

# *INDIANA RENEWABLE ENERGY*

*Siting through Technical Engagement and Planning (R-STEP™)*

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## Pollinator Friendly and Agrivoltaics Considerations

August 14<sup>th</sup>, 2025



Extension - Community Development

- Ty Adley, AICP
  - Career
    - Planning Director for the City of Plymouth
      - Previously; Marshall County, Berkeley County, SC, Madison County of Governments, Ball State University Urban Planning Department, and City of Fishers
  - Affiliation
    - President-Elect APA-IN
  - Education
    - Ball State University
      - BUPD and MURP

- Zoning Ordinances and the Governing of Landscaping and Ground Cover
- Pollinator Friendly Ordinances
- Agrivoltaics
- Lesson in Regulation Interview

- 2021 Indiana Renewable Energy Community Planning Survey and Ordinance Inventory Summary
  - 50% of Communities
    - Regulation of Seed Mixes, use of native plants and management of noxious weeds
    - Also inclusion of pollinator-friendly ground cover
  - 75% of Communities referenced landscaping requirements



## Indiana Renewable Energy Community Planning Survey and Ordinance Inventory Summary

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- Indiana Renewable Energy Community Planning Survey and Ordinance Inventory
  - 2021 Original
  - 2025 Update (anticipated Q4)



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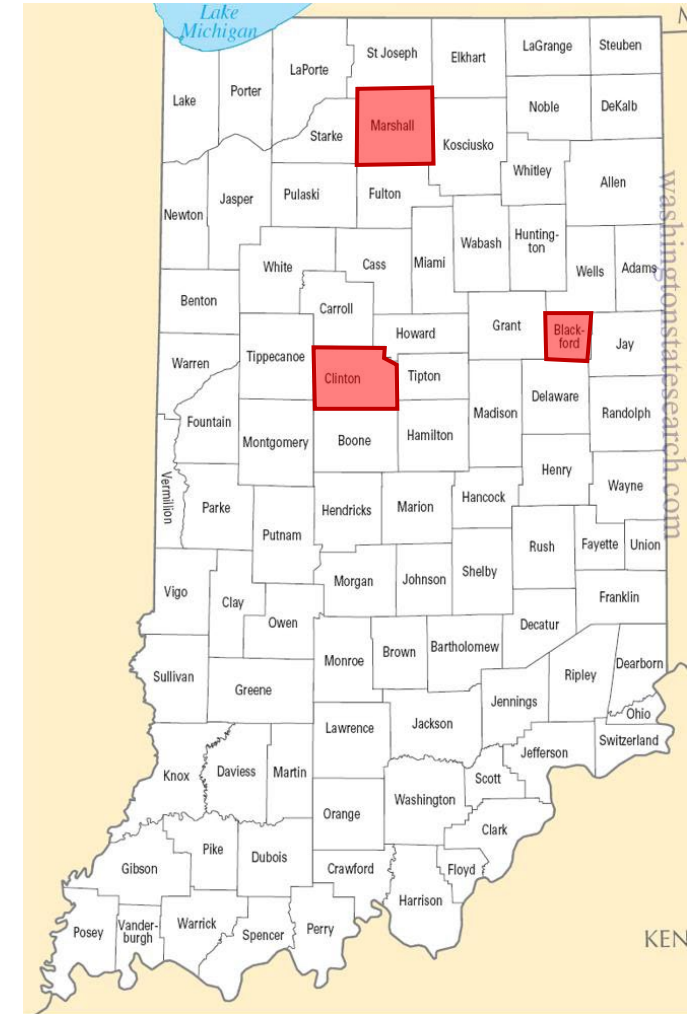


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- Indiana Communities
  - Blackford County
  - Clinton County
  - Marshall County



- Blackford County
  - Noxious Weeds (Commercial Solar Energy Conversion Systems (1105.13))
    - “OPERATOR SHALL ELIMINATE ALL NOXIOUS WEEDS, WITHIN THE CSECS PROJECT SITE OR WITHIN PERIMETER FENCES, UNDER OPERATOR’S CONTROL.”





- Clinton County
  - Solar Overlay District
    1. “K. Ground cover around and under solar arrays shall be planted and maintained as perennial vegetative cover, unless producing a yearly agricultural crop for harvest.
    2. L. All facilities, arrays, fencing, buffers, vegetative cover, bufferyards, and other assets shall be maintained in good condition. Plantings that become diseased, damaged, or dead shall be replaced within six months.”



- Marshall County

- Solar Energy Systems (Farm Scale)

1. Buffer Standards

1. “1). Shall provide adequate visual 4 season screen while within 250’ setback from residences and when adjacent to roadway intersections and where required by the Board of Zoning Appeals.
2. 2). Buffering shall be maintained including but not limited to; trimming if necessary, removal of dead or fallen trees and replanting for the life of the project.
3. 3). \*Buffering shall be considered when adjacent, non- residential parcels may have competing uses.
4. 4). Buffering may be waived by agreement between the developer and nonparticipating landowner.”

2. Height Minimum

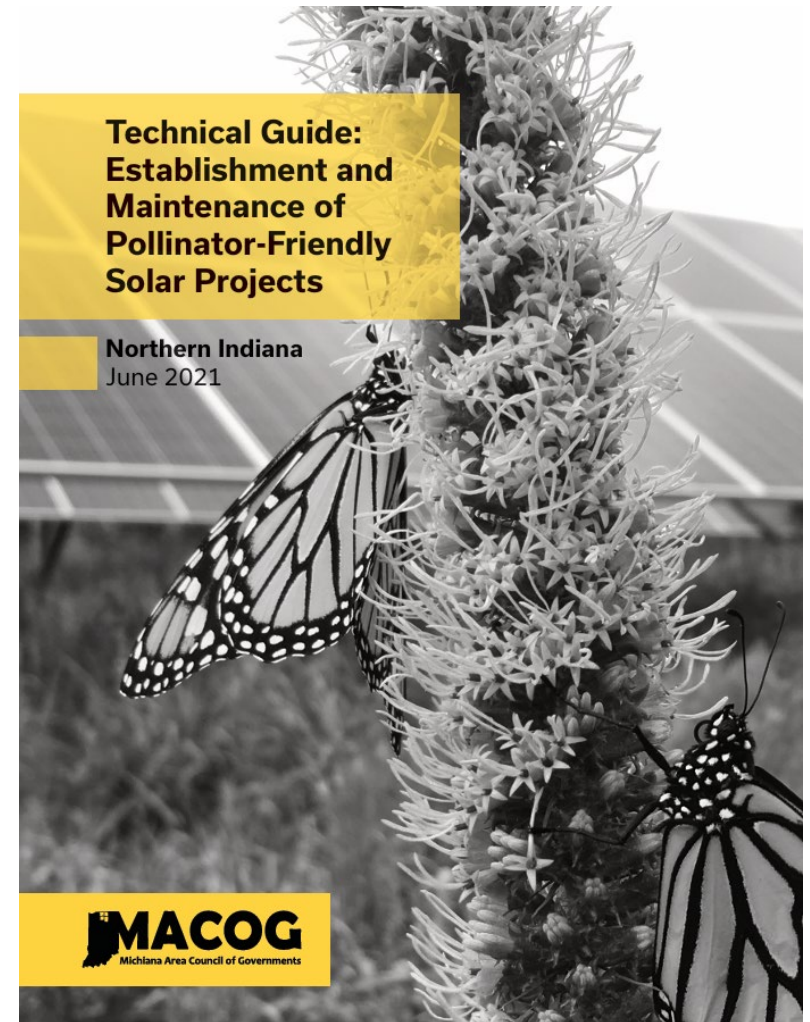
1. “...from grade is 3’ for pollinator species to grow without obstructing the panel efficiency.”

3. Lot Coverage

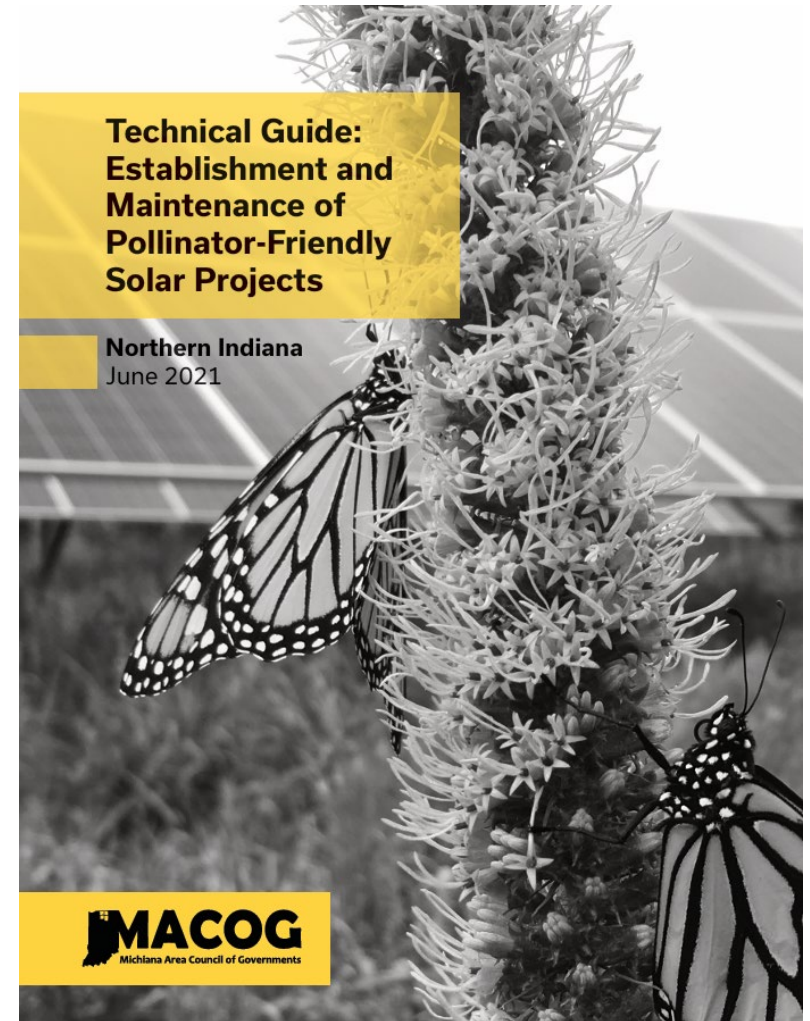
3. “The area covered by Ground Mounted Solar Energy Systems, measured by a rectangle encompassing the various system components, where the ground beneath is permeable or pervious, shall not be included in calculations for lot coverage or impervious cover. The Applicant shall plant a pollinator species with a mix approved by a local licensed landscape architect or equivalent. The Michiana Area Council of Governments requirements for pollinator species for solar installations shall be referenced. The site shall be planted and maintained to be free of all invasive species, as listed by the Indiana Invasive Species Council.”



- Michiana Area Council of Governments
  - Northern Indiana Technical Guide: Establishment and Maintenance of Pollinator-Friendly Solar Projects (2021)
    - Benefits of Low Growing Pollinator-Friendly Ground Cover
      - Reduction in wind and surface water erosion
      - Reduction of fertilizers, herbicides, and pesticides
      - Creation of food and habitat for butterflies, bees and other insects
        - Increases ecological and agricultural services for crop pollination and natural pest control
      - Creation of food, cover, and nesting habitat for some mammals, birds, reptiles and amphibians
      - Increase in organic matter and water-hold capacity
      - Improved aesthetics of the solar facility

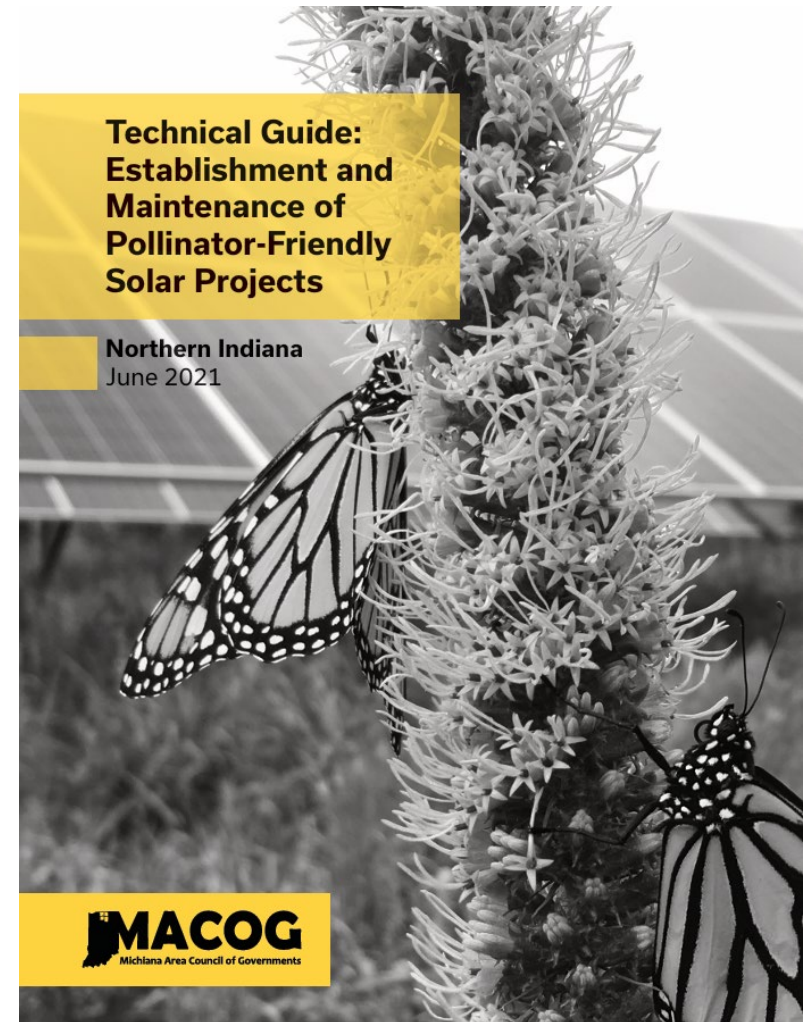


- Michiana Area Council of Governments
  - Northern Indiana Technical Guide: Establishment and Maintenance of Pollinator-Friendly Solar Projects (2021)
    - Importance of Appropriate Seed Mix Development
      - Seed Mix Cost
      - Seed Source
      - Seed Specification and Diversity
      - Visual Screening





- Michiana Area Council of Governments
  - Northern Indiana Technical Guide: Establishment and Maintenance of Pollinator-Friendly Solar Projects (2021)
    - Establishment and Maintenance
      - Establishment Period
        - 1-3 years (1 for rooting and 2/3 for maturing of plants above ground)
      - Maintenance Period
        - 3-5 years
          - Proper timing on mowing with consideration of wildlife disturbance
          - Understanding of rotational mowing
          - Undisturbed area for pollinator life cycles



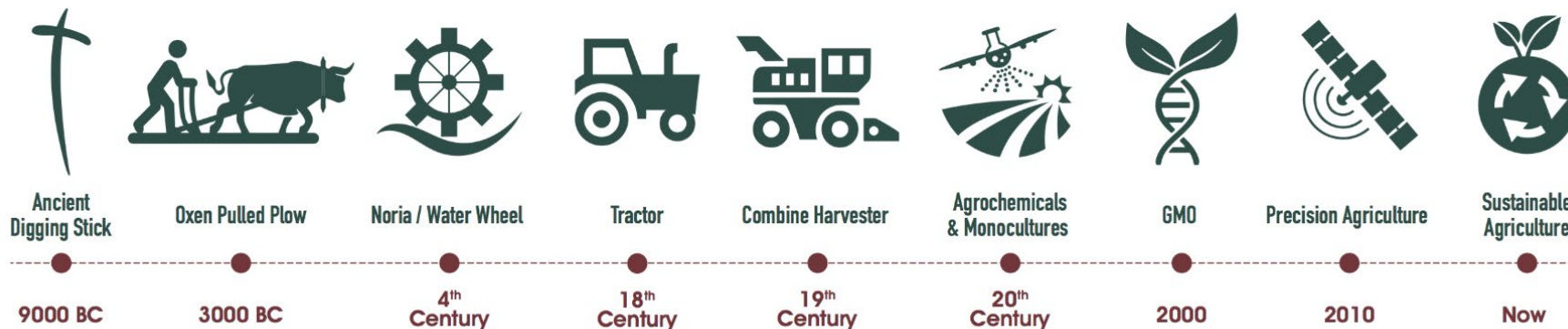
- Michiana Area Council of Governments
  - Indiana Solar Site Pollinator Habitat Planning Scorecard (2020)
    - Percent of native species in array area
    - Buffering
      - Native plantings
      - High depth of buffer
    - Percent of local sourced seeds (<150mi)
    - Number of species in perimeter and buffer areas
    - Number of species under array
    - Additions for diversity in perimeter and buffer areas
      - Grasses, forbs and milkweeds
    - Additions for diversity under array and between rows
      - Grasses, forbs and milkweeds
    - Percentage of native species in areas
    - Percentage of entire sites vegetative cover
    - Planned seasons with at least three blooming species present
      - Blooms from April/May to September/October
    - Site preparation prior to implementation
      - Soil prep
      - Temp site seed mix with native plants
      - None (negative points)
    - Site planning and management
      - Detailed plan
      - Ongoing research project
    - Insecticide risk
      - Planned use of broadcast insecticide or similar treatment
        - Significant negative
      - Coordination with local applicators to prevent drift
    - Qualifications
      - < 100 does not meet standards
      - > 100 meets preliminary standards
      - >125 provides exceptional habitat

- Michiana Area Council of Governments
  - Land Use Considerations for Large-Scale Solar
    - Maintenance Considerations
      - Flows and Bypasses due to partial shading
    - Co-Located Solar and Agriculture
      - “Solar development is sometimes viewed as competing with agriculture and conservation, creating potential conflicts over land use. However, opportunities are emerging to develop solar facilities that co-locate solar energy and agriculture, including integration of pollinators (e.g., beekeeping), livestock grazing, or crops. While still a relatively new area, “agrivoltaics” can potentially mitigate land competition by providing business opportunities to small local producers. Such sites may also support conservation goals, such as protection of habitat, biodiversity, water quality, and soil erosion. Community zoning ordinances can help to encourage developers to pursue solar projects that incorporate agriculture.”

- **History of Agriculture in Indiana**

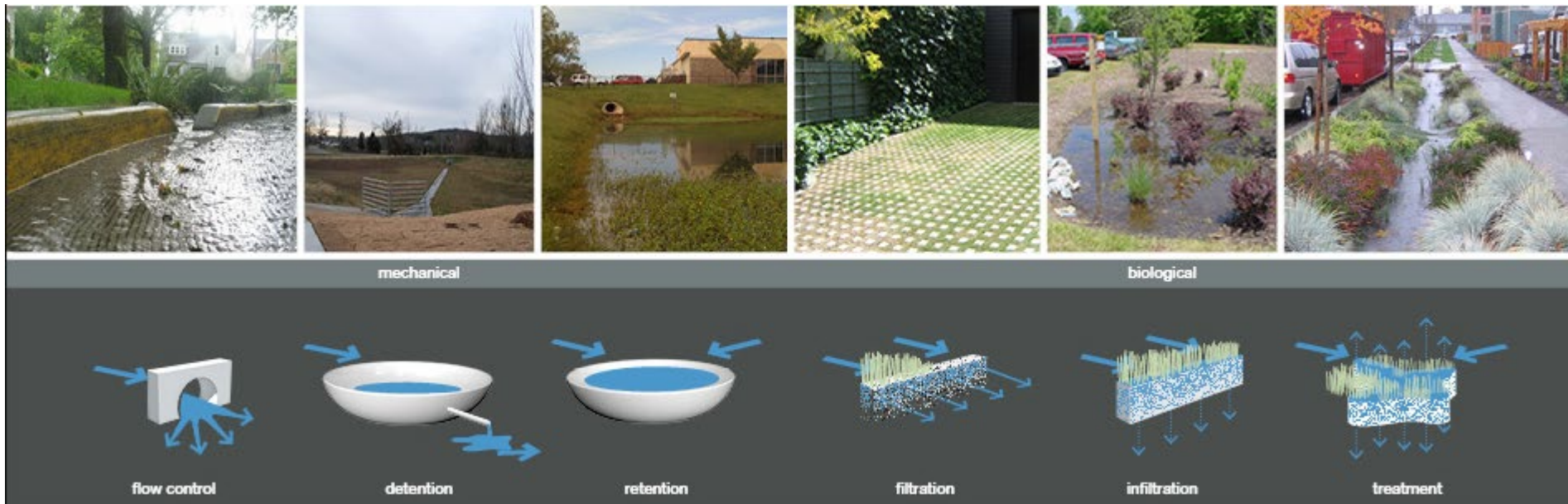
- The Transition
- Late 1700's
- Mid 1800's
- Late 1800's
- 1900's
- Today
- Tomorrow

## The Evolution of Agriculture





- **The Hoosier Farmstead**
  - The past, present and future
- **Dual Use**
  - Land the limited resource
- **Conventional vs. Low Impact Development**
  - Concerns
  - Location Location Location
- **THE Details**



- **Dual Use**
  - Use Regulation Options
  - Design Criteria
  - Caution

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- Tell us a little bit about your operation.
- When did agrivoltaics become part of the discussion and what changes or additions had to be made to the development?
- Are there some standards in ordinances that can make it more difficult to incorporate agrivoltaics?
- What advice do you have for County leaders who might be looking to encourage agrivoltaics with large-scale solar developments?

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- There is value in the simplicity of an ordinance provided that there is an understanding and respect for complexity of micro-ecosystems.
- The convening of local elected officials, farmers/large land owners, utility officials and residents during the ordinance formation process will assist in laying to proper groundwork for formulating a proper community ordinance.
- The American Planning Association published the "Solar@Scale: A Local Government Guidebook for Improving Large-Scale Solar Development Outcomes" which included some very valuable takeaways that not only apply to Solar in general, but can logically apply to the pursuit of Agrivoltaics.
  - Improvement of Applicant Submissions
    - Educational Materials and Preapplication Meetings
  - Conducting Public Hearings
    - Properly established procedures for the public hearing/meeting process
    - The importance of proper findings of fact
- Agrivoltaics is a complex land use collection, but is similar to how urban mixed use developments. The complexity is the size of the project can vary greatly.
- Just like other complex land uses there is a balance to strike between how specific a regulation is written and how to allow for development to implement best practices on unique properties. A well intentioned policy can have significant unintended consequences. A good practice to test your ordinance before adoption is to a couple of projects and identify whether or not they are meeting the intent that is desired.

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Purdue Extension 2021 Inventory

[renewable-energy-report11.pdf](#)

Blackford County Ordinance

[Blackford-County-Zoning-Ordinance-Rev-November-2023-PDF](#)

Clinton County Ordinance

[2015revisedUDO8.15.2024.pdf](#)

Marshall County Ordinance

[Marshall County Zoning Ordinance 5.15.2024.pdf](#)

MACOG Pollinator Solar Guide

[MACOG-Pollinator-Solar-Guide-Version-2.pdf](#)

Indiana Pollinator Scorecard

[Pollinator Scorecard 2020 1page.indd](#)

Land Use Considerations for Large-Scale Solar

[Solar-Land-Use 2020.pdf](#)

## **Agrivoltaics**

[Best Practices for Agrivoltaics Land-use Planning and Regulations | Sierra Club](#)

[It's Not Necessarily Solar vs. Agriculture](#)

[Visual Guide to Agrivoltaics and Wildlife-Friendly Solar](#)

[aft final policy recommendations to increase agrivoltaic development definition and incentives final-2.27.25.pdf](#)

[Agrivoltaics: Solar and Agriculture Co-Location | Department of Energy](#)

[Emerging Agrivoltaic Regulatory Systems A Review of Solar Grazing](#)

[Solar-Model-Ordinances-Joined.pdf](#)

[agrisolar dual-use-solar.pdf](#)

[Solar@Scale: A Local Government Guidebook for Improving Large-Scale Solar Development Outcomes](#)

[InSPIRE/Primer | Open Energy Information](#)

[Best Practices for Adopting Dual-Use Solar Ordinances WEB.pdf](#)

## **Agritourism**

[Agritourism](#)

[Agritourism-series-Zoning.pdf](#)

[AgritourismZoningHealth.pdf](#)

[Planning for Agritourism.pdf](#)

[Agritourism – National Agricultural Law Center](#)

[Agritourism enterprises on your farm or ranch: Understanding regulations](#)

## **Indiana Agriculture**

[ILRC Model Ordinances - Updated 2014.pdf](#)

[zoning-guide-with-citations---for-publication-\(revised---march-2024\).pdf](#)

[Indiana Code § 36-7-4-616. Zoning Ordinance; Agricultural Nonconforming Use :: 2024 Indiana](#)

[Code :: U.S. Codes and Statutes :: U.S. Law :: Justia](#)

[PowerPoint Presentation](#)

[Purdue Agriculturist 1 March 1932 — Purdue University Newspapers Collection](#)

[100 Years of Indiana Agriculture: 1895 - 1995](#)