wp-content/uploads/2021/02/streammaintenencemanual2015.pdf>  
<https://www.greenecountyohio.gov/301/Regional-Planning>  
[https://ohiodnr.gov/static/documents/geology/MiscMap\\_OhioKarst\\_2016.pdf](https://ohiodnr.gov/static/documents/geology/MiscMap_OhioKarst_2016.pdf)  
<https://www.youtube.com/watch?v=7QhpK2Kxv-U>  
[{C0A8A29D-275C-45FD-97DB-F8BA66E80800}-2.pdf](http://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Construction-Stormwater-GP)



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### **Wildlife Friendly Attributes to Implement**

1. Use Wildlife and animal friendly fencing.
  - a. Use solar panels that do not disrupt the natural wildlife or mimic water surfaces.
  - b. Use fencing that allows animals and small wildlife to pass under and through it without trouble.
  - c. Place panels high enough so native plants a better chance to get established and grow, or domesticated animals can also use the land.
1. Use pollinator friendly plants and flowers, and maintain their upkeep as approved by the ODNR Division of Natural Areas & Preserves for the entire life of the project. Do not let invasive plants to take over
2. Native forbs (flowers) and grasses are site and soil type specific. Use only plants native to that county as defined by the Ohio Pollinator Habitat Initiative [OPHI] and E. Lucy Braun's books on Ohio plant occurrences and distributions.
3. In large-scale arrays, canvassing of the land may require different native plants in different parts for them to thrive. Also be aware of a 'heat sink' effect from the heat generated from the panels.
4. Require white grid structure on solar panels so they do not confuse wildlife into thinking the panels are water. Place white outline/grid like structure on the panels. Studies show the panels with 2" white gridlines do not resemble water and reduce the environmental impact.
  - a. Mayflies and other insects lay their eggs on the panels because they look like water, this then kills the eggs.
  - b. Studies have also shown that waterfowl or Anseriformes need rough surfaces or water to take flight. Often, they land on panels and cannot fly off.
5. Develop a full-term maintenance plan of the land to include the use of native genotypes and optimal mowing times for wildlife and pollinator survival and prevent an invasion of non-native species.

#### **Sources:**

HORVATH, GABOR, and MIKLOS BLAHO. "Reducing the Maladaptive Attractiveness of Solar Panels to Atactic Insects." Conservation Biology, 2010.

[https://mcdef.org/native-plants-on-solar-farms-workshop-recording-Reducing\\_the\\_Maladaptive\\_Attractiveness\\_of\\_Solar\\_P.pdf](https://mcdef.org/native-plants-on-solar-farms-workshop-recording-Reducing_the_Maladaptive_Attractiveness_of_Solar_P.pdf)





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### Other Changes Needed

1. Agree to inspections of sites pre, during and post building.
2. The permit issued should only cover the current application and technology. A new permit should be required for "Next Generation" technology and should not be issued until a new impact study has been done.
3. Final stabilization and post-use report and site restoration approval should not be done until a full growing season after the demolition work is completed.
4. Make sure the company does its OPSB required survey work at optimal times to find plant and animal life.
5. Encourage plant rescue operations before construction by recognized groups focused on native plants.
6. Require LiDAR and archeological surveys of land before siting and solar development to prevent building over important archeological sites, that adhere to the latest guideline for research design. This archeological/ history/architecture survey should incorporate the entirety of the proposed project area and limits of disturbances, including areas of direct/indirect effects, as well as an area extending within the proposed facilities' line-of-sight.
7. Require the determination of the time it will take for pollution of the buried aquifer to travel to nearby wells and other private or public drinking water sources.
8. Create an emergency disaster plan to protect both the solar installation and private citizens and property in the area. Quickly replace damaged solar panels to keep toxic releases to a minimum.
9. Make sure the taxpayer is held harmless for road repair as well long-term maintenance and disposal of installation. Have a Road Use Maintenance Agreement [RUMA] in place.
10. Address all environmental, social, and economic justice issues.
11. Require noise abatement as well as reduction in visual impacts.

### Special Considerations for the Kingwood Site

#### State owned and recreational use in the area

The proposed Kingwood utility sized solar installation is situated along Clifton Rd. which parallels the headwaters of the Little Miami River, the first National and State Scenic River in Ohio. As such, it deserves special consideration of its status. Clifton Gorge Nature Reserve, John Bryan State Park, Glen Helen Nature Preserve, and Jacoby Boat Launch are the biggest



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nature and tourist attractions in the county and are near this proposed installation which is sited along one of the major roadways to access them. ODNR Scenic Rivers program depends on the Stream Quality Monitoring protocol which uses macroinvertebrates to ascertain water purity. If the panels mimic the water surface of the Little Miami River and kill off the macroinvertebrates, this research-proven method, used for the past 40 years will become invalid. ODNR has just purchased land within a mile of Kingwood to create a State Park honoring our local American Indian heritage and especially Tecumseh and the Shawnee. This proposed site is only 300 feet from Camp Clifton, a popular 4-H camp.

### Topography and archeology

The State has just purchased a building to turn into a visitor center honoring Tecumseh who was born in this area. This area is featured in pioneer accounts of Simon Kenton and Daniel Boone. Numerous ancient earthworks occur in the vicinity and along the Little Miami River. One such site nearby called Bellworks was included as a featured plate in Ancient Monuments of the Mississippi Valley, the landmark book by Ephraim Squier and Edwin Davis, which in 1848 became the first publication of the Smithsonian Institution. Since this area has been inhabited for over 2000 years, it needs to have a full archeological study done before permitting. Many sites are noted on archaeology maps of the area.

Green County's geology in this area puts it at high risk for bedrock damage that will have long lasting and unknown effects. Some of the glacial till topsoil in the area is very thin or on top of karst and thus the bedrock is subject to damage from solar post drilling.

1. Greene County, Ohio is part of the largest single area containing Karst which is in the Dissected Niagara Escarpment.
2. This area must be properly surveyed before construction because of the sink holes existing under the surface.
3. The Dayton formation includes Greene, Clark, Miami, Montgomery, and Preble counties According to the Department of Natural Resources.
4. The water runoff can sink into the karst below ground and create and possibly worsen the stability and pollution of the ground and water.
5. As this location is close to the Traditional Shawnee Land, artifacts from that time-period need to be identified. The Old Town site is known for its part in early frontier life.





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### Weather

Greene County is at very high risk of tornadoes. One in 2017 went straight up Clifton Rd. and downed trees that caused a log jam on the Little Miami River at Rt.68 and touched down again and damaged a home at the corner of Clifton Rd and Rt. 72. The thought of solar panels flying through the area and landing who knows where is frightening.

1. Greene County, Ohio according to Home Facts has had 114 tornados between 1950 and 2015.
2. The Xenia EF 5 tornado in 1974.
3. In 2017 an EF1 tornado went up Clifton Road.
4. The Memorial Day EF 4 tornado of 2019 entered Greene County.
5. The risk level of another disaster happening in Greene County specifically is high.

### Research Opportunities

The proposed Kingwood site is situated close to Central State University, one of two Land Grant Universities in Ohio. Since there is not much research on the short- or long-term effects of large-scale solar arrays on any of the concerns listed above, CSU should be encouraged and given full access to the property and records of this site to conduct a rigorous long-term study on the soil, water, wildlife, individual property values, etc.

### Sources:

<https://www.greenecountyohio.gov/301/Regional-Planning>  
<https://www.wdtn.com/news/a-year-of-recovery/timeline-of-the-memorial-day-tornado-outbreak/>  
<https://www.homefacts.com/tornadoes/Ohio/Greene-County.html>  
[https://www.weather.gov/iln/20170524\\_beavercreektwp](https://www.weather.gov/iln/20170524_beavercreektwp)  
[https://ohiodnr.gov/static/documents/geology/MiscMap\\_OhioKarst\\_2016.pdf](https://ohiodnr.gov/static/documents/geology/MiscMap_OhioKarst_2016.pdf)

### Testimony of:

A handwritten signature in black ink, appearing to read "Bill Schieman".

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Bill Schieman  
Member, Little Miami Watershed Network Leadership Team

As of 11/12/21