

INDIANA RENEWABLE ENERGY

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

Local Planning and Permitting: Battery Storage Edition

November 13, 2025

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Extension - Community
Development



BALL STATE
UNIVERSITY
Center for Business and
Economic Research

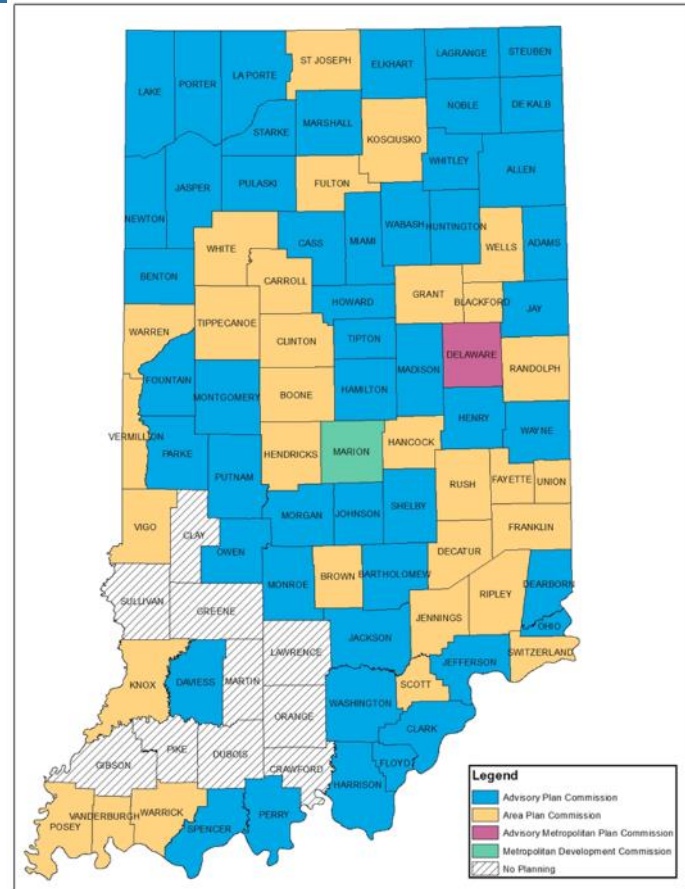


INDIANA UNIVERSITY
PUBLIC POLICY INSTITUTE



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

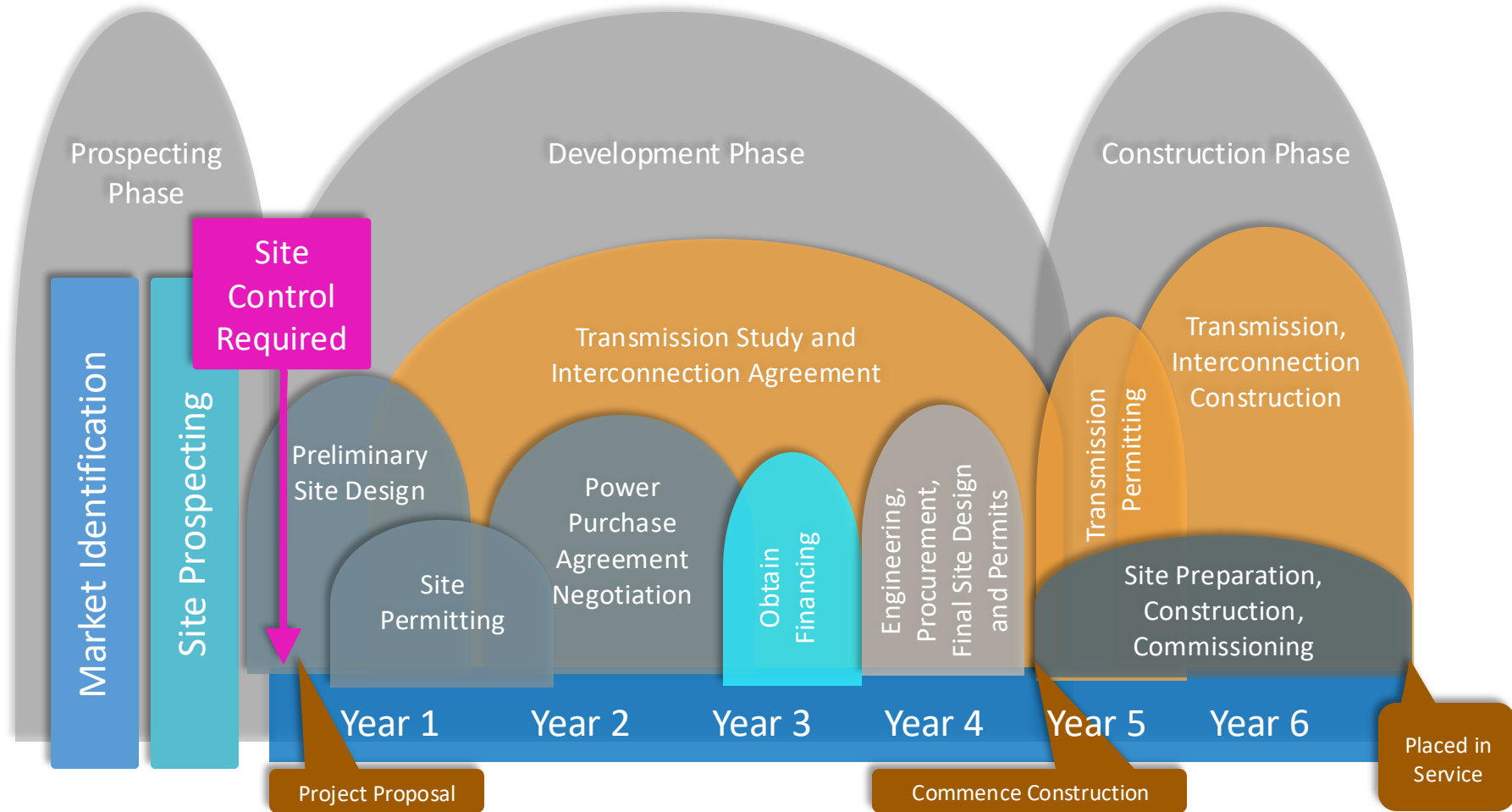
- Prepare comprehensive plan
- Make recommendations on zoning and subdivision control ordinances
- Approve development plans and subdivisions of land
- Manage enforcement

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/>

- 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	

DEFINITION

Convert and deliver electricity to a utilities transmission lines

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

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

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	

DEFINITION

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

SETBACKS & BUFFERS

Setback	350' or 2.2 times the tower height
Municipal Buffer	1500'
Use Buffer	1,000' from existing residence, occupied structure, place of public gathering and platted subdivisions
Reciprocal Buffer	None

OTHER DEVELOPMENTAL STANDARDS

Maximum Height	None
Minimum Blade Clearance	15'
Maximum Noise Level	41-75 dB depending on hertz
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

PLANS & STUDIES REQUIRED

* Upon request

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

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>



- Battery Energy Storage Systems can be tied in with generation or a standalone use
 - Several counties mention battery or have regulations for battery within solar use regulations
 - Less counties have primary use BESS regulations
- Separating it from solar gives communities the opportunity to regulate a standalone proposal
- Requires solar and battery regulations to not conflict with each other

Land Uses can be permitted in a zoning district

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

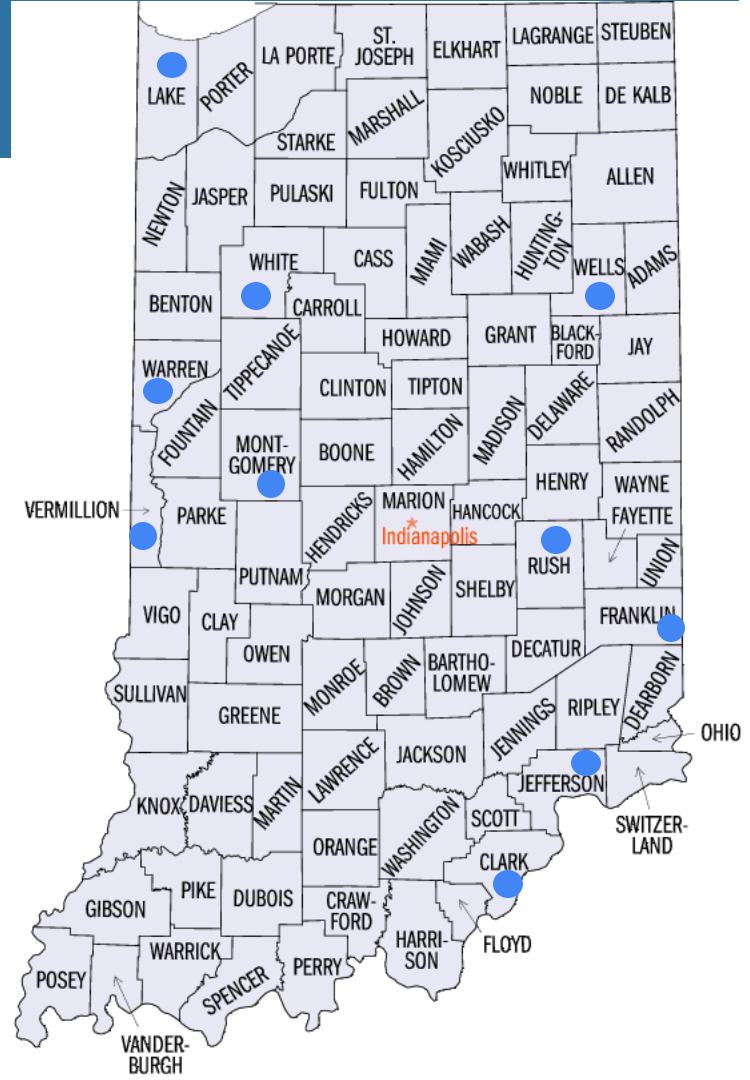
- A property that may be allowed under specified conditions.
- Intended for site-specific review
- Board of Zoning Appeals rules
 - Still needs to meet all district and use standards unless asking for variance
 - BZA may impose reasonable conditions
 - BZA may also require written commitments

- Require more hearings, but allow the local elected officials to have the first vote
 - Provides public participation and clarity for petitioners earlier in the development process
- Treats the use uniquely while still maintaining the underlying district regulations
- Development plan approval allows for additional oversight and written commitments/conditions
- Variances have to go before the BZA and can't be simultaneously like with a special exception

- 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

- Require more hearings, but allow the local elected officials to have the first vote
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- BESS included in ongoing ordinance inventory update
- Collected BESS ordinances from 11 counties so far
- 10 counties left to collect



- Permitted by special exception in an M1 or M2
- Includes both accessory and primary use
- Setback of 1,320 ft from residential structure
- Must adhere to NFPA 2, NFPA 70 and NFPA 855



- Special Exception in I1 or I2
- Must comply with
 - National Electric Code
 - National Fire Code
 - State code requirements
 - NFPA standards



- Rezone Required
 - Requires Site plan
 - Construction schedule and construction and maintenance routes
 - Spec sheets
 - Visual screening report
 - Operation and maintenance plan
 - Proof of liability insurance and interconnection agreement
 - Emergency services plan
- All on-site utility lines must be underground to extent feasible
- Perimeter security fence at least 6ft high
- Must comply with NFPA 855 including emergency fire response plan and training for local fire department



- Site plan
- EDA
- Decommissioning plan
- Road Use Agreement
- Drainage Plan
- Minimum 5 acres
- 30 ft setback from property line
- ½ mile setback from municipality
- Screening if abutting a residential district property line
- Noise limit of 50 DBA at nearest dwelling
- Security fencing 6-10 ft tall
- Cables between BESS and generation and substation buried at least 36"
- Have regulations for retrofitting an existing wind or solar development with battery



- **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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