

INDIANA RENEWABLE ENERGY

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

Local Planning and Permitting

April 24, 2025

This material is based upon work supported by the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (EERE) through the Renewable Energy Siting through Technical Engagement and Planning (R-STEP) program. R-STEP is administered with support from the Partnership Intermediary Agreement (PIA) that the U.S. Department of Energy (DOE) has established with EnergyWerx.



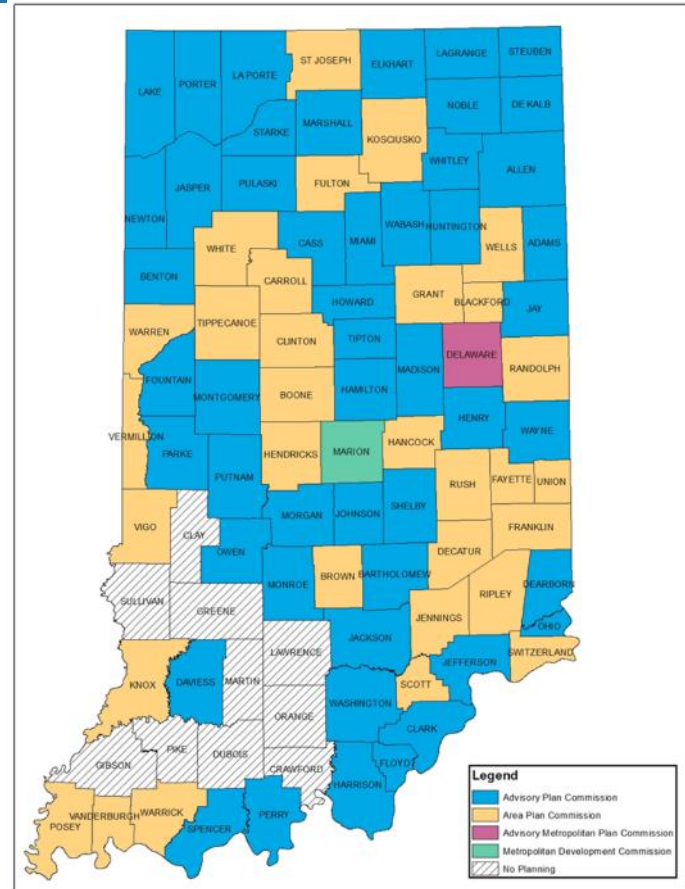


Extension - Community
Development



The Role of Planning in Communities

In community planning we are always balancing private property rights with regulated uses for the health, safety and general welfare of the community.



Plan Commission

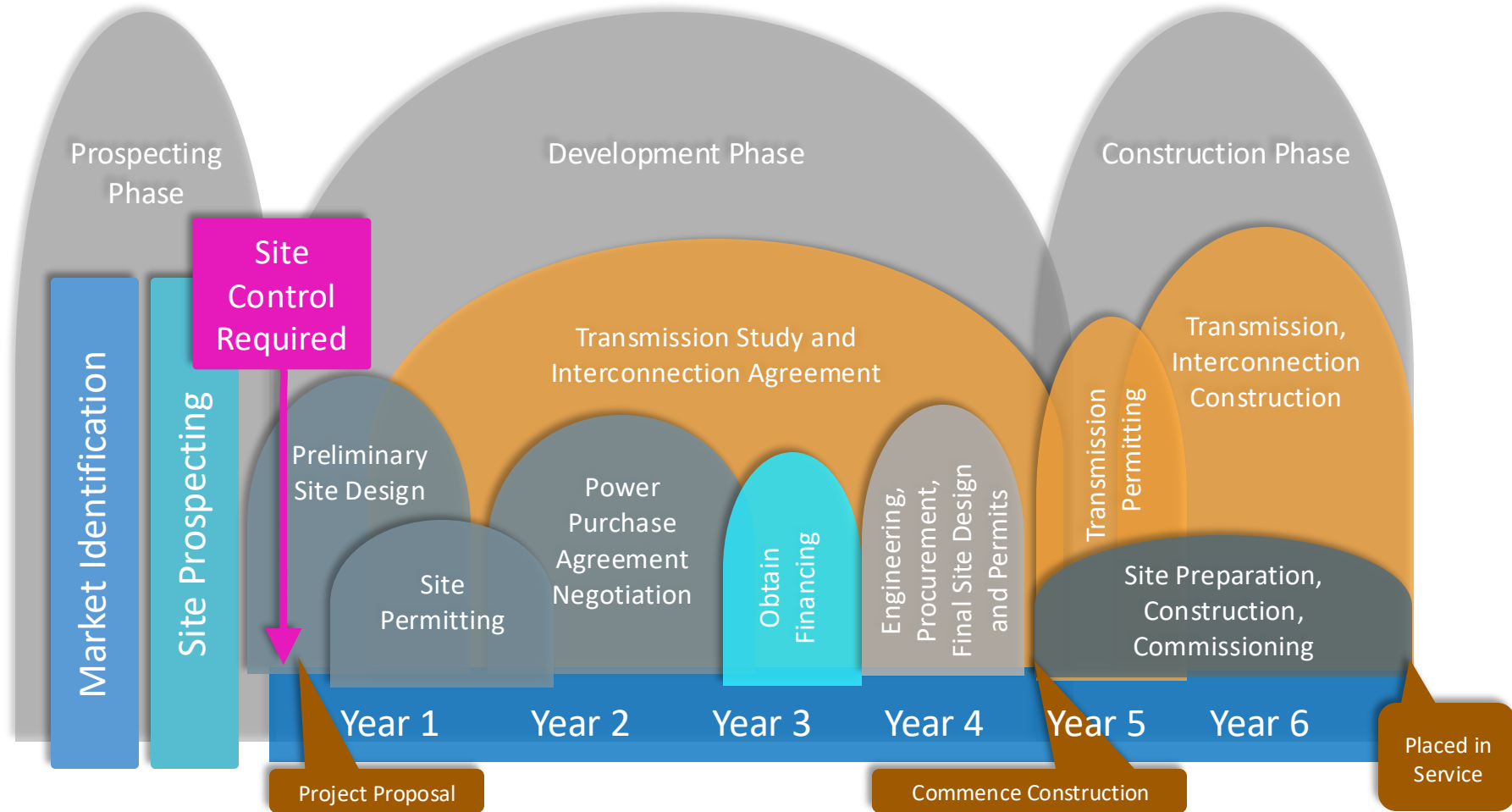
- Prepare comprehensive plan
- Make recommendations on zoning and subdivision control ordinances
- Approve development plans and subdivisions of land
- Manage enforcement

Board of Zoning Appeals (BZA)

- Quasi-judicial board
- Rule on variance from development standards
- Rule on special exceptions
- Hear appeals of staff administrative positions

The **legislative bodies** adopt the comprehensive plans, ordinances and any amendments.

Renewable Energy Planning



Hypothetical Utility-Scale PV Development Timeline (250 MW)

Source: NREL, modified from SEIA <https://ei-spark.lbl.gov/generation/utility-scale-pv/project/>

Out of 82 counties that have adopted a zoning ordinance

- 51 had commercial wind land use regulations*
- 46 had with commercial solar land use regulations

*8 counties did not permit wind in any district



A Snapshot of Renewable Energy Land Use Regulations in

Benton County



Farmland Coverage
96.50% land in farms

Population Density
21.5 per sq. mi.

Housing Unit Density
9.3 per sq. mi.

Population (2020)
8,719 **

County Type
Rural

PCPI (2019)
\$42,135

COMMERCIAL SOLAR ENERGY SYSTEM STANDARDS

Use standards for CWECs beyond zoning district's standards unless otherwise specified.

| ZONING DISTRICT | PERMITTED USE / SPECIAL EXCEPTION |
|----------------------------------|-----------------------------------|
| All districts except residential | Special Exception |

REZONE REQ: NO ADDITIONAL PROCESSES: NONE

SETBACKS & BUFFERS

| | |
|------------------------|----------------------------|
| Setback | 75' from ROW |
| Municipal Buffer | None |
| Use Buffer | 200' from primary dwelling |
| Reciprocal Buffer (CM) | None |

OTHER DEVELOPMENTAL STANDARDS

| | |
|---------------------------------|-----------------------------|
| Minimum Lot Size | 5 acres |
| Maximum Height | 35' |
| Noise Limit | 41-75 dB depending on hertz |
| Ground Cover Standards | None |
| Color Standards | None |
| Signage/Warnings Standards | Yes |
| Fencing Standards | Yes |
| Landscaping/Screening Standards | Yes |
| Glare Standards | Yes |
| Other Standards | None |

DEFINITION

Convert and deliver electricity to a utilities transmission lines

PLANS & STUDIES REQUIRED

* Upon request

- ☒ Decommission Plan
- ☒ Economic Development Agreement
- ☒ Maintenance Plan
- ☒ Transportation/Road Use Plan
- ☐ Vegetation/Landscape Plan
- ☐ Environmental Assessment
- ☐ Emergency/Fire Safety Plan
- ☒ Drainage/Erosion Control Plan
- ☐ Liability Insurance
- ☐ Property Value Guarantee
- ☐ Certificate of Design Compliance
- ☒ Other plans or studies
- Sound study

COMMERCIAL WIND ENERGY CONVERSION SYSTEM STANDARDS

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OTHER DEVELOPMENTAL STANDARDS

| | |
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| Shadow Flicker | None |
| Braking System Standards | Yes |
| Color Standards | Yes |
| Warnings/Hazard Protection Standards | None |
| Fence/Climb Prevention Standards | Yes |
| Lighting Standards | None |
| Interference | Yes |
| Other Standards | None |

DEFINITION

Wind energy conversion system that delivers electricity to a utility's transmission lines.

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COUNTY CONTACT INFORMATION

Name: Matt Hull
 Role: Building Commissioner
 Phone: (765) 884-1728
 Email: mhull@bentoncounty.in.gov
 Web: <https://www.bentoncounty.in.gov/department/Advisory-Plan-Commission>



Land Uses can be permitted in a zoning district

- By right
 - By right with additional use standards
 - By special exception
 - Not permitted
-
- If a use is not permitted in a particular district, it might require an amendment to the zoning map or (rezoning to be allowed.)

- A property that may be allowed under specified conditions.
- Intended for site-specific review
- Board of Zoning Appeals rules
 - Still needs to meet all district and use standards unless asking for variance
 - BZA may impose reasonable conditions
 - BZA may also require written commitments

- Indiana Code does not specify any set criteria
- Sometimes special criteria is confused with the variance criteria set by the state
- Communities often set general criteria for considering special exceptions
- Can also set use specific criteria
- Criteria should be used to create findings of fact for decision

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| Description | Number of Ordinances | Range (ft) | Median (ft) | Mean (ft) |
|------------------------------------------------------------------|----------------------|------------|-------------|-----------|
| Residences | 20 | 100-660 | 200 | 255.5 |
| <i>*Other common use buffers include churches, schools (n=6)</i> | | | | |
| Setback (Property Line) | 21 | 25-330 | 50 | 93.5 |
| Setback (ROW) | 9 | 30-150 | 100 | 93.3 |

| Description | Number of Ordinances | Range (ft)* | Median (ft)* | Mean (ft)* |
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| Residences | 25 | 640-3,960 | 1,000 | 1,384 |
| Municipality | 20 | 1,500-10,560 | 2,070 | 3,390 |
| Public Conservation Land | 11 | 600-5,280 | 750 | 1,397 |
| Schools | 11 | 660-10,560 | 1,500 | 3,096 |

**Many wind ordinance use a factor multiplied by total tower height for buffers and setbacks. This table reflects buffers for a total tower height of 600'. The tallest towers in Indiana currently operation are 591' according to USGS.*

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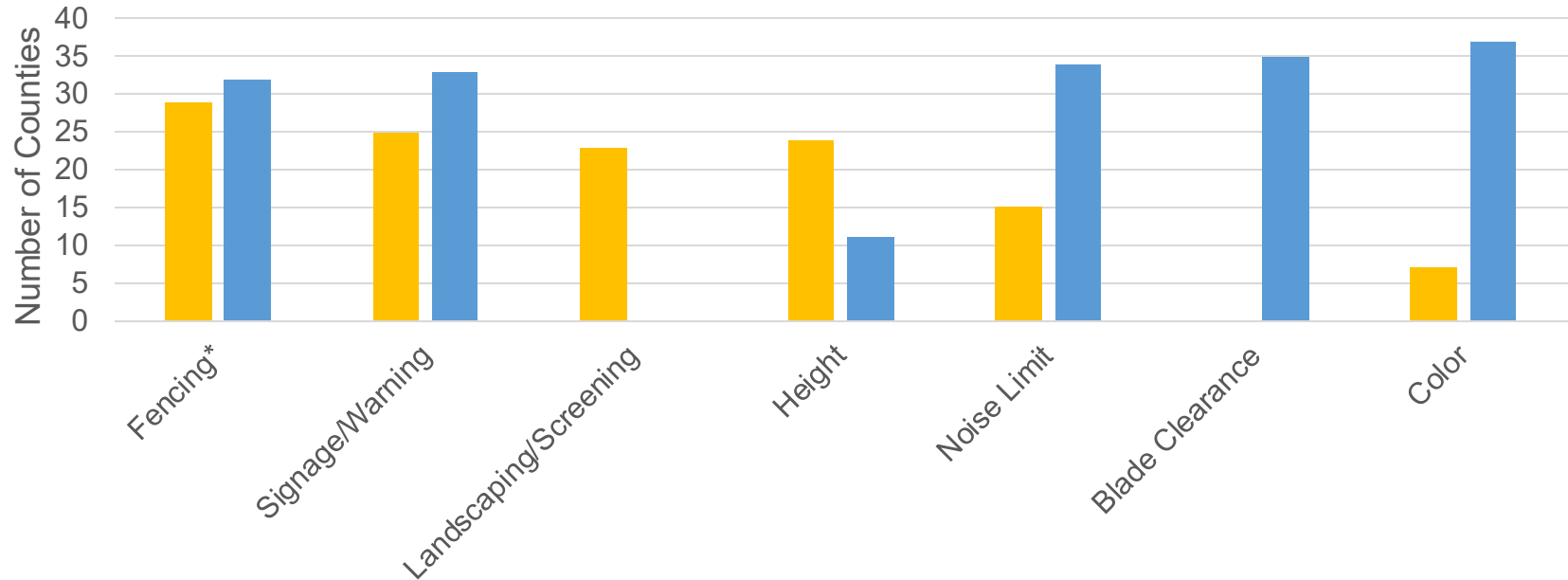
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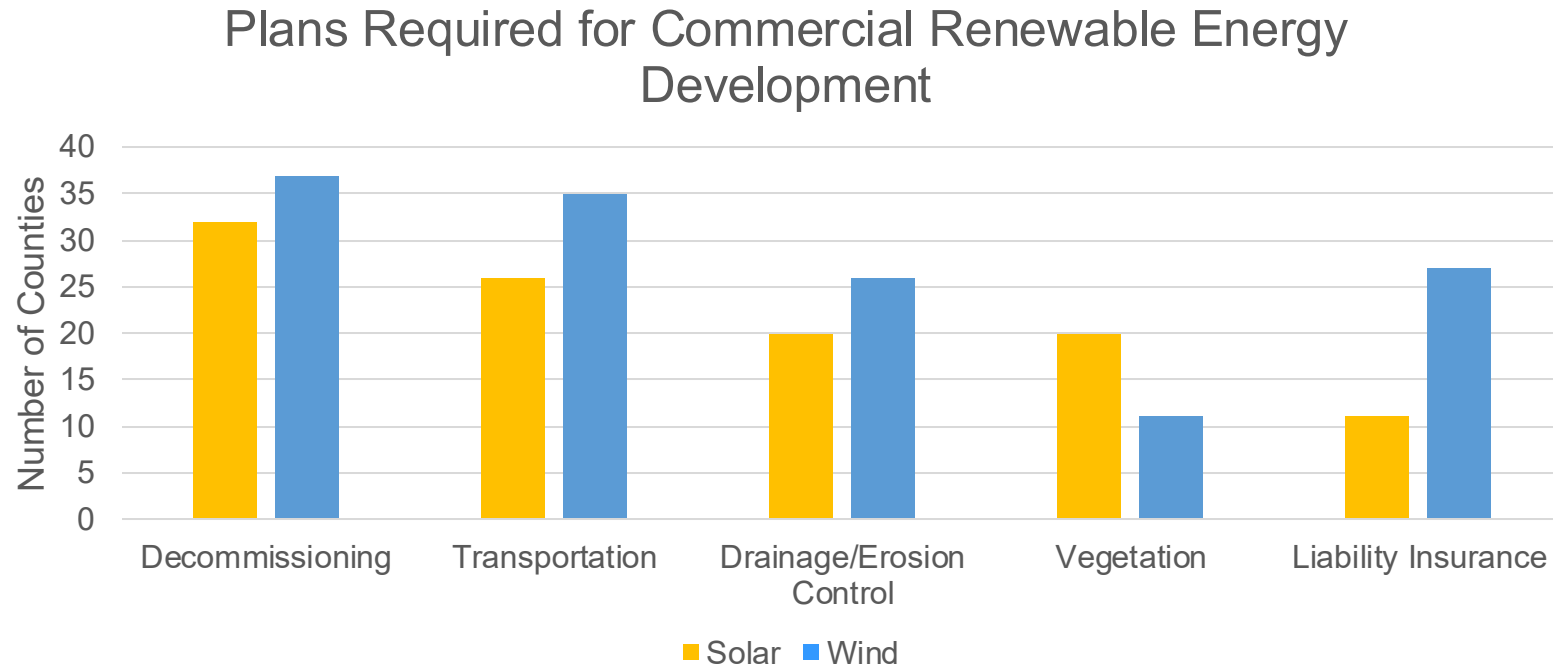
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Other Renewable Energy Land Use Standards







- Ordinance inventory update slated for 2025
 - Adding battery energy storage systems
- Survey to Plan directors will be conducted this summer
- What are we expecting
 - More counties with wind/solar ordinances
 - Several counties with amendments since 2021
 - More land use moratoria

- SB 411 (2021) Established standards for a community to be considered wind energy or solar energy ready
- Communities can set less restrictive standards
- Currently no financial incentives are tied to the designation
- HB 1278 (2024) provided some flexibility in standards for this program.



Wind

- setbacks and maximum height
- shadow flicker
- signal interference
- sound level limitations
- wind turbine light mitigation technology;
- drainage repair
- decommissioning

Solar

- setbacks, height, and buffers
- ground cover
- fencing
- underground cables and aboveground infrastructure
- glare minimization
- signal interference
- sound level limitations
- drainage repair
- decommissioning, abandonment, and "force majeure event"

- HB 1628 (2025) Did not pass committee
 - An amendment would have allowed utility-scale projects to move jurisdiction to IURC under certain conditions (i.e. less productive soil, acreage cap for county, etc.)
- Michigan
 - New law grants permitting authority to the state unless local government adopts “compatible renewable energy ordinances” Incentive to still pursue local permitting.
- Ohio
 - State siting, but gives local representation on siting board and allows county to designate “restricted areas.”
- Illinois
 - Cannot have more restrictive standards than the state
- Wisconsin
 - Anything over 100 MW is under state permitting jurisdiction

- **Comprehensive Plan Goals and Objectives**
 - What goals will these developments support
 - What goals will they conflict with
- **Conflicting Land Uses**
 - What are the primary concerns or issues
 - What tools/standards would help to alleviate these conflicts

- **Public Infrastructure and Investment**
 - How do these developments add to public infrastructure and investment
 - What measures need to be put in place to protect or remediate public infrastructure
- **Externalities**
 - What are the positive or negative externalities of these developments

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