

Counsel Members, Land owners, and Those concerned,

2/20/24

Two years ago, my family bought 3 acres along Hwy 31 and built a new home which we have invested over \$500,000.00 in.

It's a beautiful home facing West, in the morning we can sit and watch the sun rise from the East. The view is amazing with rolling hills of farmland as far as one can see. Off in the distance are a couple of scattered homes one or two of which look to be old farmhouses. It's picture perfect!

In the evening it is much the same as we view out our front window farmland enhanced by beautiful sunsets.

Recently I learned of the proposed plans by many of the landowners of this beautiful farmland to lease for the installation of solar panel farms. This proposal would basically allow the installation of these solar panels to surround our new home. If this proposal is passed, this will change our view totally.

We personally are devastated at the thought of watching the sunrise over a solar farm from our back patio, and possibly one in the distant evening sunset!

If this proposal passes, we will most likely decide to sell our home and move rather than be forced to live next to an Industrial solar farm. At which time we would probably take a loss due to the decrease in value of our property caused by the decision.

In closing, I would like to mention that there are several others just North of my property that will be affected just like my family. Also, we are unsure of the long-term health affects, if any. Or the effects on the land itself.

May it be noted that our family is opposed to these solar farms being installed around or near our property!

Regards,

Larry & Brittany Siegelin  
1555 S. US 31  
Columbus, In 47201

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3245 Lantern Lane  
Columbus, IN 47203

February 21, 2024

Jeff Bergman, Director  
Bartholomew County Planning Department  
Bartholomew County Board of Zoning Appeals  
Columbus Board of Zoning Appeals  
Email: [planning@columbus.in.gov](mailto:planning@columbus.in.gov)

Dear Mr. Bergman:

My name is Millie Corbin-Beverly. I am a Columbus resident, local attorney and lifelong advocate of the agriculture industry. My agricultural roots include serving as an Indiana State FFA Officer and currently serving as an Agriculture/FFA student coach. Eliminating productive farmland for commercial solar development causes me great concern.

I am writing to you and requesting that you deny the Carina Solar Conditional Use Application. Criteria #4 is not met. The application is in direct conflict with the recommendation of The Comprehensive Plan for Bartholomew County and Columbus for the following reasons:

**1. In Section IV Commerce and Industry in the Comprehensive plan, Goal 18 states in pertinent part, “Encourage the location and expansion of businesses and industries that are compatible with their surroundings.”**

Commercial solar facilities are an industrial operation located in a mostly rural setting. They are NOT compatible with the surrounding farmland nor the rural view scape given the 10-12 miles of 8’ tall steel security fencing required along with the Hundreds of Thousands of PV panels. Carina’s application FAILS to meet Goal 18 of the Comprehensive Plan.

**2. In Section IV, Policy 18 B states in pertinent part, “Encourage Industrial and Commercial Land Uses to be consolidated in similar use areas.”**

When comparing fields for PV solar panels and rural farmland fields used for food and fiber, there is nothing similar. Once again, the Comprehensive Plan is violated by the wording of the Carina Conditional Use Application in Criteria IV.

**3. In Section IV, Policy 18 H states in pertinent part, “Encourage Commercial and Industrial Operations to locate on land other than Timberland, Productive Farmland or Land Subject to Flooding.”**

Productive farmland is cultivated for growing crops for human and livestock food and requires putting seed or plants in the soil to grow and be harvested. Production agriculture is the science, art or practice of cultivating the soil for producing crops and raising livestock for food and fiber. Commercial solar facilities FAIL Policy 18 H of the Comprehensive plan.

As I am concerned about the loss of current and future opportunities for Bartholomew County’s agriculture youth, I respectfully request that you DENY the Carina Conditional Use Application.

Sincerely,

*Millie Corbin-Beverly*

Millie Corbin-Beverly

February 20, 2024

Columbus and Bartholomew County Board of Zoning Appeals

123 Washington St.

Columbus, IN 47201

Dear Board of Zoning Appeals,

Our family recently moved to Columbus from another city that was being overrun by housing developers who had little concern for the existing residents and their wishes. We knew in the next few years we would be outgrowing our home, so we were faced with the dilemma to either pick up and move quickly before a new housing development encroached on our property, or whether to stay and hope that the resale value of our home was not impacted negatively by the changing situation. We watched our small community change from a peaceful rural setting to a bustling suburban area, as housing developments uncontrollably grew in just a few short years.

As we looked for new places to settle and raise our family, Columbus, Indiana was a standout. We were attracted to the strong, small-town community that has over many years proven to adapt with the times and continues to push the edge with economic, social, architectural, agricultural, and many other developments. We quickly realized that towns like Columbus are few and far between.

Prior to moving we thoroughly investigated the city and the county's comprehensive plans to see how growth and development were managed to hopefully avoid a situation like we were previously in. We were very pleased to see the level of thought and care that had been placed in the development of the comprehensive plan and goals, and how insightful the city and county planning departments have been.

We recently purchased a home this past summer just outside of Columbus, but after we closed and moved, we learned of the discouraging news that Bartholomew County was being targeted by commercial solar companies as the location for several large-scale projects. We were disheartened even once more when we learned the proximity of these arrays to our new home. We realized that we would face similar issues as before with a loss of property value and detrimental impacts to the culture of our new community.

Ignoring numerous studies that show the negative impact of solar installations on neighboring property values, the question may be simpler. Would you pay the same price for a house surrounded by beautiful Bartholomew County countryside as you would pay for a house surrounded by solar arrays? The answer is simply no.

If we had understood what drastic changes lay ahead to the new area we recently moved, we would have absolutely reconsidered our decision to move where we did. While we understand that each landowner has the right to do with their land what they please, the impact on neighboring properties and community must be considered.

We must also ask ourselves the question, if we allow one commercial solar development in our community, where does it stop? How many other farms will be taken over by commercial solar development? How many other landowners are waiting to see what happens with this decision before they sign up? Can we manage the growth reasonably and responsibly, or will it lead to continued uncontrolled growth? Will it add to the unique character of Columbus and Bartholomew County that will preserve its distinctiveness and attract new residents?

This project proposes very different land uses than what currently characterizes our vibrant agricultural community. It will absolutely impact prospective new residents, like we were, that may be looking to call Columbus and Bartholomew County their new home. Columbus and Bartholomew County have done a tremendous job planning, that without a doubt has led to the community's success and cultivated its rich character. While this is no easy task, we ask that this tradition is continued. We ask that the negative impact on adjacent property owners be considered as well as the need to preserve our wonderful agricultural community from loss of identity and uncontrolled growth.

Thank you for your time and consideration.

Sincerely,

The Eckert Family

11166 E County Road 200 N

Hope, IN 47246

February 20, 2024

Shawn & Amy McKinney  
3420 S 250 E  
Columbus, IN 47201

TO: Bartholomew County Citizens Concerned about Commercial Solar Fields  
Bartholomew County Board of Zoning Appeals  
Bartholomew County Commissioners

I am writing today to express my concern about the planned commercial solar project by Samsung/Carina. We purchased our home from Wiliam Steinker in 2019. Not long after buying our home Mr. Steinker informed us that he had enrolled his farmland in the solar project. Mr. Steinker assured us the portion of the farm that surrounds our home was not included and no solar panels would be located there. Only recently was I made aware that the Carina project map proposes to surround my home with solar panels.

This project will undoubtedly have a severe impact on my property value and marketability. Today the view from any direction from my home is open farm fields. If this project is allowed to proceed, the view from my home will be solar panels in all directions. I will have to drive through the middle of a solar panel installation to reach my property.

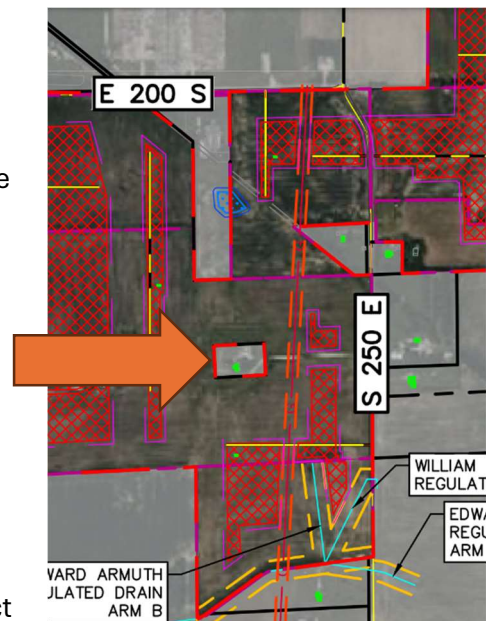
I am also greatly concerned about the long list of possible negative effects including noise, soil erosion, wildlife endangerment, environmental contamination, and the long-term destruction of valuable farmland. I fear my property as well as many others in the path of this project will become worthless.

I ask that the Board of Zoning Appeals and the County Commissioners consider the enormity of the impact on Bartholomew County residents from this project. This project should not be permitted. It is a commercial and industrial enterprise that has no place on land zoned for agricultural production. A huge portion of the county will no longer be considered a desirable place to live or farm. Property values (and property tax revenue) will decline, as people look to live elsewhere.

Sincerely,

*Shawn McKinney*

Shawn & Amy McKinney



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# RAMSEY FARMS AG ENTERPRISES



*To Whom it may concern in Bartholomew County,*

*As a neighboring county citizen, I thought the following information might be relevant for your upcoming BZA decision on large scale commercial solar.*

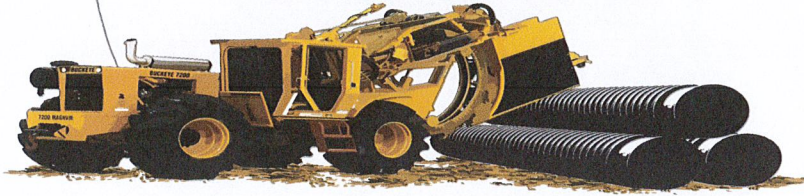
*A large scale commercial solar project was approved in Shelby County during the COVID pandemic. Since being approved, the project has still not been constructed, although recently in the beginning stages. I already have seen a couple major issues that were not fully apparent or disclosed in the lease contracts that were signed by some here in our county. I find these to be harmful to the those who signed leases as well as those living in and around the approved project.*

*1. The leased land has been collateralized already by the solar developer. It appears they are using this to help secure funding for constructing the project. One landowner, that I know well, is actually in a legal dispute trying to release there property from the lien or the lease. Additionally they are having issues getting full lease payment as the developer is choosing to "reinterpret" the contract.*

*2. The lack of caution being taken with existing tiles and subsequent drainage for the property leased and for surrounding non participating properties is a major red flag. The companies that are doing the construction are coming from all over the United States. They are not local or even Indiana based. In conversations with them it is obvious that they lack the necessary understanding of Indiana tile and drainage practices. The intended placement of roads, culverts and other site infrastructure is damaging existing tile or make finding tile issues nearly impossible to decipher between existing pre existing and new issues as the years progress. We have known tile/drainage concerns already in Shelby County on much smaller commercial projects. The 1700 acres that were approved for commercial solar is nearly 20-25 times larger in size than most projects we see in the commercial category. It is challenging enough to find and fix tile/drainage issues on these normal commercial projects. Most do not even need a year to complete. The fact that the approved large commercial solar project has a footprint 20-25 times greater but it will more than likely need greater than 1 year to complete. That duration of construction time is going to make finding and fixing issues nearly impossible. I recently raised the idea of an easement within the solar project project. This easement would be where existing tile is located so we have access to troubleshoot and fix issues that develop later. This seemed to me a good way to have a path for future repairs. They rejected that idea. My fear is that when, not if, drainage becomes a problem, that the argument large solar will use is that the problem was preexisting.*

*3. I am very concerned for those with septic systems, as most properties are already too small to allow for an additional new septic system to be installed, but with the solar installation being so close there would be no way for them to buy additional property and install a new system and maintain all setbacks. Those homeowners will be harmed and probably have no course of action outside of filing a lawsuit. If the drainage harms their property, how will they have proper sewage removal? How will they live under those conditions? If these choose to move, who will buy their home? Additionally now with new state code being all*

# **RAMSEY** **FARMS** AG ENTERPRISES



*homes sold through a realtor being required to pass septic inspection to meet state code what happens to these homes?*

*In conclusion, I realize large solar might ask what documented proof do I have that these concerns will happen. I do not have them yet in Shelby County as construction has hardly began. I do communicate with others in my profession around the country and some of them do have documentation and pictures to back up these concerns. I will be happy to supply them if needed.*

**All these thoughts come from the perspective of a contractor that does this for a living and everyday I deal with issues of all shapes and sizes. I will live the rest of my life dealing with the shelby county project as it is across the road from my facility.**

*I do think that my time and wisdom in this profession gives me greater insight and appreciation of what causes drainage problems. Knowing what it takes to repair them to a point of not harming the property rights of others is what is troubling.*

*I would highly encourage your BZA to not considered approving this type of massive commercial land project based on what I am seeing already here in neighboring Shelby County.*

*Respectfully submitted,*

**James Ramsey**  
**Ramsey Farms Ag Enterprises LLC.**  
**6995 E. 500 N.**  
**Shelbyville, IN 46176**  
**317-498-7288**  
**Ramseyexcavating@gmail.com**

Julia Schultz agreed that her public statement given at Zionsville BZA Meeting could be shared with Bartholomew County and City BZA members as an example of someone who lived in a rural area in sunny California and a prime location for solar farms.

Hello BZA Bartholomew County and City members,

Julia Schultz  
4560 Woods Edge Dr  
Zionsville IN

I was one of the persons who spoke at Zionsville public BZA hearing concerning Brickyard Solar LLC project near Zionsville. Project was denied. We are now living in Zionsville Indiana.

I am one of those transplants from California. My husband and I escaped from California to get away from the same type of industrial solar farms, California is a poster child for solar.

California has the largest amount of solar production (29 percent).

The maximum efficiency rate is around 26 percent.

But I know from experience because we've lived it!

I've lived there my entire life. You guys have no idea what a gem this Town is for people like us that come here. I love Zionsville. Its beautiful. The farmland is gorgeous. I don't want this destroyed!

We left a town in California that started out rural. It was avocados and orange groves. It is no longer. So please, do not destroy this town, Zionsville.

Consider California has almost 365 day a year of sun. At least, half of the year is over 80 degrees.

We fell for the solar thing and even placed it on our home as well as the solar farms around us.

They do a Great job of selling it. I am telling you. We fell for it!

Even with the solar on our home it did not cover our energy.

Our electric bills went up because of the solar. Electric company was no longer making the revenues they were making so guess what? Your rate must go up!

Okay so these are the things that are coming up:

Battery backup system that is toxic and those are placed in landfills.

Inverters fail and energy is not converted and ends up in landfills.

Panels degrade over time and change to less efficient and at least some of the parts end up in landfills.

Unless the panels are kept clean, they are not efficient.

Does this mean chemicals running off onto soil and water?

Think about it....

California with all those solar panels and all that sun.

How come there is rolling blackouts all the time?

How come they're begging people with electric cars not to charge their cars?

Smart meters tracking and your peak usage.

California even has wind energy and they are still not meeting it.

California is the most polluted state. So, all the solar and wind is not cleaning the air for California.

If Zionville allows to destroy the land, to become a solar wasteland and reduce air quality, hey basic science, the plants in farmlands and forests help reduce carbon dioxide.

The benefactor from us living solar on Zionville land will not mean lower cost.

Energy will be sold off.

Um, let's see. It's also a political thing. Everybody wants to do the best. Feel good choices. I care so much for the planet because I am using solar. Look how good I am. But solar in these fields alone is not going to save the planet.

Um, sorry, I am not anti-solar. There are uses for it. But this is not it. I have seen what happens.

You want additional uses, place it on parking structures, roofing cover, tops of buildings. This is not it. It does not make sense to destroy good land.

One lady at the meeting today stated, "Well all these other places are doing it."

I'm just going to leave with this for those of you who remember it.

There was a place called Jonestown and everybody drank the Kool-aid. That turned out to not be a good idea.

Feb 20<sup>th</sup> 2024

Dear County BZA members and Planning Department,

I appreciate the role you play in our community. You are the final "line of defense" for folks like me who are concerned about the large scale commercial solar project being applied for by Carina.

Since you will have lots of data sent your way, I am going to make this an easy read.

I am finding 33 Policies listed in the Bartholomew County Comprehensive Plan that are highlighted in the attached document. It is my understanding that if only 1 of the 33 are found to be an issue then a denial must be made according to Criteria 4 of Conditional Use.

Now I realize that one may not interpret all 33 to be a problem as I see it. But I also believe that one can not say all 33 are met. If so, then I am going to need help in understanding why this document was ever written.

I hope you find most of the 33 to be in agreement but a minimum, please agree that you can find just the 1 that makes Criteria 4 fail.

It is not my intention at this time for me to read this but I ask that you read it during the meeting since it is so short and to the point.

Respectfully submitted

A handwritten signature in black ink that reads "Matt Carothers". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Matt Carothers

4800 East 300 South

Columbus IN 47201



# GOALS AND POLICIES AN ELEMENT OF THE BARTHOLOMEW COUNTY COMPREHENSIVE PLAN

## SECTION I: DEVELOPMENT PATTERNS

### **Goal 1: Preserve productive farmland and maintain the productive capacity for a strong county agricultural industry.**

- Policy 1-A: Develop a system for classifying levels of subdivisions and determining the amount and type of regulation appropriate to each level.
- Policy 1-B: When land is proposed for subdivision or rezoning, require at the applicant's expense, a technical impact study by a qualified person or firm. Require the Plan Commission and/or County Commissioners to consider the effect on adjoining and nearby agricultural land in making decisions. Impacts to be studied include but are not limited to drainage, crop and livestock operation procedures, and traffic.
- Policy 1-C: Require the Plan Commission and County Commissioners to consider the additional costs of providing public services for the land being considered for rezoning from agricultural use.
- Policy 1-D: Require appropriate buffers to allow the continued full use of adjoining farmland and to reduce conflicts between neighboring uses.
- Policy 1-E: Encourage adequate representation from the agricultural industry on the Plan Commission.
- Policy 1-F: Direct development away from more productive farmland and agricultural areas.
- Policy 1-G: Prevent subdivision development from interfering with ongoing agricultural operations.
- Policy 1-H: Use incentives to encourage development in areas where growth is desired.
- Policy 1-I: Encourage local government to install infrastructure to encourage development into areas designated for such growth.
- Policy 1-J: Require development to take place in a manner that allows for preservation and conservation of farmland, open land and significant natural features.
- Policy 1-K: Protect neighboring farmland from increased water runoff (both surface and subsurface), night lighting, sun-blocking interference, trespassing or anything else which might interfere with existing or potential farm operations.
- Policy 1-L: Ensure that the Plan Commission and County Commissioners consider the impact on agriculture when they make decisions on extending infrastructure or approving new development.
- Policy 1-M: Develop farmland protection tools acceptable to the community such as multiple agricultural zoning districts, exclusive agricultural zones, voluntary agricultural zones, agricultural protection areas, and neighborhood farm districts.
- Policy 1-N: Provide incentives to increase support for and participation in agricultural protection programs.
- Policy 1-O: Develop a classification system for agricultural land based upon its suitability for productive farming, and develop a growth policy that reflects these classifications.
- Policy 1-P: Encourage new or expanded development, both residential and non-residential, to be compact and to be served by public water, sewer and other needed infrastructure and services.
- Policy 1-Q: Promote development of businesses such as value-added agricultural industries that enhance agriculture and agribusiness while protecting the character and environmental quality of the county.
- Policy 1-R: Encourage the Plan Commission and County Commissioners to consider the needs of farmers and the impacts on agriculture in making decisions on locations of highways or other public facilities.

### **Goal 2: Protect open space such as woodlands, flood plains, and wetlands for environmental, recreational, scenic, and life-style benefits.**

- Policy 2-A: Encourage education of staff, Plan Commission members, elected officials, and the public regarding agriculture and production procedures, investment and economics.

**Policy 2-B:** Ensure that development occurs in a manner that preserves farmland, wildlife habitat, woodland, and significant natural features.

**Policy 2-C:** Protect from development unique areas of the county with special natural features, for open space, parks, and wildlife habitat, for the benefit of present and future generations, while avoiding competition with private property ownership.

**Policy 2-D:** Develop incentives and other strategies to preserve or acquire unique and special lands for preservation and protection.

**Policy 2-E:** Utilize information about soil and water resources to make wise land use decisions and to prevent damage to the environment.

**Goal 3: Maintain rural neighborhoods, establish appropriate new neighborhoods, and revitalize existing rural towns and villages.**

**Policy 3-A:** Prevent continual strip development of land along county roads.

**Policy 3-B:** Limit the number of land divisions from a single parent tract, unless the property is subdivided in a manner consistent with county growth policy (i.e., new neighborhood with internal streets and amenities, in a location that does not interfere with agriculture).

**Policy 3-C:** Encourage new development to take place in and around existing cities, towns and villages.

**Policy 3-D:** Encourage infill development and redevelopment in existing towns and villages.

**Policy 3-E:** Encourage maintenance of rural buildings and grounds in such a way as to promote economic stability, health and safety. This maintenance includes but is not limited to discouraging the outdoor accumulation of inoperable or unlicensed vehicles, used appliances, furniture, and debris.

**Policy 3-F:** Require proper construction methods and materials in accordance with the code. This policy is not to be construed as requiring building permits for agricultural buildings.

**Policy 3-GF:** Encourage mixed housing types and prices in all geographic areas of the county; discourage concentrations of similar types and prices. This policy does not mean that houses of widely ranging price or type will be mixed in individual neighborhoods; it means that no broad geographic area of the county (i.e., southwest, northeast, etc.) will be characterized by a single type or price of housing.

**Policy 3-HG:** Require appropriate buffer areas between different land uses.

**Policy 3-IH:** Require new development to be in scale with its surroundings.

**Policy 3-JI:** Allow mobile homes only in mobile home parks meeting county standards, or for a limited time, such as in the case of a person needing care.

**Goal 4: Create stable residential neighborhoods that are safe, healthy, socially satisfying and retain their economic value.**

**Policy 4-A:** Prohibit development in areas where such development would jeopardize health or safety. These areas include but are not limited to floodways, areas with inadequate sewage disposal or water supply, areas with inadequate access, or land with known environmental problems.

**Policy 4-B:** Ensure that street designs promote safety by requiring traffic calming measures, and where appropriate, alleys, curbs and access to land where future development may take place.

**Policy 4-C:** Require pedestrian systems in new developments.

**Policy 4-D:** Require pedestrian systems to be accessible to all to the maximum extent possible.

**Policy 4-E:** Require all utilities to be placed underground in new subdivisions.

**Policy 4-F:** Encourage neighborhood business areas that are compatible with their surroundings, properly buffered and appropriately located.

**Policy 4-G:** Require that new neighborhoods have fire protection that meets county standards.

**Policy 4-H:** Require adequate drainage systems in new subdivisions. These systems should ensure that storm water accumulation does not increase the possibility of disease, unsafe conditions, or property damage.

**Policy 4-I:** Require inviting, safe, non-intrusive, street lighting in new developments.

**Policy 4-J:** Require appropriately located school bus waiting areas in new developments.

**Policy 4-K:** Require appropriate landscaping, particularly trees, on lots and in public areas.



- Policy 4-L: Require that new subdivisions have appropriate covenants and lot owner associations empowered to enforce community policies.
- Policy 4-M: Ensure that new subdivisions offer a sense of place, with at least two neighborhood open space entrance areas displaying attractive and well-maintained identification signs.
- Policy 4-N: Require subdividers to consider and plan for future needs created by the addition of new residences. These needs include but are not limited to sites for future neighborhood commercial centers, community centers, parks, and schools.

**Goal 5: Provide for institutional and other land uses that may be needed or desired in the community.**

- Policy 5-A: Establish criteria for location of recreational, public and institutional uses such as churches, schools, cemeteries, community centers, fire stations, campgrounds, and private recreational facilities in Bartholomew County. These criteria should take into account the potential impact of each use on traffic patterns, utilities, infrastructure, and the enjoyment of surrounding properties.
- Policy 5-B: Develop a review and approval process to evaluate these types of uses.

## **SECTION II: COMMUNITY RESOURCES AND ENVIRONMENT**

**Goal 6: Ensure wise and efficient use of limited and non-renewable resources including but not limited to capital and land.**

- Policy 6-A: Encourage revitalization of existing villages and small towns.
- Policy 6-B: Encourage creative adaptation of historical buildings to new uses.
- Policy 6-C: Encourage all Bartholomew County departments and agencies to evaluate and seek appropriate uses of the historical buildings under their control.
- Policy 6-D: Encourage vacant parcels to be used for projects such as parks or other amenities.
- Policy 6-E: Encourage growth that can utilize existing infrastructure.
- Policy 6-F: Encourage development in areas adjacent to already developed areas.
- Policy 6-G: Allow various types of housing such as accessory units.
- Policy 6-H: Encourage neighborhoods to contain a diverse socioeconomic mix.
- Policy 6-I: Encourage residential clustering and other development types that conserve open space and natural resources and reduce infrastructure costs.
- Policy 6-J: Require the Plan Commission and County Commissioners to consider the availability of schools, fire protection, security, roads, snow removal, sewage, water supply, drainage and other physical, economic, and social necessities.
- Policy 6-K: Ensure wise use of infrastructure dollars.
- Policy 6-L: Ensure that development takes place in an orderly fashion with the costs paid in a fair and equitable manner.
- Policy 6-M: Ensure that subdivisions are designed in a manner which preserves natural topography and other natural features, including, but not limited to trees, woodlands, wetlands, streams, ponds and drainage ways.
- Policy 6-N: Ensure that new development does not lower the level of service nor place an excessive burden on current residents.

**Goal 7: Maintain and enhance the quality of the water, air and land.**

- Policy 7-A: Ensure that floodway areas are protected from development.
- Policy 7-B: Avoid development in the floodway fringe.
- Policy 7-C: Ensure, to the extent possible, that new development does not cause deterioration in water quality or quantity for existing development.
- Policy 7-D: Require new large subdivisions to be served by public water and sewage or an equivalent system
- Policy 7-E: Develop a system to ensure that sewage disposal systems, including septic systems, are inspected and maintained.

- Policy 7-F: Control soil erosion from development and from agriculture.
- Policy 7-G: Require developers to prepare and implement effective erosion control plans.
- Policy 7-H: Meet or exceed federal and state air quality standards.
- Policy 7-IG: Meet or exceed federal and state water quality standards.
- Policy 7-JH: Require a geotechnical investigation and analysis of general soil conditions and, if problems are indicated, require a detailed analysis to ensure that soil conditions and topography are suitable for planned construction.
- Policy 7-KI: Require an environmental assessment before development plans are submitted for approval.
- Policy 7-LJ: Ensure that human and animal waste disposal is carried out in accordance with applicable environmental regulations.

**Goal 8: Prevent Drainage Problems.**

- Policy 8-A: Require an adequate drainage system whenever there is a land use change.
- Policy 8-B: Require applicants to pay for drainage studies performed by qualified professionals acceptable to the county.
- Policy 8-C: Adopt standards to minimize adverse drainage impacts, both downstream and upstream, from land use changes.
- Policy 8-D: Require all property owners benefitting from a subsurface drainage system to be responsible for their share of the maintenance of the existing subsurface drainage system, whether the system is on their property or others= property.
- Policy 8-E: Protect property from adverse effects of drainage changes on neighboring property, including agricultural property.
- Policy 8-F: Encourage the county and other responsible parties to excavate road and street side ditches to maintain a positive outlet.
- Policy 8-G: Prevent the filling of roadside and street side ditches by property owners.
- Policy 8-H: Minimize drainage impacts from road or bridge construction or reconstruction.
- Policy 8-I: Require all property owners to ensure that surface drainage ways under their control remain open.
- Policy 8-J: Require adequate detention/retention to minimize the impact of run off.
- Policy 8-K: Require properly engineered drainage systems for all new development, particularly on poorly drained soils.
- Policy 8-L: Encourage incorporated areas to require detention or retention of storm water in new development to lessen the impact on property outside the incorporated area=s jurisdiction.
- Policy 8-M: Require developers to install a storm water management system that will release water off the developed areas in a non-intrusive manner.
- Policy 8-N: Require developers to design systems to collect storm water runoff within their developments.
- Policy 8-O: Require developers to permit natural flow of off-site runoff to continue through or be retained in the proposed development, provided that the discharge to the development continues at no more than the pre-developed rate.
- Policy 8-P: Require subdividers to locate any known existing drain tiles affected by their developments and to take appropriate steps to protect these drainage systems.

**Goal 9: Improve Existing Drainage Problems.**

- Policy 9-A: Request that those who are unsuccessful in solving their drainage problems privately petition the County Drainage Board for assistance.
- Policy 9-B: Enforce adherence to the approved drainage design for developed property.
- Policy 9-C: Seek state and federal grants to improve and maintain waterways, rivers, streams, and drains.
- Policy 9-D: Wherever practical, replace existing drainage structures (bridges, culverts, field tile) having inadequate flow capacity located within the county road right-of-way.

**Goal 10: Reduce Flooding and Flood Damage.**

- Policy 10-A: Encourage building to take place outside the flood plain.
- Policy 10-B: Require detention or retention of runoff.

Policy 10-C: Prevent filling within the floodway.

Policy 10-D: Encourage reforestation, tree planting, and implementation of Best Management Practices (BMP) on existing woodlands.

**Goal 11: Reduce Soil Erosion.**

Policy 11-A: Require an erosion control plan for any land use change.

Policy 11-B: Promote conservation farming practices.

Policy 11-C: Encourage best practices for reducing soil erosion from development activities and from agriculture.

Policy 11-D: Require developers to prepare and implement effective erosion control plans.

**Goal 12: Improve Water Quality and Ensure an Ample Supply of Potable Water.**

Policy 12-A: Protect ground and surface water from contamination by chemicals, industrial waste, septic systems, animal waste, human waste, and sludge.

Policy 12-B: Encourage best practices for reducing soil erosion.

**Goal 13: Preserve and enhance the beauty of Bartholomew County**

Policy 13-A: Encourage proper maintenance of buildings and grounds, to promote economic stability, health, and safety. This maintenance includes but is not limited to discouraging the outdoor accumulation of inoperable or unlicensed vehicles, use appliances, furniture, and debris.

Policy 13-B: Require new businesses and industries to add landscaping around their building and parking lots to enhance their appearance, and encourage existing businesses and industries to do so.

Policy 13-C: Prohibit billboards on all highway corridors.

Policy 13-D: Develop an effective means of eliminating working with property owners to eliminate abandoned and/or dilapidated buildings, either through adapting the buildings to a new use or removing them.

Policy 13-E: Minimize disruption of the landscape from excavation and mining operations.

Policy 13-F: Require appropriate landscape buffer area around large industrial, excavation, or mining operations so that they do not significantly detract from the beauty of the surrounding area.

Policy 13-G: Encourage reclamation practices that will enable the land used for excavation or mining to be appropriately re-used.

**SECTION III: TRANSPORTATION AND INFRASTRUCTURE**

**Goal 14: Ensure the safe disposal of sewage.**

Policy 14-A: Encourage the development of a county rural sewer system in areas where growth is desired.

Policy 14-B: Encourage the connection of existing package treatment plants into a larger treatment system.

Policy 14-C: Discourage the use of package treatment plants in the county, unless these systems are properly designed, have permanent operation and maintenance guarantees, and the systems are capable of later connection to a larger sanitary sewage system.

Policy 14-D: Discourage the use of septic systems and leach fields in the county.

Policy 14-E: Encourage development to take place where existing sewer systems are available.

**Goal 15: Ensure a safe, abundant supply of water.**

Policy 15-A: Encourage the development of rural water districts for domestic use and fire protection in the county. (See Policy 14-C) in areas where growth is desired.

Policy 15-B: Require that water systems serving new development and expansions have sufficient volume and pressure for fire protection.

Policy 15-C: Encourage development to take place where public and semi-public water systems are available.

**Goal 16: Ensure that new development has adequate utility services.**

Policy 16-A: Encourage development to take place where existing gas and electric utilities are available.

Policy 16-B: Encourage all utility companies to plan for future development needs by ensuring that lines are properly sized.

**Goal 17: Ensure the safe, efficient movement of traffic.**

Policy 17-A: Improve the county road system to the maximum extent possible to meet current standards.

Policy 17-B: Ensure that right-of-way widths are adequate to support transportation systems and all other utility infrastructure located within the right-of-way.

Policy 17-C: Ensure that subdividers participate in a fair and equitable manner in the cost of road improvements necessitated by new development.

Policy 17-D: Ensure that street patterns for new subdivisions are designed to provide suitable access to adjoining property.

## **SECTION IV: COMMERCE AND INDUSTRY**

**Goal 18: Promote economic growth in the county by encouraging the location and expansion of businesses and industries that are compatible with their surroundings and provided with adequate services.**

Policy 18-A: Require industrial centers and other similar uses to be built in areas with suitable transportation, utilities, water and sewage, and other needed infrastructure, or where there is an implementable plan to provide them.

Policy 18-B: Encourage industrial and commercial land uses to be consolidated in similar use areas.

Policy 18-C: Require measures to prevent flooding, pollution, and soil loss as a result of mineral extraction or other excavation.

Policy 18-D: Establish mechanisms to evaluate the short- and long-term effects of excavation and mining activities on the land.

Policy 18-E: Discourage scattered industrial and commercial land use.

Policy 18-F: Promote infill development in existing industrial areas, including brownfields redevelopment.

Policy 18-G: Encourage industry to use land with existing suitable roads or have a plan to provide suitable roads and bridges.

Policy 18-H: Encourage commercial and industrial operations to locate on land other than timberland, productive farmland, or land subject to flooding.

Policy 18-I: Encourage flexibility so that the county can respond to changing economic situations or needs.

Policy 18-J: Encourage lighting of parking areas and other spaces to promote safety and security, without adversely affecting neighboring properties, residential or farm land or traffic flow.

Policy 18-K: Reduce points of traffic conflict on public streets through driveway and intersection separation requirements.

Policy 18-L: Prevent any industries that noticeably deteriorate the air quality from locating in the county.

Policy 18-M: Encourage development of commercial and office centers, rather than strip development.

Policy 18-N: Encourage doctors, veterinarians, lawyers, and other professional buildings to be in clusters.

Policy 18-O: Encourage rural-related businesses of a scale appropriate to their surroundings, such as agriculture products and services stores, seasonal produce markets, hobby and craft stores, wineries, greenhouses, small engine repair. Where these types of businesses are of a suitable scale and in appropriate rural locations, encourage them as home-based businesses.

**Goal 19: Maintain and enhance the attractiveness of Bartholomew County by preventing sign clutter, oversized and garish signs while recognizing the need for local businesses to advertise their goods and services.**

Policy 19-A: Ensure that all businesses are treated equally with respect to signs.

Policy 19-B: Encourage signs large enough to be seen, at normal driving speeds, without detracting from the beauty of the surrounding area. Heights and sizes of signs should be related to driving conditions (i.e., width of road, speed of traffic)

Policy 19-C: Follow DOT and INDOT rules on sign setback distances.

- Policy 19-D: Encourage those signs that effectively communicate essential information to drivers; discourage proliferation of signs and signs that distract rather than inform.
- Policy 19-E: Allow only those off-site signs that are necessary to provide adequate directional information to drivers.

**Goal 20: Provide for wireless and other communication needs in the least intrusive way possible.**

- Policy 20-A: Develop a mechanism to ensure that the owners of new transmission towers provide maintenance for the life of the towers.
- Policy 20-B: Require that towers be removed when they are no longer in use or functioning.
- Policy 20-C: Establish a reporting system for tower owners to confirm the continued operation, need for, and proper maintenance of the tower.
- Policy 20-D: Establish a minimum separation distance from any houses, and ensure that new houses are not be constructed within a minimum distance of the tower.
- Policy 20-E: Encourage a landscape buffer zone around the perimeter fence area of the tower.
- Policy 20-F: Establish restrictions on the number of towers permitted within a specified geographic area to limit the density of towers.
- Policy 20-G: Require towers to be used for multiple transmitters / uses.

**Goal 21: Provide utility needs in the least intrusive way possible.**

- Policy 21-A: Encourage utility companies to run power transmission lines along property and section lines.
- Policy 21-B: Encourage utility companies to remove towers and poles when they are no longer in use or functioning.
- Policy 21-C: Encourage utility companies to route lines and locate substations in a manner to avoid residential areas, to the extent possible.
- Policy 21-D: Require a landscape buffer zone around substations.

**Goal 22: Provide suitable locations for junk or scrap yards, salvage yards, and other unsightly uses.**

- Policy 22-A: Require buffering to screen the view of unsightly uses.
- Policy 22-B: Establish standards to minimize the environmental impact of outdoor storage of materials such as junk or scrap.
- Policy 22-C: Establish minimum setback distances between unsightly uses and houses, schools, and other businesses.
- Policy 22-D: Establish a minimum setback distance from all roads for junk, scrap and salvage yards and other similar uses.
- Policy 22-E: Prohibit junk, scrap and salvage yards in flood plains.
- Policy 22-F: Establish minimum setback distances from streams, creeks, or rivers for junk, scrap and salvage yards.
- Policy 22-G: Encourage recycling and allow only properly operated and properly screened scrap, or salvage yards, and prevent the expansion of existing operations that do not meet county standards.
- Policy 22-H: Prohibit junk, scrap, or salvage yards over aquifers or in other water supply areas.

**Goal 23: Provide for the safe, efficient disposal of locally generated solid waste.**

- Policy 23-A: Prohibit private, for-profit, landfills from locating in Bartholomew County, and prohibit solid waste generated from outside the county from disposal in any county-owned or county-controlled landfill.
- Policy 23-B: Encourage proper siting and maintenance of a publicly owned or controlled solid waste disposal facility to meet the needs of local residents and businesses.
- Policy 23-C: Encourage the recycling of all items that can be recycled.

## **SECTION V: PROCEDURES**

**Goal 24: Ensure that the county's plan and ordinances have the desired effect.**

- Policy 24-A: Develop a means of evaluating the impacts of the comprehensive plan.
- Policy 24-B: Review and revise the plan on a regular basis, at least every five years.
- Policy 24-C: Review the Bartholomew County ordinances yearly to determine their effectiveness in implementing the plan.

**Goal 25: Encourage intergovernmental cooperation.**

- Policy 25-A: Encourage regular communications between Bartholomew County officials and agencies and those of incorporated areas within the county.
- Policy 25-B: Encourage cooperative efforts with surrounding counties on matters of mutual concern, such as watershed protection, highway corridors, and the effects of land use decisions on neighboring properties.
- Policy 25-C: Encourage cooperation among departments and agencies within the county.
- Policy 25-D: Encourage cooperation between county and state agencies, such as the Indiana Department of Transportation, the Indiana Department of Natural Resources, and the Indiana Department of Environmental Management.
- Policy 25-E: Encourage cooperation between the county and the school corporations within the county.

**Goal 26: Encourage cooperation between the county and private enterprises.**

- Policy 26-A: Encourage communication with private utility companies affected by development.
- Policy 26-B: Encourage public-private partnerships to achieve community objectives.

**Goal 27: Encourage voluntary compliance with county policies and regulations.**

- Policy 27-A: Promote educational efforts that will increase understanding of the effects of land use decisions on the community as a whole.
- Policy 27-B: Whenever possible, use incentives rather than penalties to encourage compliance with county policies and regulations.

**BARTHOLOMEW COUNTY COMPREHENSIVE PLAN ELEMENT II – LAND USE PLAN**  
ADOPTED FEBRUARY 3, 2003

**I. BACKGROUND**

The Land Use Plan represents Element 2 of the Bartholomew County Comprehensive Plan. This second phase of the plan was conceived in tandem with Element 1: Goals and Policies, adopted by the Bartholomew County Commissioners in September 1999. The first phase of the comprehensive plan process was developed with significant public input representing a variety of interests.

A committee of the Plan Commission compiled information over the last several months that led to a Draft Land Use Map, four proposed Land Use Districts, and recommended Land Use Principles.

**II. GENERAL LAND USE PRINCIPLES**

***Preserve productive farmland for farming.***

The committee found that over half of the land in county planning jurisdiction is prime farmland according to a definition developed by the committee (see "Area Definitions," below). Farming is an important part of Bartholomew County's history and economy. Farmland preservation is becoming a greater concern in the county, and in the state overall, as more and more prime farmland is lost to development. The committee found that the county should develop a plan for preserving prime farmland.

***Make decisions that will direct growth to areas that are suitable for growth.***

Element 1 of the plan includes many policies that are intended to direct growth to appropriate areas. Improvements relating to utilities, roads, and other infrastructure should be made if necessary for public health and safety, in areas where growth is desired, and to revitalize existing towns and villages. Extensive development may not be appropriate in prime farmland districts, significant natural areas, and significant historic areas.

***Make land use decisions that protect and improve community resources and the environment.*** Land use decisions and construction planning should consider impacts on county resources including, but not limited to, drainage systems, environmentally sensitive areas, surface and groundwater resources, significant forested areas, natural habitats, and historic resources.

***Intergovernmental cooperation should be encouraged.***

Projects that are inter-jurisdiction or regional in nature will require cooperation of several government agencies. These may be large construction projects, or regional concerns such as watershed restoration or highway projects. Throughout the comprehensive plan process, the City of Columbus and Bartholomew County have made an effort to coordinate their efforts. The city and county should continue existing cooperative processes, and develop new processes as needed. The county should also take advantage of opportunities to work with other counties on projects or issues of regional or statewide concern.

### III. LAND USE DISTRICTS

The land use districts should not be considered zoning districts, but, rather, the vision of the people of Bartholomew County for the best use of land in the county. The districts defined as part of the land use plan are not rigid. From time to time, there may be reason to amend the plan by adjusting boundaries and/or descriptions.

#### ***Agricultural Preferred***

The Agricultural Preferred district includes prime farmland in Bartholomew County outside developed areas. Prime farmland in our county includes most of the eastern and northern parts of the county. There are a few areas of prime farmland in the south and west. Element 1 of the comprehensive plan includes the goal of preserving productive farmland, as well as 18 policies directly relating to farmland preservation (Goal 1, Policies 1-A through 1-R).

#### ***Natural Resource/Recreation***

This district includes environmentally sensitive areas such as floodplains, rivers and streams, aquifers/other water supply areas, wetlands, environmentally important forests and other natural habitats, and parks and recreational areas. It should be noted that some of these areas have not been identified or need to be updated, including, but not limited to, wetlands and floodway areas. Element 1 of the comprehensive plan includes several goals and policies relating to conservation of such resources, including the following overall goal: "Goal 2: Protect open space such as woodlands, floodplains, and wetlands for environmental, recreational, scenic and life-style benefits."

#### ***General Rural***

The General Rural district is viewed as less restrictive than the preferred and natural resource districts. Intensive development would be discouraged here. The area proposed as General Rural is now a mix of farmland, woodlands, residential, some institutional (such as schools, churches and fire stations), and limited commercial (such as small stores). These uses are appropriate. Most of the area proposed for this district is south and west of the City of Columbus jurisdiction. The general character here is hilly and wooded, with many areas of steep slopes and scenic beauty. There are environmentally important forests in this area. There may be other natural areas within this district, though not specifically designated at this time.

Much of the district may not be suitable for septic systems. Residential development is appropriate if served by public sewer and water, and if designed with drainage systems that address the development and do not contribute to drainage problems elsewhere. Cluster development and smaller lot sizes should be encouraged to maintain open space and natural areas.

#### ***Development District***

The Development District has initially been drawn to include existing population/commercial centers with public sewer and water systems. These are: Taylorsville, and the unincorporated fringes near Hope, Hartsville, and Elizabethtown. (The towns themselves are separately incorporated and hence not addressed in this plan.) The area around the intersection of State Roads 7 and 9, and U.S. 31 has also been designated as a development district. Development in this area is appropriate only on non-flood hazard land, where drainage issues may be adequately addressed,



and only if public sewer and water connections are possible. Element 1 of the comprehensive plan encourages new development to take place in and around existing developed areas, where public utilities are available.

Other areas could be designated for development where it is feasible to extend public utilities. New development areas should avoid prime agricultural or environmentally sensitive areas. Expansion of existing developed areas has the potential to result in the loss of land in prime farmland and natural resource. Every effort should be made to balance development with the land preservation goals of the comprehensive plan.

Element 1 of the comprehensive plan includes the following goal related to Commerce and Industry: "Goal 18: Promote economic growth in the county by encouraging the location and expansion of businesses and industries that are compatible with their surroundings and provided with adequate services."

#### **IV. AREA DEFINITIONS**

The Land Use Plan should include definitions of the major areas identified in the plan. Such definitions will assist in implementation of the plan.

##### ***Prime Farmland***

Prime farmland consists of land with soil types that are capable of producing crops efficiently and sustainably. This would include pasture land and soils with the potential of producing crops economically and sustainably with irrigation. Prime farmland is located in areas where agriculture production is the principle land use and would be expected to remain as its best and most practical use. Prime farmland would also be located where public water and sewer is not available or practical to provide.

Prime farmland has soils with the potential to produce productive yields of the commercial and specialty crops grown in this area. Drought prone soils with or without the potential of irrigation may also qualify as prime ag land.

The topography is level to greatly rolling land which is not conducive to erosion problems with proper crop production practices. Land more subject to erosion may qualify as prime when Best Management Practices are used in crop production or where ground cover exists such as permanent pasture, hay, or timber.

The location is where agriculture production is the principal land use and would be expected to remain as its best and most practical use; where public water and sewer service are not available or practical; and where a sufficient base of agricultural land, open space, and natural areas are maintained within the county.

##### ***Historic Resources***

Historic Resources of Bartholomew County include those resources listed in the National Register of Historic Places or the Indiana State Register of Historic Sites and Structures. Resources identified as eligible for the State or National Registers in the Indiana Historic Sites and Structures Inventory also qualify as historic resources. The Indiana Historic Sites and Structures Inventory was conducted in Bartholomew County in 1978. A survey update for Sand Creek Township, as well as parts of Columbus and Wayne Townships, was completed in 2002. An updated survey for other areas of the county should be encouraged. Bartholomew County should implement a policy for protection of historic resources under its ownership or within its planning jurisdiction.

Owners of properties that are identified as historic should retain their individual property rights.

***Forest Legacy Area***

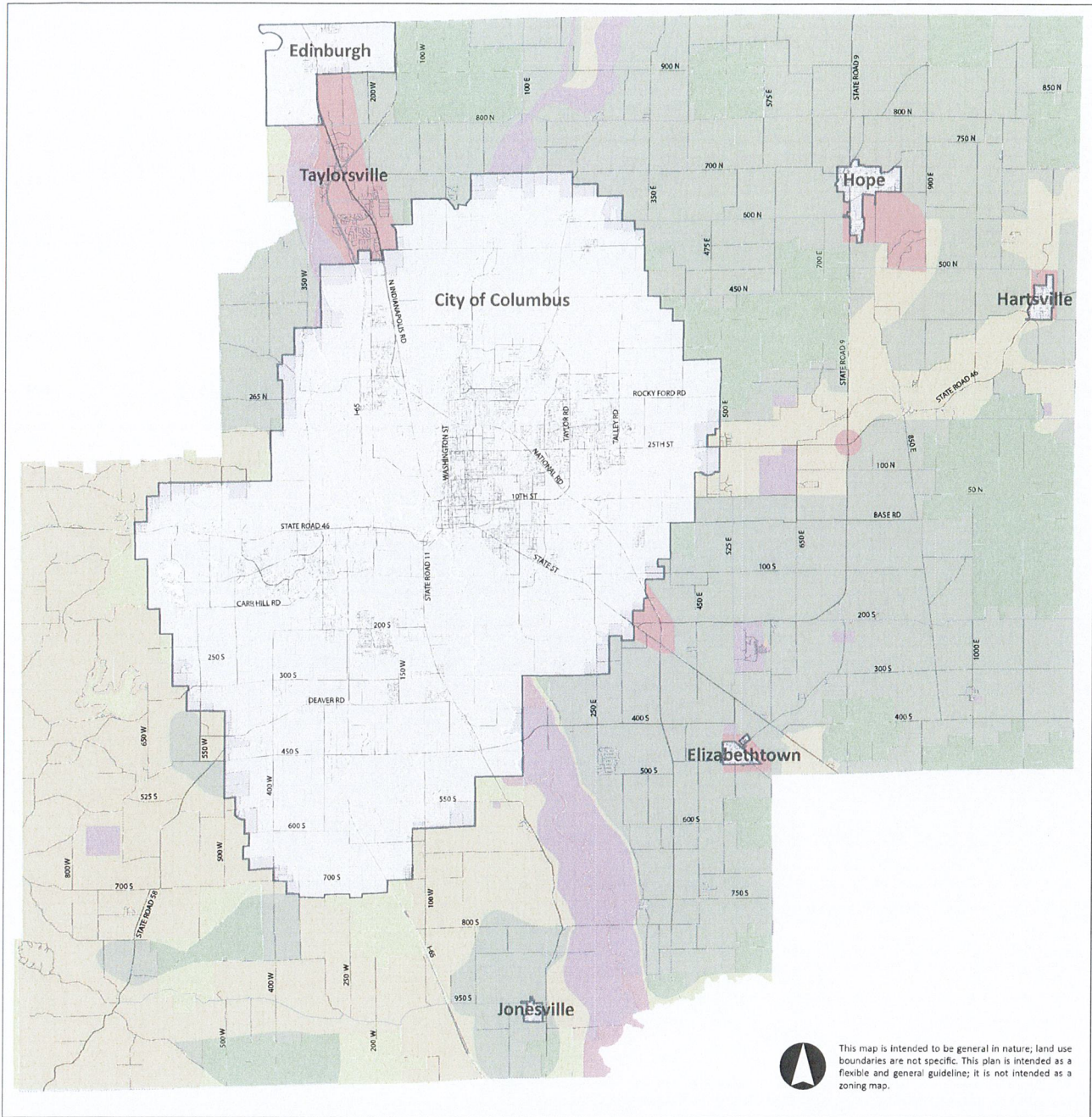
Much of the western third of Bartholomew County was identified as a "Forest Legacy Area" by the Indiana Forest Stewardship Coordinating Committee in 1998. The Forest Legacy program was established by Congress as part of the 1990 Farm Bill to identify and protect environmentally important forest lands. In Indiana, the program would operate by purchasing development rights from willing sellers, although it is not available at this time. The owners would retain all other rights, including the right to harvest timber and sell or bequest the remaining rights.

Bartholomew County should encourage programs that offer incentives to property owners who voluntarily protect important forested areas.

***Development***

Development is defined as commercial, industrial, institutional, or housing development; except for developments of a necessary and low-impact character such as single neighborhood stores, small churches, necessary services such as fire stations, single-family houses, and small residential subdivisions.

Small subdivisions are defined as 4 lots or fewer. Subdivisions of 5-9 lots are defined as medium subdivisions, and subdivisions of 10 or more lots are defined as large subdivisions. Small subdivisions would be appropriate in Agriculture Preferred, General Rural, and Development districts. Medium subdivisions would be appropriate in Development districts, and, under suitable conditions, in General Rural districts. Large subdivisions would be appropriate only in Development districts. Farms of any size are not considered developments for the purpose of this definition.



# Future Land Use Map

## Bartholomew County Comprehensive Plan

- Agricultural Preferred District
- Development District
- General Rural District
- Natural Resource / Recreation District
- Other Jurisdiction



# County BZA Meeting

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FEBRUARY 26, 2024

The following presentations are meant to capture most of the relevant talking points of the local citizen group identified as B4CSF. It is designed as fact based and on point to prove all 4 conditional use criteria are not being met by Carina Solar application.

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# Innovative Ideas

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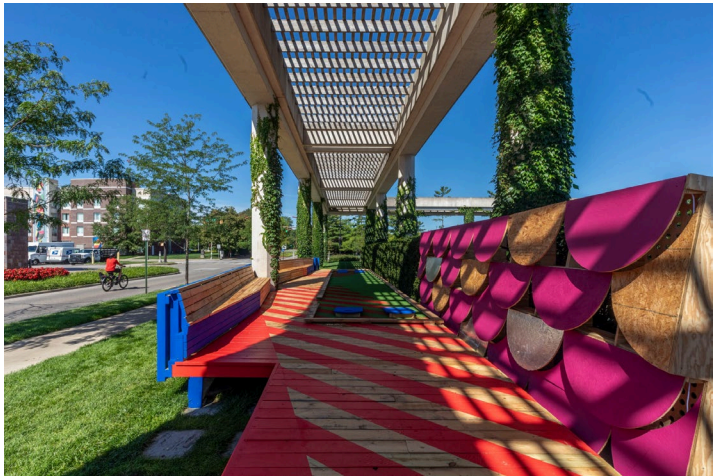
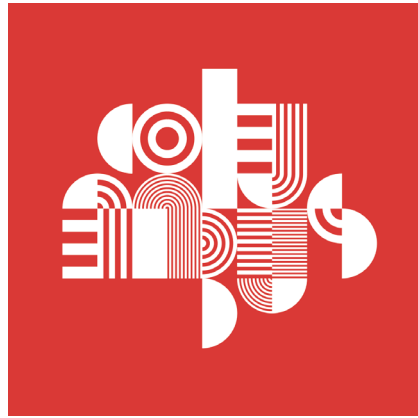
CHERYL CAROTHERS





# Cincinnati Zoo Solar Parking Lot







# Bartholomew County Gateways

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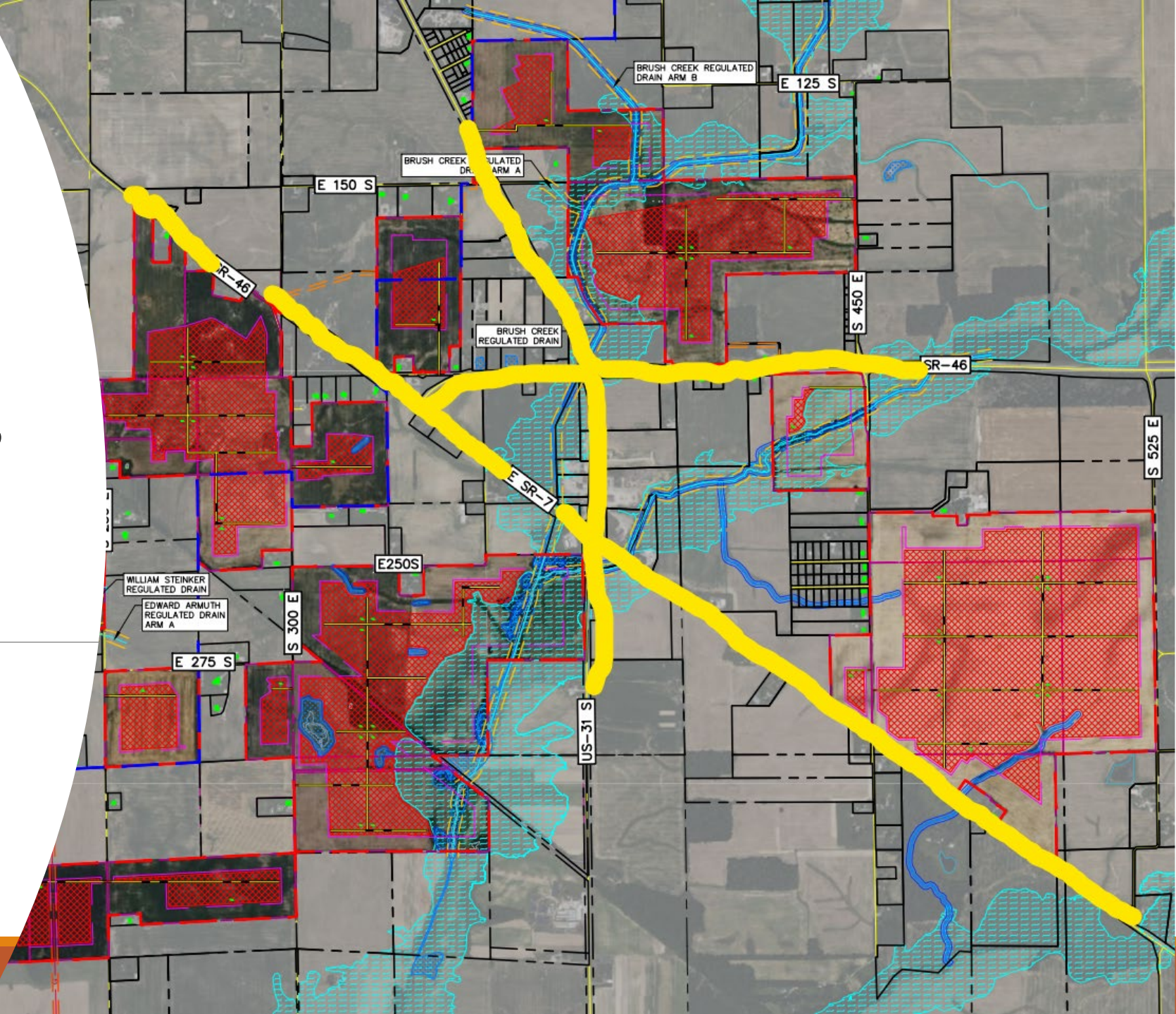
TAFFY SCHROER

# Bartholomew County Gateways and Criteria #4

TAFFY SCHROER

3950 HIGH VIEW WAY COLUMBUS

9520 E BASE ROAD COLUMBUS



Bartholomew  
County  
Comprehensive  
Plan Element 1  
Goal 18

“Economic growth in the county by encouraging the location and expansion of businesses and industries that are compatible with their surroundings.”

## Criteria #4

The conditional use will be consistent with the character of the zoning district in which it is located and the recommendations of the Comprehensive Plan.

Will the conditional use change the character of the area?

YES

Will it involve the building, operation or feature that are significantly different than what is common to the zoning district?

YES

## Carina response to Criteria #4 and its follow-up questions:

“The conditional use will be consistent with the character of the zoning district in which it is located and the recommendations of the Comprehensive Plan.”

-Change the character of the area?

-Features different than what is common to the zoning district?

- The Columbus Indiana Comprehensive Plan Land Use Plan Element, adopted June 5, 2002, states that "The plan calls the most productive **farmland to be preserved** and protected." Unlike traditional development of commercial and residential real estate, this conditional use will not involve the construction of any buildings. Power Generation Facility projects built on agricultural lands will **allow the soil to rest** for around 30 years or more. The U.S. Department of Energy (2022) states that “land can be reverted back to agricultural uses at the end of the operational life for solar installations.” A life of a solar installation is roughly 30 years and can provide a recovery period, increasing the value of the land for agriculture in the future. Giving soil rest can also maintain soil quality and contribute to the biodiversity of agricultural land. Power Generation Facilities are passive uses that require even less activity and handling than agriculture. Such use is commonly cited in agriculture areas as they are so passive like growing crops sitting idle for extended periods.



# Bartholomew County Comprehensive Plan Policy 25-C “Encourage cooperation among departments and agencies with the county.”

The City of Columbus Comprehensive Plan:

## Policy J-2-1

- “Maintain and enhance the safety and attractiveness of the entrances of the city. The entrances create the first impression of Columbus...they should be attractive.”

## Policy J-3-1

- “Limit the growth of industrial activity to the areas most suited for this use.”

## With respect to Criteria #4:

-Solar arrays are not consistent with the surrounding land. (Policies J-2-1, J-3-1)

-The applicant did not satisfy Criteria #4.

· -Solar does not create the welcoming vibe as described in Columbus' Comprehensive Plan

Intergovernmental Cooperation:

“Development inside and outside the city limits affects the community as a whole.”

Exclude industrial solar from our Gateways.



# Comprehensive Plan

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CLAUDIA SIMS



CONDITIONAL  
USE CRITERIA:  
#4

Claudia Sims



# Columbus & Bartholomew Co. Zoning Ordinance

Board of Zoning Appeals (BZA) Applications

Conditional Use Application

Criteria Number 4:

*The conditional use will be consistent with the character of the zoning district in which it is located and the recommendations of the Comprehensive Plan.* Will the conditional use change the character of the area? Will it involve a building, operation, or features that are significantly different than what is common to the zoning district?

Pg. 2 - City of Columbus-Bartholomew  
County Planning Department  
Conditional Use Application

# Carina Solar's response:

“The Columbus Indiana Comprehensive Plan Land Use Plan Element adopted June 5, 2002, states that "The plan calls the most productive farmland to be preserved and protected." Unlike traditional development of commercial and residential real estate, this conditional use will not involve the construction of any buildings. Power Generation Facility projects built on agricultural lands will allow the soil to rest for around 30 years or more. The U.S. Department of Energy (2022) states that "land can be reverted back to agricultural uses at the end of the operational life for solar installations." A life of a solar installation is roughly 30 years and can provide a recovery period, increasing the value of the land for agriculture in the future. Giving soil rest can also maintain soil quality and contribute to the biodiversity of agricultural land. Power Generation Facilities are passive uses that require even less activity and handling than agriculture. Such use is commonly sited in agriculture areas as they are so passive like growing crops sitting idle.”





# Columbus Comprehensive Plan

**POLICY A-2-5:** Ensure that the city considers the impacts on agriculture when new development is proposed or infrastructure extended.

New roads and utilities can disrupt farming activities and increase development pressures in rural areas. Factories can cause air pollution and noise that adversely affect plants and livestock. Agricultural land should be viewed as land in active economic use, not as inexpensive vacant land.

Pg. 9

# Bartholomew County Comprehensive Plan

**POLICY 1-L:** Ensure that the Plan Commission and County Commissioners consider the impact on agriculture when they make decisions on extending infrastructure or approving new development.

Pg. 1

# Columbus Comprehensive Plan

**POLICY B-1-4:** Prevent soil erosion, both from urban development and from agriculture.

Topsoil is a valuable nonrenewable resource which should be preserved. In addition, improper or unwise development and farming practices result in the siltation of our waterways.

Pg. 12

# Bartholomew County Comprehensive Plan

**POLICY 11-B:** Promote conservation farming practices.

**POLICY 11-C:** Encourage best practices for reducing soil erosion from development activities and from agriculture.

Pg. 5

# Columbus Comprehensive Plan

**POLICY E-2-15:** Encourage maintenance of views to the landscape beyond the road frontage.

Columbus is characterized by open spaces and river corridors which are visible from highway corridors. These views add to the attractiveness of the community and contribute to a “sense of place.” These views should be preserved as the city grows.

Pg. 21

# Bartholomew County Comprehensive Plan

**POLICY 6-N:** Ensure that new development does not lower the level of service nor place an excessive burden on current residents.

Pg. 3



- This field of solar panels northeast of South Bend covers only 210 acres. The installation being built by Indiana & Michigan Power is much smaller than the controversial farms planned elsewhere in the state.

(Photo by Rob Franklin)

<https://www.ibj.com/articles/solar-farm-boom-hits-hoosier-backlash>



Criteria #4 is not being met by the Solar Panel Company.



# Effects on Soil Condition

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HENRY SIMS



# Effects on Soil Condition

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RETURNING LAND BACK  
TO AGRICULTURE USE?



# Criteria 4 is not being met.

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Board of Zoning Appeals (BZA) Applications

Conditional Use Application

Criteria Number 4:

***The conditional use will be consistent with the character of the zoning district in which it is located and the recommendations of the Comprehensive Plan.*** Will the conditional use change the character of the area? Will it involve a building, operation, or features that are significantly different than what is common to the zoning district?

# Carina Solar's response:

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“The Columbus Indiana Comprehensive Plan Land Use Plan Element adopted June 5, 2002, states that "The plan calls the most productive farmland to be preserved and protected." Unlike traditional development of commercial and residential real estate, this conditional use will not involve the construction of any buildings. Power Generation Facility projects built on agricultural lands will allow the soil to rest for around 30 years or more. The U.S. Department of Energy (2022) states that "land can be reverted back to agricultural uses at the end of the operational life for solar installations." A life of a solar installation is roughly 30 years and can provide a recovery period, increasing the value of the land for agriculture in the future. Giving soil rest can also maintain soil quality and contribute to the biodiversity of agricultural land. Power Generation Facilities are passive uses that require even less activity and handling than agriculture. Such use is commonly sited in agriculture areas as they are so passive like growing crops sitting idle.”

## **Bartholomew Co. Comprehensive Plan**

**Policy 7-F:** Control soil erosion from development and from agriculture.

**Policy 11-C:** Encourage best practices for reducing soil erosion from development activities and from agriculture.

**Policy 12-B:** Encourage best practices for reducing soil erosion.

# Effects on the soil:



# Iowa State University Soil Erosion Research

“Some seriously eroded soils are not useable for crop production.”

Many studies have been conducted on the effect of depth of topsoil on corn yields in the Corn Belt states. Figure 1 (from Stallings, J.H. 1964. *Phosphorus and water pollution. Journal of Soil Water and Conservation* 22: 228-231) summarizes the relationship between topsoil depth and crop productivity. There is a direct relationship between topsoil depth and yield.

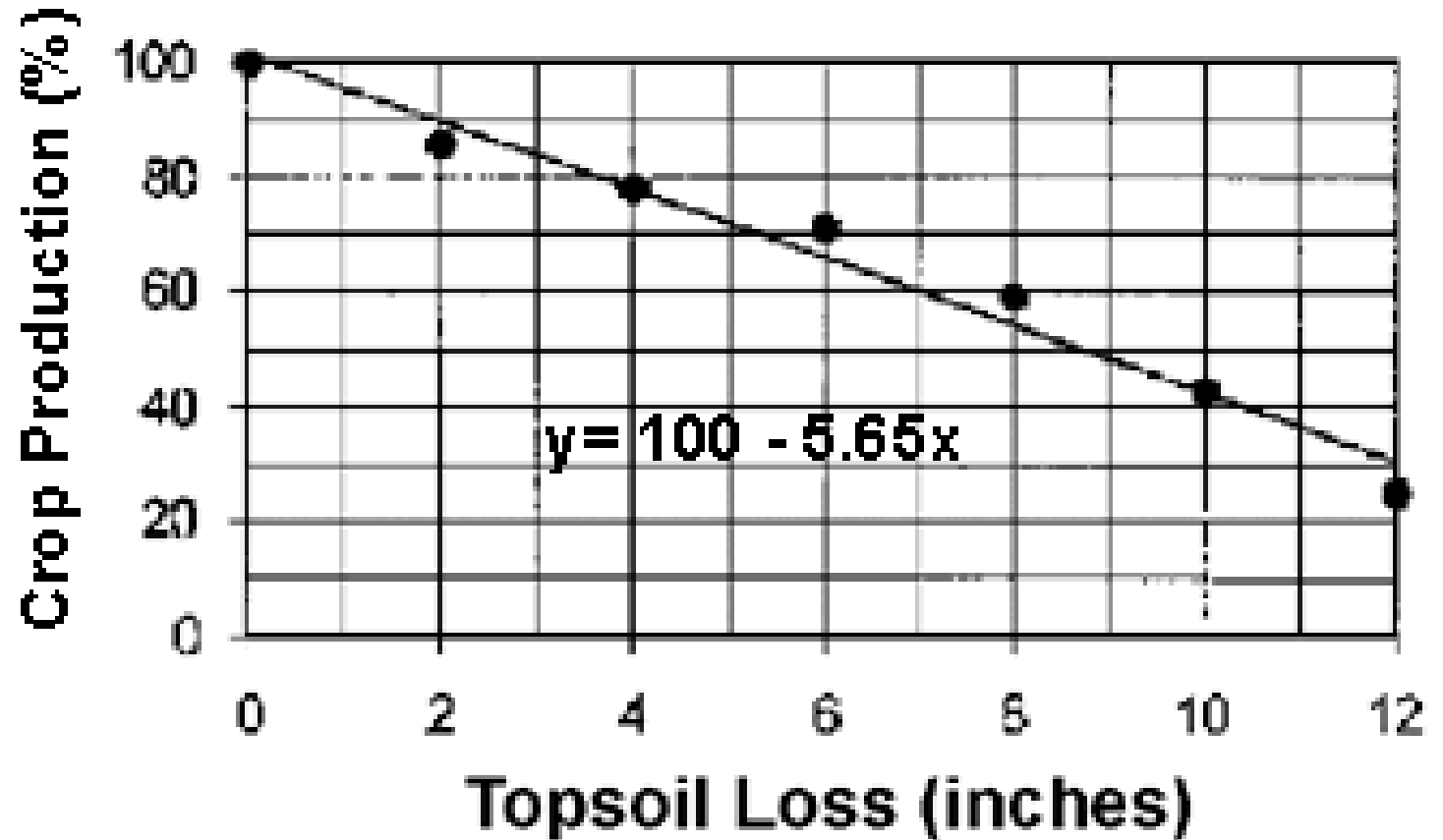


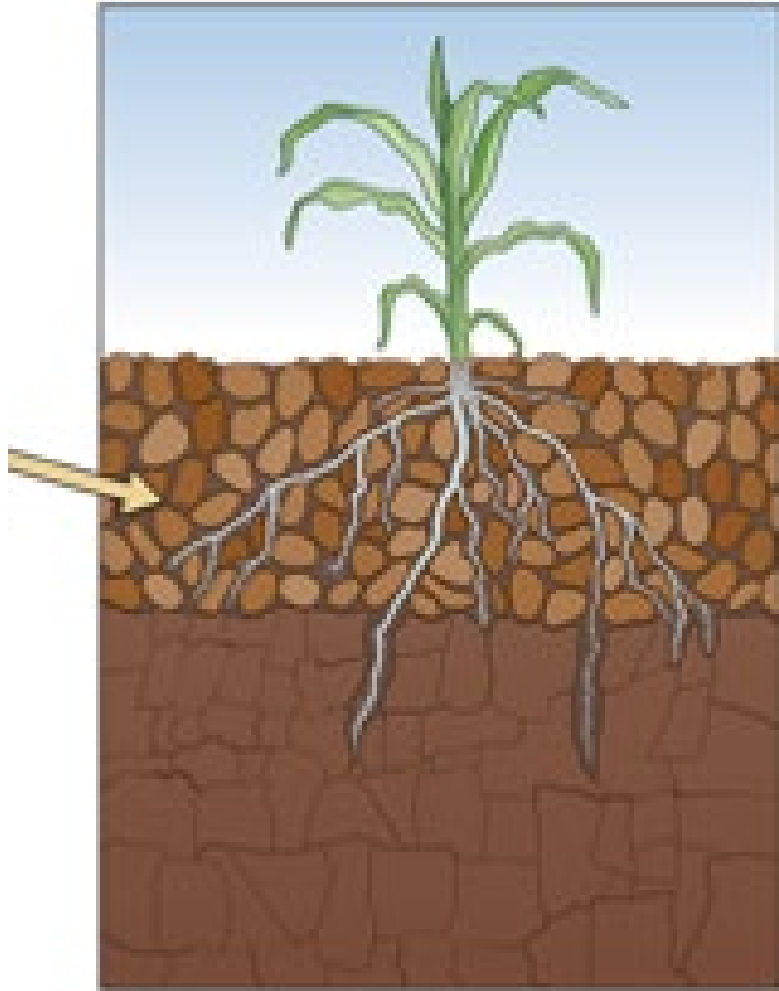
Figure 1. Reduction in crop productivity from loss of topsoil. Data were primarily collected on soils without adequate fertilizer treatment.



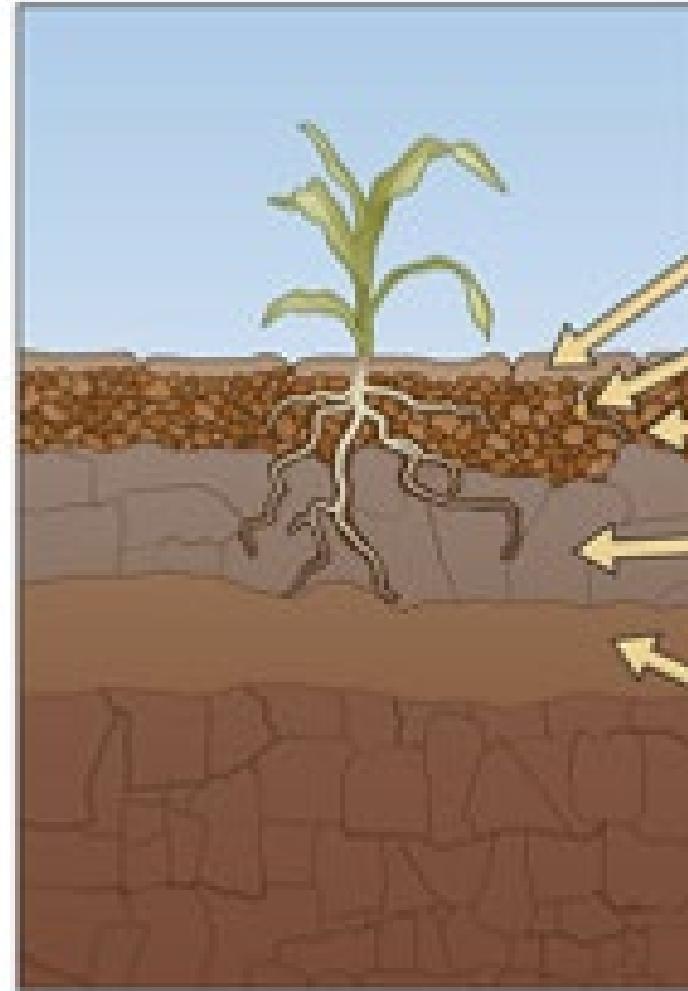
**Policy 11-B:**  
Promote conservation  
farming practices.



Porous (loose-fitting) crumbs and blocks



a) good soil structure



b) compacted soil

Surface Crust

Germinating Seed

Tightly packed crumbs

Large blocks with few cracks

Subsoil compaction

## 4.7 DECOMMISSIONING PLAN

A Decommissioning Plan is included in **Exhibit E** and it will ensure the Commercial Solar Energy System elements will be properly removed after the Commercial Solar Energy System is inoperable for twelve (12) consecutive months. The Decommissioning Plan will be in accordance with both the Bartholomew County Zoning Ordinance 6.10.D. The Decommissioning Plan outlines a strategy for the removal of all surface and subsurface physical improvements including but not limited to all solar arrays, electric systems and components, buildings, cabling, security barriers, interior drives, gravel areas, foundations, pilings, and fences. The Decommissioning Plan also includes the restoration of the surface grade and soil to pre-construction conditions and implementation of groundcover for erosion control. The combination of the native grasses and pollinator friendly seed mix established during the Project life and temporary rest of the soils from agricultural planting will promote soil restoration and more productive farmland after decommissioning.

Prior to commercial operation, the Applicant shall provide Bartholomew County with a decommissioning bond to ensure proper decommissioning at the end of the Project life.

## 4.9 STANDARDS AND CODES

Per Bartholomew County Zoning Ordinance 6.10.A.6, all on-site power and communication cables must be placed underground to a depth of 36" below grade unless otherwise expressly approved as part of the



**NO**  
**INDUSTRIAL**  
**SOLAR PLANTS**  
**ON FARMLAND**





# Youth

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DENA HASSLER



# Home Values

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JEFF FINKE, NATE ROSENBURG, &  
JEFF HILYCORD (LOCAL REALTORS)



# Utility–Scale Solar Installation

## Conditional Use Criteria:

**3. ... “Is there reason to believe that the conditional use will cause harm to neighboring property values?”**

**Amenities** – *features of a home that add value to property*



**Disamenities** – *features of a home that negatively impact the value of a property*





# “Good Neighbor Agreements”

2020 – Western Mustang Neighbor Agreement – **Monetary offer of \$17,000 to adjacent property owners** to the proposed solar facility.

2020 Lighthouse BP Neighbor Agreement – **Monetary offer of \$5000 - \$50,000 to adjacent property owners** depending on proximity to the solar facility.

2021 Vesper Energy Neighbor Agreement – **monetary offer ranging from \$7000 - \$25,000** depending on distance of property to solar farm payable in a lump sum at notice to proceed with construction.

2021 Posey Solar, LLC Neighbor Agreement – monetary offer equal to **10% of appraised value for neighbors within 300 feet of the solar field**, plus an annual \$1000 payment (\$35,000 cap for project life)



Exhibit L: Property  
Value Impact Study  
(By Others)



**Kirkland  
Appraisals**

Richard C. Kirkland, Jr., MAI  
3540 Layton Ridge Drive  
Apex, North Carolina 27539  
Phone (919) 771-2202  
[rich.kirkland@att.net](mailto:rich.kirkland@att.net)  
[www.kirklandappraisals.com](http://www.kirklandappraisals.com)

**“I often work with attorneys for Expert Witness testimony for  
obtaining Special Use Permits....”**

Kirkland Appraisers website

**Exhibit L - Pg 26 – Lawrence Berkley National Lab, March 2023**

“The conclusion found a 1.5% impact within 1 mile of a solar farm as compared to homes 2-4 miles from solar farms.”

**Lawrence Berkley National Lab, March 2023**

“For homes within 0.5 miles of a Large Scale Photovoltaic Project (LSPVP) compared to homes 2-4 miles away, we found a **reduction in home sales prices in MN (4% reduction), NC (5.8%) and NJ (5.6%)...**”

Study by Elmallah, Hoen, Fujita, Robson, Bunner

**5.13% avg. reduction in value**



# Utility–Scale Solar Installation

## Conditional Use Criteria:

3. ... “Is there reason to believe that the conditional use will cause harm to neighboring property values?”

**YES!**

“Our results suggest that there are **adverse property value impacts** of Large Scale Photovoltaic Project (LSPVP) construction for **homes very close** to a LSPVP and those **predominantly in rural agricultural settings surrounded by large projects.**”

“our overall heterogeneity analysis suggests that **adverse impacts** of LSPVP development **are present specifically in rural areas, where LSPVP displaces agricultural land uses, and where LSPVP installations are larger.**”

Exhibit L - p25 – Georgia Institute of Technology, Oct 2020

Utility-Scale Solar Farms and Agricultural Land Values

Nino Abashidze - Post Doctoral Research

“there are no direct affects of solar farms on nearby agricultural land values”

Georgia Institute of Technology 2019

Essays on Economic and Health Effects of Land Use Externalities

Solar Farms and Residential Property Values in North Carolina

Nino Abashidze – Doctoral Thesis (15,935 transactions)

“The primary analysis indicates that the **construction of a solar farm decreases property values of houses located within one mile of a solar farm by 8.7 percent** when the street network measure of distance to a solar farm is employed. **The effect is larger in magnitude (12.5 percent) when only houses within a half-mile of a solar farm are analyzed.**”

Exhibit L – pgs 112-113

“Dr Randall Bell, MAI, PhD, and author of the book Real Estate Damages, Third Edition, on page 146 “Views of bodies of water, city lights, natural settings, parks, golf courses, and other amenities are considered desirable features, particularly for residential properties.....

**The market often assigns significant value to desirable views irrespective of whether or not such views are protected by law.”**



# Utility–Scale Solar Installation

## Conditional Use Criteria:

3. ... “Is there reason to believe that the conditional use will cause harm to neighboring property values?”

**YES!**



Energy Economics 122 (2023) 106699



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Contents lists available at [ScienceDirect](#)

Energy Economics

journal homepage: [www.elsevier.com/locate/eneeco](http://www.elsevier.com/locate/eneeco)



## House of the rising sun: The effect of utility-scale solar arrays on housing prices

Vasundhara Gaur, Corey Lang <sup>\*</sup>

*214 Coastal Institute, 1 Greenhouse Rd., University of Rhode Island, Kingston, RI 02881, United States of America*





Pg 2 – House of the rising sun: The effect of utility-scale solar arrays on housing prices. (2023 - 107,291 transactions studied)

“We posit that solar arrays on farm and forest lands (“greenfields”) cause greater externalities, given the combination of solar-specific dis-amenities and loss of open space amenities. Further, rural areas may be more impacted if industrial solar arrays are incongruent with highly valued rural character.”

“For properties lying in the vicinity of solar installations in rural locations, the decrease in value is between 2.5% to 5.8% post solar installation construction.”

“The market often assigns significant value to desirable views irrespective of whether or not such views are protected by law.”

Dr. Randall Bell, MAI, PhD

“our overall heterogeneity analysis suggests that adverse impacts of LSVP development are present specifically in rural areas, where LSPVP displaces agricultural land uses, and where LSPVP installations are larger.”

Lawrence Berkley National Lab Study

**University of Rhode Island – (2023)**

**(107,291 transactions)**

Corey Lang & Vasundhara Gaur

**-2.5 to -5.8%**

**University of North Carolina - (2019)**

**(15,939 transactions)**

Nino Abashidze

Essays on Economic and Health Effects of Land Use Externalities

**-8.7%** - within 1 mile (5280 ft.)

**-12.5%** - within ½ mile (2640 ft.)



## Exhibit L – Page 11

### 1 Mile Radius

Average Home Price - 2028

\$359,701

2.5% - \$8992.53

5.8% - \$20,862.65

8.7% - \$31,293.98

12.5% - \$44,962.62

3. ... “Is there reason to believe that the conditional use will cause harm to neighboring property values?”

**YES!**





# Historical Homes

---

STEPHANIE MURPHY

**This Application Does Not  
Meet Criteria 1, 3 & 4**

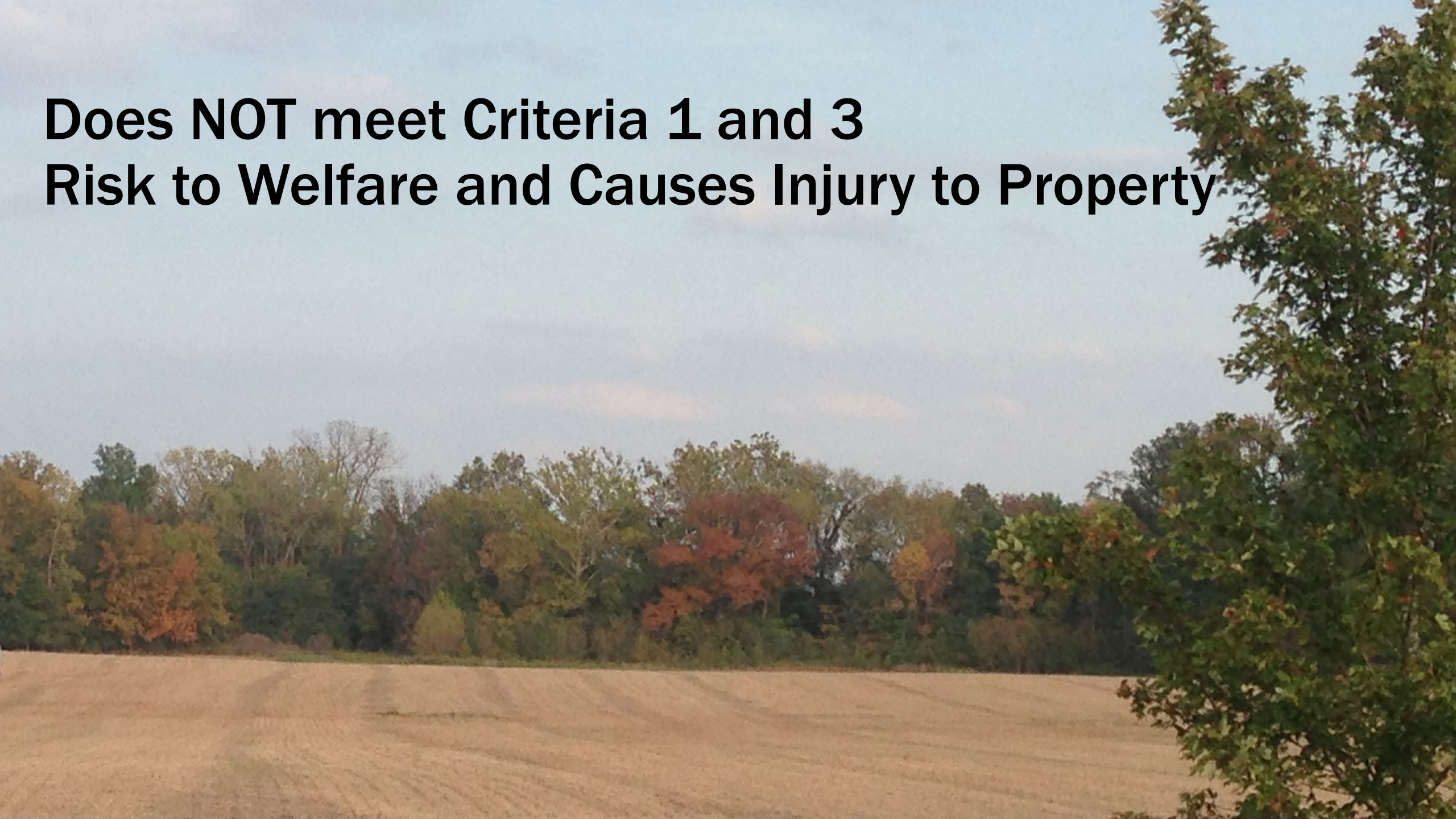
# Does NOT meet Criteria 1 Vulnerable to Weather

---





**Does NOT meet Criteria 1 and 3  
Risk to Welfare and Causes Injury to Property**



# Does NOT meet Criteria 1 and 3 Risk to Welfare and Causes Injury to Property

---

Indiana Planning Association Guide  
refers to *Land Use Law*

**“aesthetics alone is a legitimate governmental purpose in land use regulation.”**

# Does NOT meet Criteria 4 Fails to preserve the Character and Culture

---



“Make land use decisions that protect...historic resources” – *Comprehensive Plan*

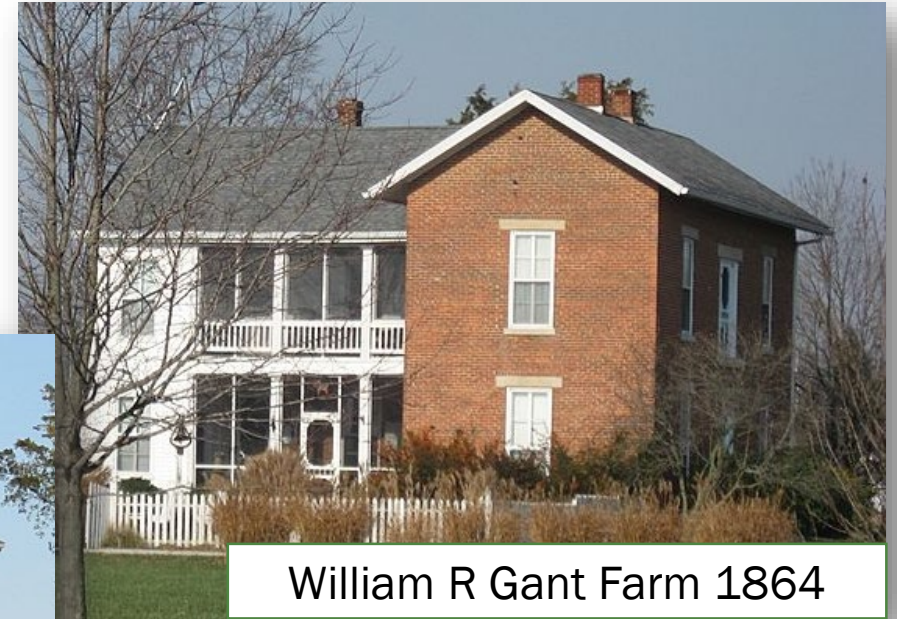
Does NOT meet  
Criteria 4

Fails to preserve  
the Character  
and Culture

“Make land use  
decisions that  
protect...historic  
resources” –  
*Comprehensive Plan*



Newsom-Marr Home 1864



William R Gant Farm 1864



ELnora Daugherty Farm 1892

# This Solar Industrial Plant Does NOT meet Criteria

---

- Creates a health, safety and welfare risk
- Causes injury to property
- Fails to protect historic homes



# Underground Tile Damage

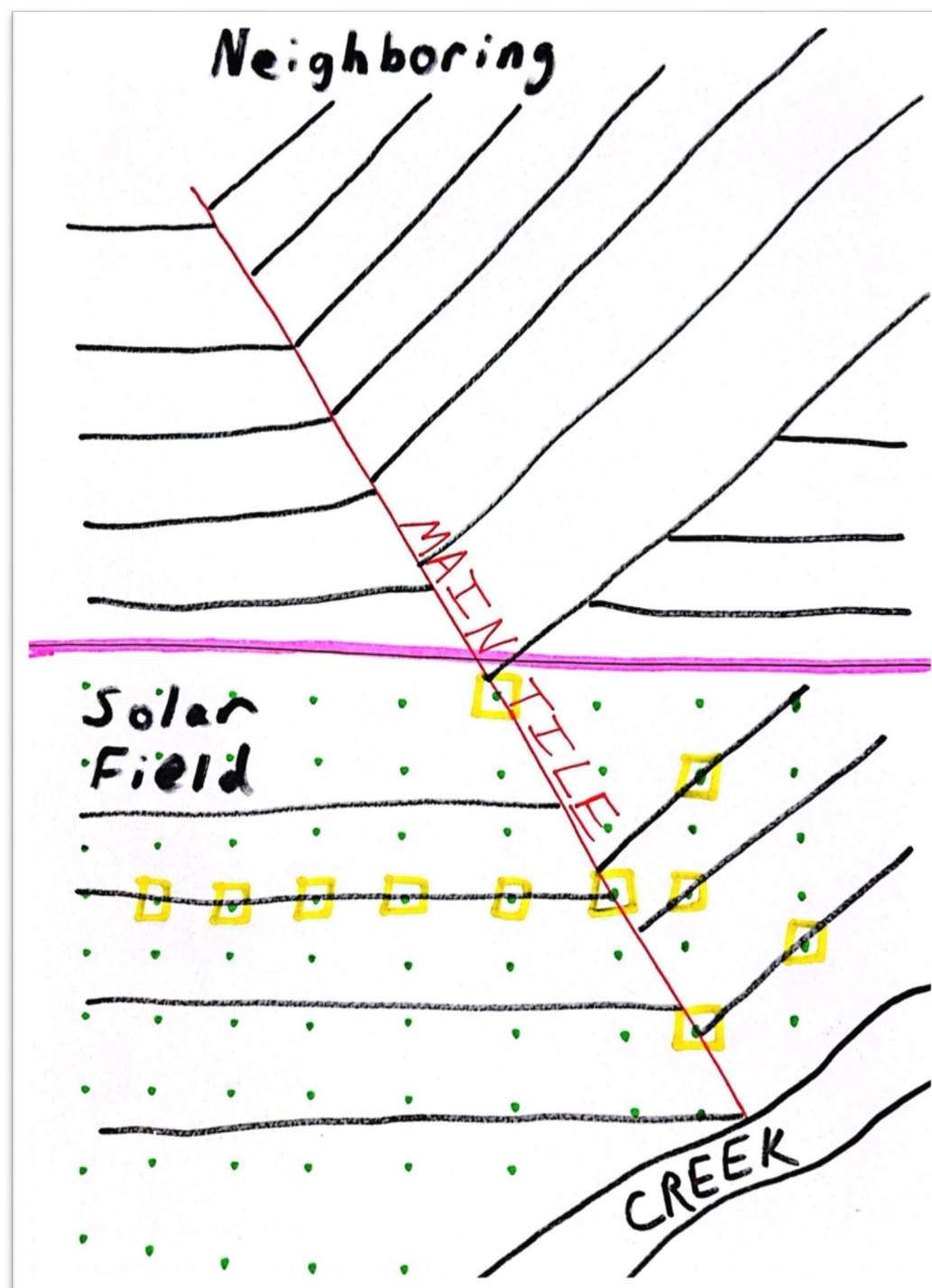
---

GEORGE HASSFEGER





- Pink – Property Line
- Green – Panel Post
- Red – Main Tile
- Black – Lateral Tile
- Yellow – Tile Damaged



## II. GENERAL LAND USE PRINCIPLES

Make land use decisions that protect and improve community resources and the environment. Land use decisions and construction planning should consider impacts on county resources including, but not limited to, drainage systems, environmentally sensitive areas, surface and groundwater resources.....



# Drainage Concerns

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MARLENE DOW

Rainwater Runoff  
Soil Erosion  
Changes in Natural Drainage

Marlene Dow  
2925 South 300 East  
Columbus, IN 47201

**Conditional Use #3 Will not permanently injure other properties or uses in the same zoning district and vicinity. Carina Solar will not meet Conditional Use Criteria # 3**

Neighboring landowners are concerned that the solar fields sitting higher to the west and south will drain water runoff through road culverts across their land and prevent full use of their land.

Older drainage tiles (on neighbor properties) may be injured from additional volume of water runoff.



Carina Solar Summary concerning Hydrologic Impacts of Utility Scale Solar Facilities:  
Their summary stated: “the solar panels themselves have little to no impact on runoff volumes or rates.”

But the abstract states :

**“It is possible that the kinetic energy of the water draining from the edge of the panels could cause erosion of the soil below the panels and at the spacer area.”**

Spacer area is between the rows of panels and is used by maintenance vehicles.

Erosion increases if the ground cover is gravel or bare ground due to design, lack of maintenance, grass becoming patchy from panel shading or traveled with vehicles.



# Rainwater Run Off

Solar panels have an impact on rainwater runoff and erosion.

The water runoff from the drip panel edge could be 10 times greater speed than that of rainfall.

This concentrated flow causes erosion of vegetative surfaces and loss of topsoil at the base of the solar panel or at the spacers between the rows of solar panels.

**Example of erosion  
at Tripton Park in North Vernon**







- Sandy Soil has a Runoff Coefficient of 0.25 (or less)
- Glass is 0.95 (or higher)
- Net Runoff Coefficient For a Solar Field is roughly = 0.81

Calculations:

Solar panel size is 17.55 sq-ft (65" x 39")

Estimated solar panel application for utility scale array is 2000 panels per acre

$17.55 \text{ sq-ft} \times 2000 = 35100 \text{ sq-ft}$  ( 1 acre = 43560 sq-ft)

$35100/43560 = 80\%$  coverage

80% of .95 (glass) plus 20% of .25 (soil) = 100% at 0.81 net runoff per acre

**$(.81-.25)/.25 = 224\%$  increase in runoff**

Hydrologists Use a “**Water Runoff Coefficient**” to Determine the Capacity for the Soil Surface to Retain and Absorb Rainwater

## Disturbing Land and Natural Drainage

- Excavation destroys natural drainage channels that takes 100s of years to create
- Compaction during construction will limit water infiltration for years
- Removal of topsoil during construction will take approximately 500 years for 2.5 cm layer of fertile topsoil to form under agricultural conditions
- Letting the soil “rest” in a monoculture environment will NOT improve the soil productivity nor help the natural cycle of ecological soil growth

## We are NOT against Solar

“We are in favor of projects to repurpose previously disturbed land into renewable energy sites to maximize benefits for climate, conservation, and local communities.”



# Wildlife Protection

---

DOUG ROXBURY

**FAILURE TO  
MEET CRITERIA  
3 & 4**



Doug Roxbury

5501 S 250 E

Columbus

- I request that the board reject the application, because it does not meet criteria 3 & 4
  - Criteria 3- Loss of availability to enjoy property and wildlife- Bald Eagles
  - Criteria 4- The proposed solar project will change the character of the area by damaging the habitat of local the Bald Eagles

# Exhibit D of the Application

- Page 15 of Exhibit D clearly states that there are no Bald or Golden Eagles in the area



- To the right is a Bald Eagle perched in my backyard on S 250 E

## Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

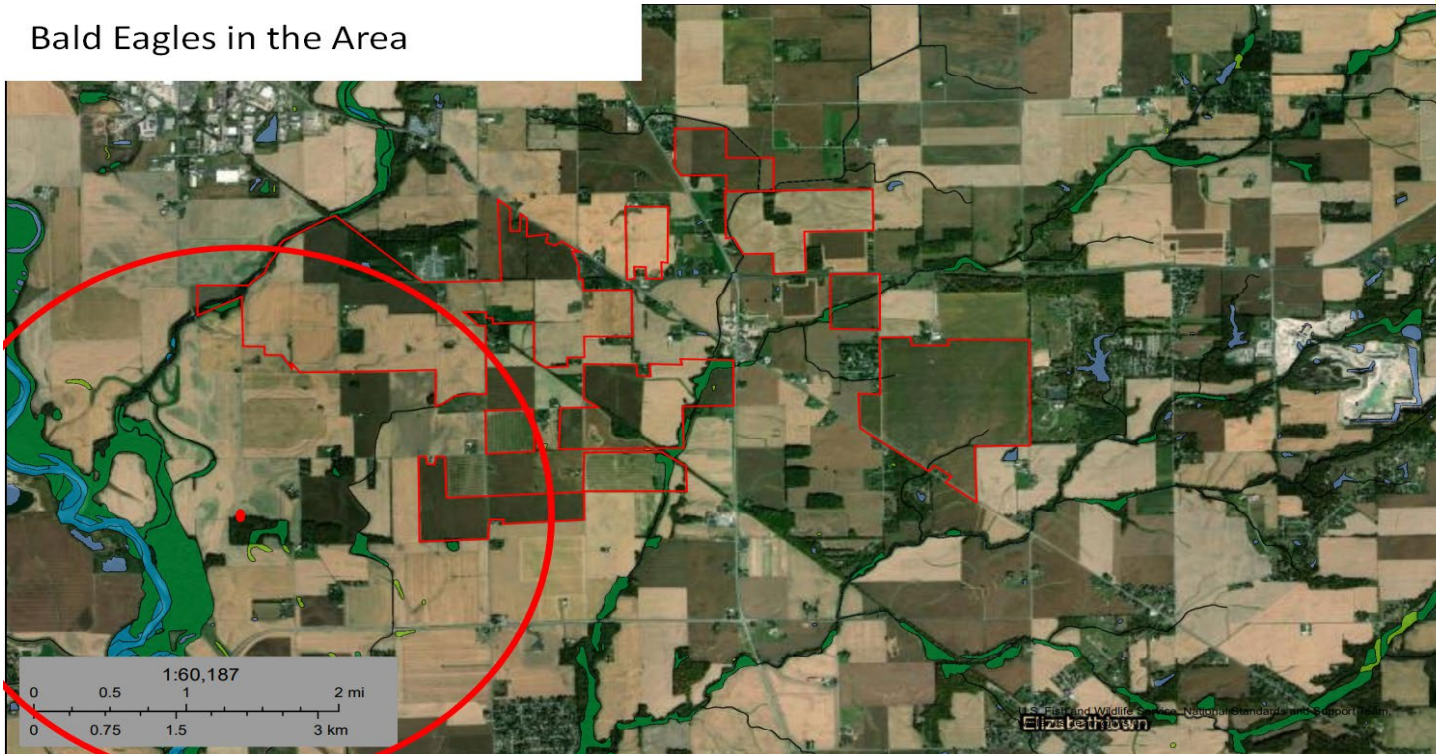
- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds  
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds  
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>



# Additional Bald Eagles Sightings in the Area

- Bald Eagles in field South of the corner of 150 E & 300 S
- Active Eagle nest South of the corner of 150 E & 300 S

Bald Eagles in the Area



U.S. Fish and Wildlife Service (Service) protocol for data collection to support an eagle incidental take permit application recommends surveys for occupied nesting territories be conducted potentially out to 10 miles around the perimeter of the area where take may occur (U.S. Fish and Wildlife Service 2013). The purpose of these surveys is to identify nesting pairs of eagles that might be disturbed or subject to potential lethal take by the activity associated with the permit request. Although the existing protocol recommends use of local information to inform more appropriate distances for surveys in areas of high eagle nesting density, application of this guidance in practice has proven difficult. In the years since the guidance was developed, the Service and collaborators have deployed satellite transmitters on over 700 golden eagles, many of which subsequently bred. The data from satellite-tagged breeding golden eagles provides new information on the ranging behavior of golden eagles around their nest sites. These data provide new quantitative information about the distance from nests at which risk of take becomes unlikely.

The Service conducted a preliminary analysis of satellite telemetry data for 101 breeding adult golden eagles from across North America to determine whether the existing nest survey guidance was appropriate, or warranted modification. The data set includes information from 55 breeding males and 46 breeding female eagles, 87 of which were tracked across >1 breeding season. Data from eagles that were not associated with breeding territories was excluded from the analysis. We computed distances between each eagle location in the data set and the geometric center of the individual's locations (likely the approximate nest location). We removed a few additional outlier locations, those in the 99<sup>th</sup> quantile of the distribution.

Based on the untransformed data, territorial breeding golden eagles appear to seldom range further than 3 km from their territory centers (Figure 1), and this pattern was evident for both males and females in nearly all geographic regions examined (Table 1). This is similar to the conclusion reached by Watson et al. (2014) in a more localized study of ranging behavior of satellite-tagged golden eagles. Available data from the literature suggest that bald eagle ranging behavior around nests is comparable, if not more constrained (Watson 2002, Smith et al. 2017).

Moreover, recent studies have shown that bald eagle ranging behavior around communal roosts such that a buffer distance of 2 miles (~3.2 km) would provide substantial protection for roosting eagles, as well as those moving into and out of roosts (Watts and Turrin 2017).

# Bald Eagles are

## Protected

Eagles are protected under- The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d)

- This Act prohibits anyone without permit issued by the Secretary of the Interior, from "taking" bald or golden eagles
- The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."
- From the U.S. Fish and Wildlife Service documents- Updated Eagle Nest Survey Protocol it states "recent studies have shown that bald eagle ranging behavior around communal roosts is such that a buffer distance of 2-miles would provide substantial protection for roosting eagles, as well as those moving into and out of roosts."
- Additional information can be found from the U.S. Fish and Wildlife Service in the document- Eagle Conservation Plan Guidance where it describes disturbances in the Risks to Eagles section during energy development and infrastructure projects such as this solar project in the
- As shown on the next slide, the solar installation violates this 2-mile buffer and will disturb the eagle habitat



# In summary

- Based on the information I presented, Carina's application fails to meet Criteria 3 and 4 because it will disturb the eagle's habitat
  - Criteria 3- Loss of availability to enjoy property and wildlife
  - Criteria 4- The proposed solar project will change the character of the area by risking the habitat of the Bald Eagles

THANK YOU

Doug Roxbury

5501 S 250 E

Columbus



# Sell to Public Utility Concerns

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ADAM WADE

# Adam Wade

6630 E 350 N  
Columbus, IN 47203

I have been approached by Tenaska and  
declined their offers.

I am not against solar technology.



## Conditional use request #2. Building, residence, and nonparticipating property setbacks.

- The land lease proposal we were presented had transfer of lease language in the contract.
- If the proposed Carina CSES lease is transferred to a public utility company, public utilities fall under state guidelines not local ordinances.
- This would mean that setbacks established in conditional use request #2 would not apply after the lease is transferred to public utility.
- We have been contacted repeatedly about leasing our land. Developer representatives came to our home to talk about leasing our land. The developer representatives or engineer were not able to answer technical questions or concerns we had.

Quietly - Have a show of hands of people in the audience who are against these type of projects?

Thank you for your time.





# Lost Acreage

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JENI SMITH



## Why the Applicant fails to Meet Criteria #1 & #4

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Jeni Smith - 4875 N CR 700 E, Hope

Bartholomew County Comprehensive Plan Element II - Land Use Plan states:

### II. GENERAL LAND USE PRINCIPLES



## **PRESERVE PRODUCTIVE FARMLAND FOR FARMING**



The committee found that over half of the land in county planning jurisdiction is prime farmland according to a definition developed by the committee. Farming is an important part of Bartholomew County's history and economy. Farmland preservation is becoming a greater concern in the county, and in the state overall, as more and more farmland is lost to development.

**The committee found that the county should develop a plan for preserving prime farmland.**

□



## Economic Impact

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**Carina Solar's Economic Analysis prepared by 3 sustainable economists reports a total of 261,760 Total Acres / 409 Square Miles in Bartholomew County.**

**Carina's Application highlights the loss of Farmland in Bartholomew County since 2012.**

Year	Total Crop Acres
*2012	171,601
*2017	160,437
**2023 (August)	148,227 (local USDA office)

\*Carina's research  
\*\*Local USDA Reported Acres 8/23



## Key Points

---

**Approving this conditional use application adds an additional 3,686 Acres!**

**Carina Project - 1886 Acres of Loss**

**Tenaska Project - 1800 Acres of Loss**

**These projects, if approved would bring the total of lost acres since 2012 to 27,060 Acres which does not include any other “traditionally approved developments.”**

**27,060 Acres account for 16% of 2012's total county crop acres available.**

\*This does not include future solar projects in Jonesville and Hope or the add on acres once a project is approved.



**There is no limit to the amount of acres that can be added to these applications.**

**CAN WE ECONOMICALLY AFFORD TO TAKE THESE ACRES OUT OF PRODUCTION FOR THE NEXT 30-50 YEARS?**





## Key Points

---

Here is a list of projects from the PRIOR 15 Months that adds to the total Acreage Loss through Traditional Development Expansion.

1. Stadler Farm at Garden City for Columbus Regional Hospital - **765 Acres**
2. Lowell Rd At I-65 City Annexation - **79 Acres**
3. Current Annexation Proposal At State St, 250E and Hwy 46E - **288 Acres**
4. Taylorsville Industrial Developments - **145 Acres**

**Total Traditional Commercial Developments Locally Beyond  
Commercial Solar Facilities =**



**1277 Additional Acres  
Lost!**





## Summary

---

**Based on Criteria #1, this added non-traditional loss of acreage**

**“IS injurious to the general welfare of our community”**

and reduces future economic development monies by directly impacting these AG industries:

- **Farmers**
- **Fertilizer Sales / Applicators**
- **Truck Sales / Repair**
- **Grain Handling / Transport**
- **Grain Elevator Operators**
- **Seed & Grain Sales**
- **Ag Equipment Sales / Repair / Support**
- **Grain Bin Sales / Installation**
- **Tire Repair**
- **Summer Employment for Youth**
- **FFA**



Carina Solar's Application **DOES NOT** comply with the required

---

**Criteria #1 - because it “is injurious to the general welfare of our community”**

by reducing the number of acres of prime farm land in production, impacting the local industries that rely on the Ag preferred acres for their livelihood.

Carina Solar's Application **DOES NOT** comply with the required

**Criteria #4 - because it is not “Consistent with the character of the zoning district in which it is located and the recommendations of the Comprehensive Plan.” Which clearly states**

- *“to preserve productive farmland for farming.”*
- *“provide a small town atmosphere.”*
- *Maintain “Farm land, open space, and recreational areas.”*
- *Maintain “Community Appearance.”*



Please Deny this Conditional Use Application!

---

Why would we

Trade this...



...for that



# Economics

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TIM MCNEALY & CHRIS KIMBERLING

Bartholomew County  
Production Agriculture's  
Local Economic Development

Tim McNealy

Resides: 912 5<sup>th</sup> Street, Columbus IN

Own and Farm 159 Acres in NE Clay Twp

Masters in Agricultural Education w/Minors in

Ag Engineering and Ag Economics

6,301 Ac Targeted Solar Lease Contracts

+341 Ac Electrical Transmission Easements

1,886 Ac Carina Conditional Use Application

# Displacing Local Farmer

- 277 Acres is Average Indiana Farmer's Farm
- 47% of Carina's Footprint (886 Ac) Tenant Farmed
- $886 \text{ Ac} / 277 = 3\text{-}4$  Farmers Displaced



**NOPE, GRANDPA & DADDY  
LEASED MY PRIVILEGE AWAY!**





# Economic Development Revenue Loss

Gross Revenue/Ac x Total Acres x 40 yrs x  
Lt. Gov. Multiplier  
x % Spent Local

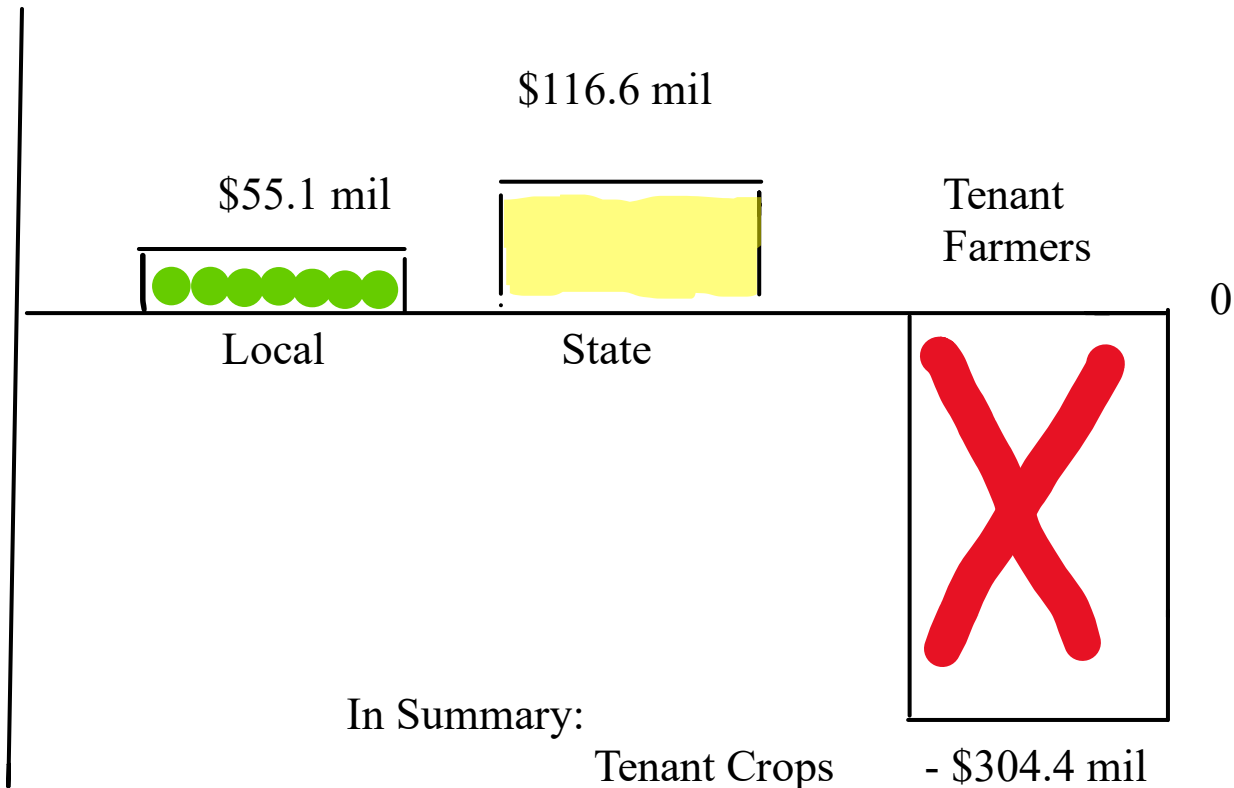
$$\$1,201/\text{Ac} \times 1,886\text{Ac} \times \underline{40 \text{ yrs}} = \$90,603,440$$

$$\$90.6 \times 4 = \$362.4 \text{ mil}$$

$$\$362.4 \text{ mil} \times 84\% = \$304.4 \text{ mil}$$

Note: 40 yr operation each Tenant Farmer  
Family looses \$332,677 Gross  
Revenue/Year

**CARINA SOLAR**  
**vs**  
**PRODUCTION AGRICULTURE**



In Summary:

Tenant Crops	- \$304.4 mil
Owner Crops	- <u>\$340.9 mil</u>
Total Crop L.E.D.	- <b>\$645.3 mil</b>

Injurious to all Local Retailers  
and  
Local Tenant Farmers

Fails Criteria #1  
and

Is “injurious to the General Welfare”  
of many in Bartholomew County



North District

Central District

South District

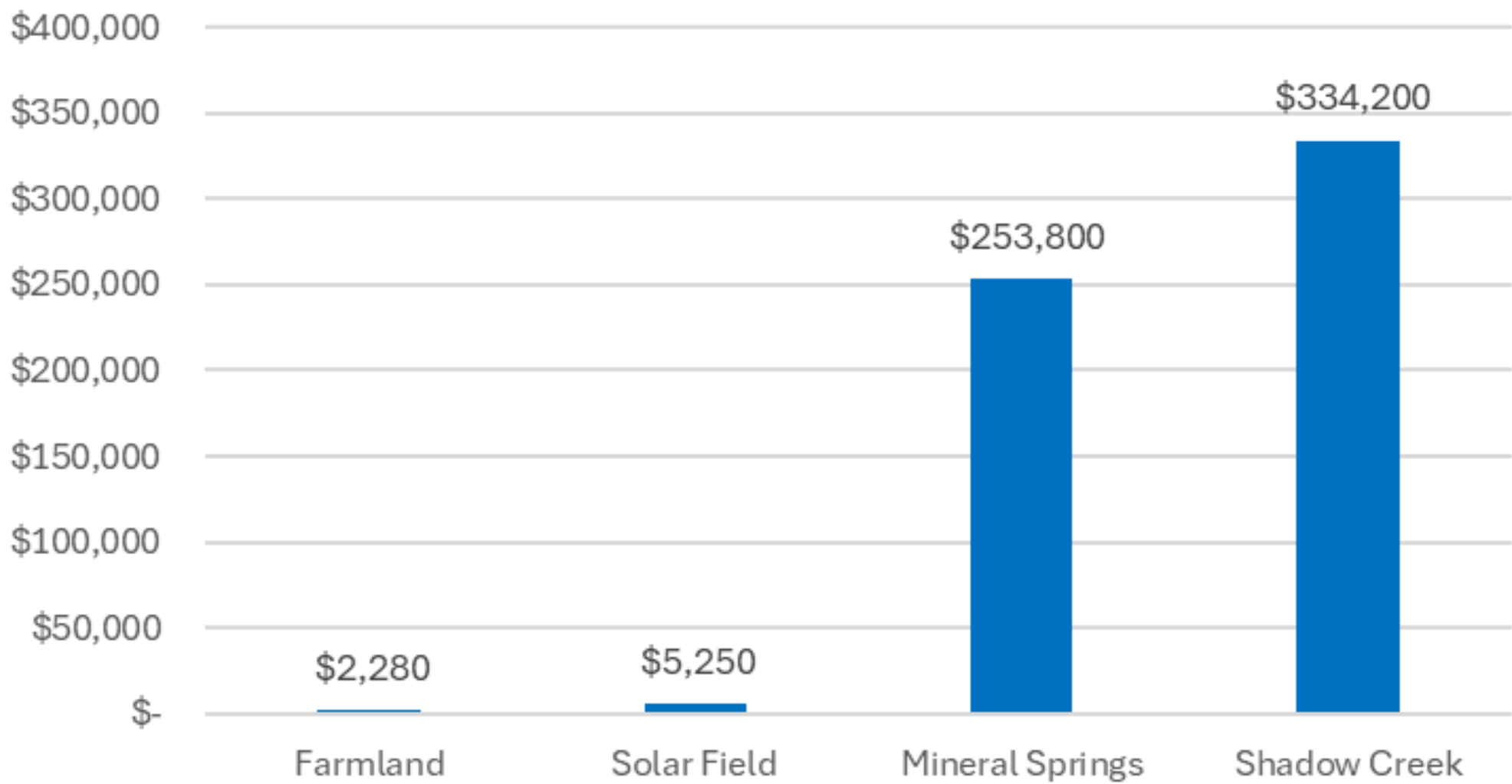
\$5,250 Ac

Indiana Governor Holcomb set this rate April 29, 2021. Solar Equipment is considered "Real Property" and can NOT be assessed separately as a Home or Building per Code 6-1. 1-8-24 of HEA 1348 . Usually, only Land is considered Real Property with Buildings and Homes considered Personal Property. There are 3 Assessment Districts For Solar Fields in Indiana: North 1/3 is \$12,870/Acre, Central 1/3 is \$13,000/Acre and **South is \$5,250/Acre.**

## ASSESSMENT COMPARISON

<u>Location</u>	<u>Per Lot</u>	<u>Lots/Acre</u>	<u>Assessed Value</u>	<u>Value Times Farmland</u>
Farmland local	-	1	\$2,280/Acre	1X
Solar Field	-	1	\$5,250/Acre	2.3X
Mineral Springs	\$42,300	6	\$253,800/Acre	111X
Shadow Creek	\$55,700	6	\$334,200/Acre	147X

# Assessed \$ Acre



**Summary** - Only 12.8 (1,886 divided by 147) New Homes with an avg value of \$334,200/home will need to be built in Carina's Footprint to equal the difference in Property Taxes collected.

**Question** - Is Bartholomew County willing to lock up 1,886 acres for 40-50 years for the added tax revenue that will be locked in at a much lower rate while all other properties will progressively be taxed at a much higher rate ???





# Decommissioning

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JUSTIN NOLTING

# Decommissioning of CSES

# Decommissioning Estimate?

## Decommissioning Cost Estimate and Bonding

An engineer's opinion of probable construction cost will be prepared as part of this decommissioning plan. Exhibit A will summarize probable costs associated with decommissioning exclusive of salvage values. Exhibit B will summarize probable costs associated with trucking panels to approved recycling facilities.

Bartholomew County Code requires Carina Solar, LLC to provide a faithful performance bond as a financial guarantee for proper decommissioning. This bond is separate from, and in addition to, performance bonding submitted for permitting. Furthermore, Carina Solar, LLC will be required to submit detailed engineering plans at the time of decommissioning, and obtain construction permits as required by appropriate authorities.

Industry standard prices for removal costs (labor, material and equipment) were determined using RSMeans cost data. Removal cost includes materials, contractor installation/demolition, mobilization and demobilization, overhead and profit, performance bonding, contingency, and engineering plans and permitting.

**Total probable cost of decommissioning is estimated to be TBD.**

# Duke Energy Decommissioning Cost Estimate Study

- Study performed by Burns and McDonnell Engineering Company, Inc. of Kansas City, Missouri.
- The purpose of the study was to review the facilities and to make a recommendation to Duke Energy Progress to conduct a Decommissioning Cost Study for power generation assets in North Carolina and South Carolina.
- The study compared decommissioning costs for twenty (20) sites, of which, four (4) were solar facilities.
- Using data from study, a 100 MW facility would cost \$15,200,000.00 to decommission.

# Who is Responsible for Decommissioning?

- Taxpayers and landowners are protected against decommissioning costs.

# Property Owner is Responsible Decommissioning

## Party Responsible for Decommissioning

The Project Company is responsible for this decommissioning, provided however that the Project Company may contract with a third-party to perform the decommissioning on its behalf. **Nothing in this plan relieves any obligation that the real estate property owner may have to remove the Facility as**

**Kimley»»Horn**

*Page 8*

**outlined in the Conditional Use Permit in the event the operator of the Facility does not fulfill this obligation.**

# What if Becomes Reality

- Mechanic's lien filed on Spencer County Property owners
- Grandview Solar failed to pay \$9,065,412.97 to contractors working on solar development.



# Conditional Use Criteria #1

- There is no guarantee that local taxpayers will not have to cover decommissioning costs. What is guaranteed is that the CSES will be decommissioned.
- Putting Bartholomew County taxpayers at risk for covering unfulfilled obligations of Solar Operator is detrimental to the general welfare of the Community and does not meet criteria #1.
- Please deny this application.



# Solar Panel Waste

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DAN SCHROER

# Solar Panel Waste

Criteria 1- ..will not be injurious to the public health, safety, and general welfare of the community

Dan Schroer

3950 Highview Way

Farm Owner - SE Columbus Bordering Base Rd

Manager of Industrial Wastes – Reeves/Reliance/Master

# Will Proposed Panels Become Hazardous Waste?

Carina Project Description - 2.5 – Pg 9

- There are no toxic substances in the panels. The project will incorporate Tier 1 silicon-based PV panels, which have been analyzed as follows by **North Carolina State University**:



## North Carolina State University – Carina Schedule K

- risks of site contamination are much less than for most other industrial uses because PV technologies employ few toxic chemicals and those used are used in very small quantities. Schedule K-pg 3
- solar energy systems may contain small amounts of toxic materials, but these materials do not endanger public health.
- The other minor components of the PV cell are also generally benign; however, some contain lead, which is a human toxicant that is particularly harmful to young children.
- the glass frit and/or the solder may contain trace amounts of other metals, potentially including some with human toxicity such as cadmium.
- As with many electronic industries, the solder in silicon PV panels has historically been a leadbased solder, often 36% lead...
- Some solar modules use cadmium telluride (CdTe). Cadmium compounds are toxic,...
- Multiple sources report that most modern PV panels ... pass the TCLP test. **Not All!** Djs



A-1

NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WASTE MANAGEMENT  
HAZARDOUS WASTE SECTION

Q: What if you know the type of panel? Can you tell if it's hazardous just by knowing what type of solar panel you have?

A: Just knowing the type of solar panel is not enough information to make a waste determination. In other words, **it is difficult to say if it is hazardous or not without performing testing**



- Some solar panels are considered hazardous waste, and some are not, even within the same model and manufacturer.
- According to RCRA, the way to determine if a PV panel is classified as hazardous waste is the Toxic Characteristic Leaching Procedure (TCLP) test

# Bartholomew County



- Landfill – Not Allowed
- Recycling Center – Not Allowed
  - Refers Panel Waste to Green Wave
- Green Wave - **“Not on their list”** of accepted wastes





# How Are Others Handling Solar Waste?

- **California**

- Classifies solar panels as hazardous waste.
- Promoting laws requiring the owner/operator as responsible (Manufacture thru disposal)

- **State of Washington**

- will require solar panel manufacturers to finance end-of-life recycling by 2025.

- **EU**

- Requires all producers of panels for countries in the EU to finance end-of-life collection and recycling.

# Harvard Business Review

## The Dark Side Of Solar

June 2021

- The [International Renewable Energy Agency \(IRENA\)](#)'s official [projections](#) assert that “large amounts of annual waste are anticipated by the early 2030s”
- ...push legislation now rather than later is to ensure that the responsibility for recycling the imminent first wave of waste is shared fairly by makers of the equipment concerned. If legislation comes too late, the remaining players may be forced to deal with the expensive mess The cost of creating end-of-life infrastructure for solar, therefore, is an inescapable part of the R&D package that goes along with supporting green energy.
- sustainable technology can least afford to be shortsighted about the waste it creates. A [strategy for entering the circular economy](#) is absolutely essential — and the sooner, the better.

# Conclusion...

- Criteria 1- ..will not be injurious to the public health, safety, and general welfare of the community
  - Testing for toxicity is not identified to provided objective identity
  - Unidentified waste stream classification will contribute to Improper handling and potential contamination
  - Potential for significant cost impact (Bond Underestimated) if Recycling is not a sustainable solution
  - obligation that the real estate property owner may have to remove the Facility as Page 8 outlined in the Conditional Use Permit in the event the operator of the Facility does not fulfill this obligation



# Force Majeure

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CAITLIN MURPHY

# A Solar Industrial Plant is a Health and Safety Risk

Does NOT Meet Criteria 1

The approval of the conditional use will be injurious to the public health, safety, and general welfare of the community.

Department of Energy  
Lawrence Berkeley National Laboratory  
2021

**“key weaknesses in solar (PV) systems due to weather exposure.”**

**“very serious life-safety issues”**

# Federal Energy Management

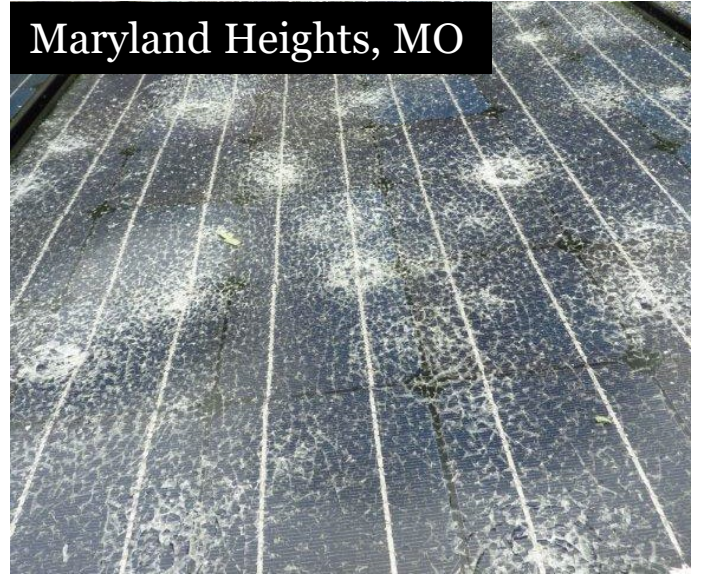
“basic hail certification is **not** sufficient.”

Hail certified panels are only tested with 1-inch ice balls at 51 mph.



# Certified Panels Damaged

Maryland Heights, MO



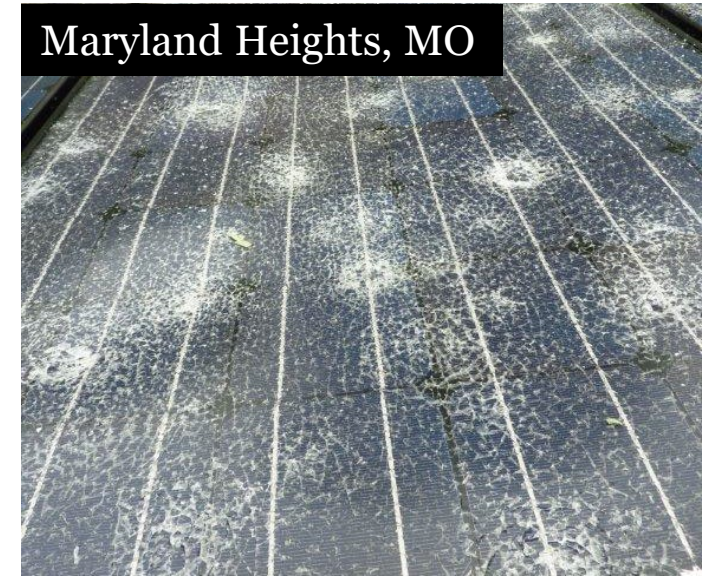
Scottsbluff, Nebraska



Fort Carson, CO

“not even the toughest glass can withstand larger chunks of hail”

Maryland Heights, MO



Scottsbluff, Nebraska



Fort Carson, CO

# Surrounding counties reported hail much larger than 1 inch!



# NOAA Storm Center Map

Severe (Pink)  
Locations exposed to  
equivalent hail size  $>$   
1.75 in. (44mm) and  $\leq$   
2 in. (51mm)

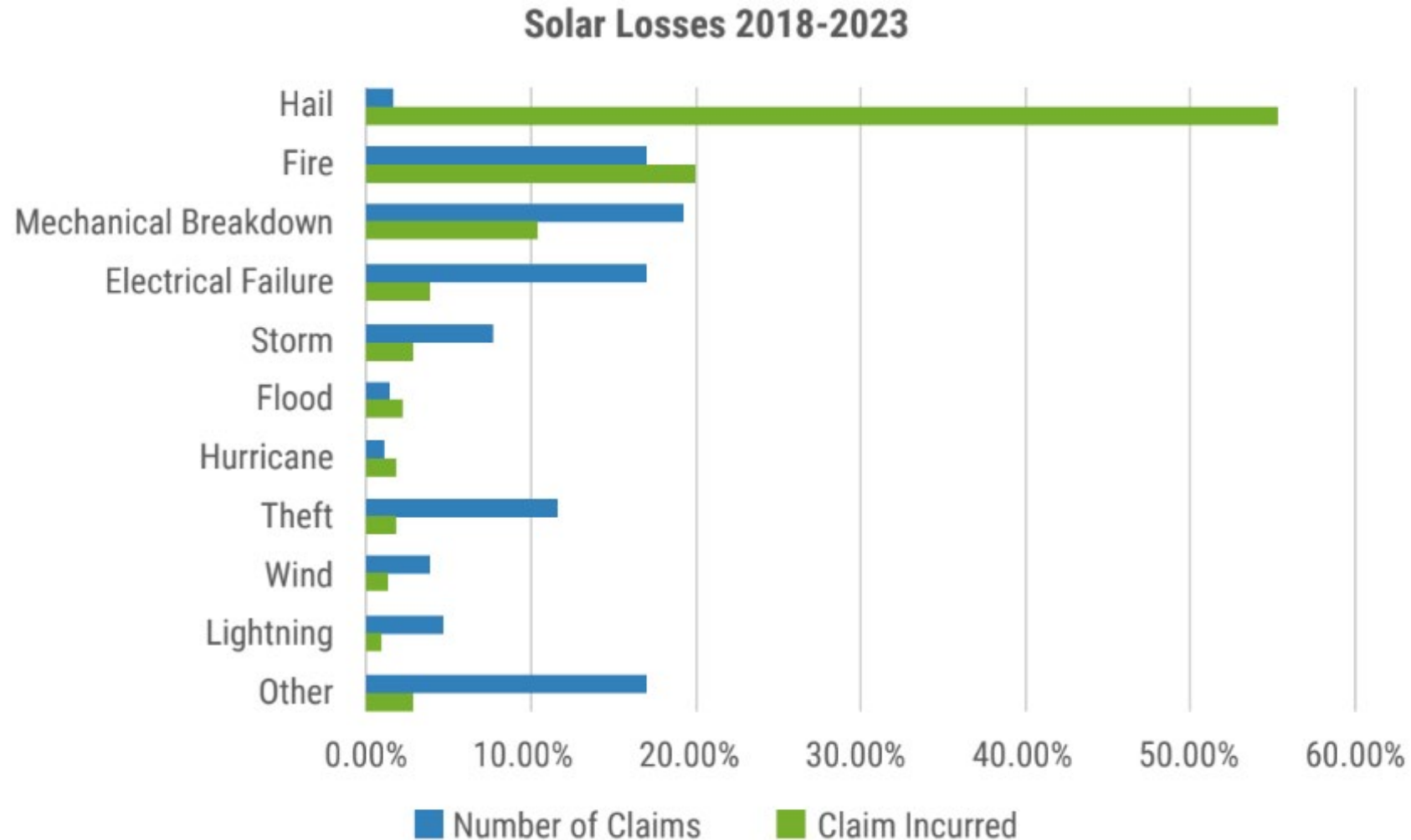


National Weather Service

Since 2000, **Bartholomew County** had **18 days** of hail  
**one inch or larger.**

30 years = 23 damaging hail events across approx. 500,000 panels

# Fifty-four percent of solar loss claims are due to hail damage.





Routine storms and wind cause damage.



Yearly averages for Indiana:

- 59 thunderstorms
- 22 tornadoes

New Paris, IN April 2023  
Straight-Line Wind Damage

<http://www.usa.com/columbus-in-natural-disasters-extremes.htm>  
[Tornado Averages in Indiana \(groundzeroshelters.com\)](https://groundzeroshelters.com)  
<https://escholarship.org/content/qt5t8569hf/qt5t8569hf.pdf?t=r4hou0>

# Weather-Damaged Modules are a Safety Risk

Glass shards blown across residences and preschool playground



# Weather-Damaged Modules are a Safety Risk

- Glass shards blown across residences and preschool playground
- Hot spots and abraded wires cause **fires**

<https://coreenergyworks.com/wp-content/uploads/2021/06/COREEnergyWorks-NREL-PVRW-white-paper-20200529-1.pdf>

[Solar Panel Hotspots: Identifying and Preventing Potential Damage \(linkedin.com\)](https://www.linkedin.com/pulse/solar-panel-hotspots-identifying-preventing-potential-damage-kevin-chen)

<https://escholarship.org/content/qt5t8569hf/qt5t8569hf.pdf?t=r4houo>

<https://www.energy.gov/eere/solar/articles/assessing-fire-risks-photovoltaic-systems-and-developing-safety-concepts-risk>



# Weather-Damaged Modules are a Safety Risk

- Glass shards blown across residences and preschool playground
- Hot spots and abraded wires cause fires
- Lead leaches
  - “Leaching experiments have demonstrated **severe leaching of Pb (lead)** from c-Si (silicon) modules.”

## Materials & Average Mass Fractions Of A Typical Module

The EPA States  
 “Lead in the soil  
 contributes to  
 overall  
 environmental  
 lead exposure.”

Component	Materials	Material composition (examples)	Mass [%]	Approx. mass [g/m <sup>2</sup> ]
Frame	Metal	Aluminum	8 - 10	1,060
	Plastic	Polyurethane, polyamide		
Glass	Tempered glass, annealed glass	Glass (Si, Na, Ca, Mg)	74 - 76	8,850
	Front plate, LSG	Glass, PVB film		
Cells	Crystalline	Silicon	3.6	424
Cell stringing Connectors	Tin-plated copper bands	Copper, tin, silver, lead, bismuth <sup>2</sup> (only 10-30 μm thick)	0.8	94
Backsheet	Tedlar film	PET, PVF, PA	5	590
Embedding		EVA, acrylate	6	708
Seals, adhesives	Frame sealing tape	Rubber, silicone, acrylate, PE foam, polyurethane, ethylene-propylene-copolymers	1 - 2	177
Junction boxes	Plastics, metal	ABS, PET, aluminum	1 - 2	177

# Weather-Damaged Modules are a Safety Risk

- Glass shards blown across residences and preschool playground
- Hot spots and abraded wires cause fires
- Lead leaches
  - American Academy of Pediatrics “**no safe level of lead** for children”
  - **Lead effects a child’s brain development** and is believed to be

## Does NOT Meet Criteria 1

The approval of the conditional use will be injurious to the public health, safety, and general welfare of the community.



# School Safety

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JENNIFER PROBST

# St. Paul Lutheran Early Childhood Ministry (ECM)

– Jen Probst, director

## In Yellow

- Located on County Road 300 E south of State St. (St. Road 46)
- The school playground is directly south of the building
- St. Paul church and ECM has received no written communication from Carina



# St. Paul ECM and Criteria # 1



- Capacity **77** students
- Students range from age 3 to 6
- School and care 7:00 – 4:30
  
- School building is **255 feet** from the proposed fence --Carina's application, page 403
- The playground is **7 feet** from the road and will be **227 feet** from the proposed fence.

## County Road 300 East and Safety

- **Large equipment on 20 feet wide road, no shoulders**
- Children walk from school to the playground along 300 East
- Parent car lines use 300 East

**The safety of our children  
should be all of our # 1 Priority!**





- Historically, this area is called Clifty Hill and is known for its **west wind gusts**
- The solar leased farm is **west** of the playground

What will happen when construction starts?





## **What are industrial solar's long term affects on young children?**

- Children age 3-6 are in a critical stage in their mental, emotional, social, and physical development
- Families entrust our school with the safety and nurture of their children
- The parents and staff need long term research-based evidence that assures our children will not be negatively impacted by industrial solar arrays

**Criteria #1** The approval of the conditional use will not be injurious to the public health, safety and general welfare of the community. **What harm could come from approving the conditional use? Would it create any public safety issues? Why or why not?**

### Children and Construction concerns:

- Large equipment on a narrow road
- Children on playground can be **7 feet** from road
- Children walk daily along 300 East
- Flying construction debris

### Long term:

- Flying debris from damaged panels
- Lack of studies on the developmental affect of young children
- **Affecting St. Paul's ECM enrollment - not able to defend the safety of building solar arrays or defend the effects of long term industrial solar use on young children to the parents of our current and potential enrolling students**



# Fire Safety

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SHAWN MCNEALY

# Fire Risk

Shawn McNealy  
3788 N County Road 575 E  
Hope, IN 47246

# CFD Firefighter for 23 years



# Risk of Failure and Fire Ignition



## Mitigating the risk of fire on utility scale solar facilities



Luke Magon

Managing Director of ScanPro, Drone Operations, Infrared Thermal Imaging and Electroluminescent inspection

Published Feb 12, 2020

+ Follow

The importance of mitigating the risks associated with fire in Australia has never been more blatantly obvious than what we have all witnessed over the past 5 months. Dry, drought affected areas have suffered some of the worst fire events we have ever experienced as a nation, and for many rural communities the past three months has gone from bad to worse.

The average sized 100MW solar farm hosting around 300,000 to +400,000 solar panels (modules) will generally have over 1,000,000 physical made electrical terminations. Each one of these terminations operates at around 1500 Volts and each termination could fail.

Electrical equipment failure is well known to be linked to situations where we can observe abnormally high temperatures. Fire, sparking, arcing or melting exposes electrical equipment to further damage and degradation exacerbated as moisture ingress occurs. Electrical failure can occur due to various factors and although the commonly seen issue will generally arise due to high resistive joints it is not uncommon to observe how the environment impacts equipment over time. Electrical termination temperatures can reach over 120° Celsius, under these conditions, equipment will begin to deteriorate, over time plastics will have already begun to deform or melt and visible signs or smells will be present.

Mismanagement, poor quality equipment and installation practices or lack of scheduled maintenance is generally what leads to these situations. Thorough and regular maintenance procedures can control these issues including addressing performance degradation, system dropouts, inverter failure/faults and lost yield.

The most common issues that will lead to a high resistive joint to form are:

- Poor connections and terminations
- Formation of Oxidation and Calcification around connections
- Product failure
- Environmental impacts
- Ingress or disturbance from Flora and Fauna



# Sharp Rise in Solar Fires

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## Reinsurance News

### "Sharp rise" being seen in solar farm fires: Firetrace International

11th August 2022 - Author: Jack Willard

A recent study by Firetrace International, a leading provider of fire suppression technology, indicates that solar farm fires are seeing a sharp rise.

The report, titled "*Hidden Danger – why solar farm fire risk could be greater than you think*," highlights that the industry could possibly be misjudging the threat of fire and that it urgently needs to address the issue, particularly as cumulative installed PV capacity increased by approximately one quarter in 2021. Unfortunately, the number of fires increased more quickly than growth of installations in some markets.



Statistics revealed by the Australian PV Institute showed that between 2018 and 2020 PV installations increased less than three-fold, the data from Fire and Rescue New South Wales (NSW), however, reveals that the number of solar fires attended by firefighters in the same period rose six-fold.

The report also looks at a study by the UK's BRE National Solar Centre –entitled "*Fire and Solar PV Systems – Investigations and Evidence*". The study provided a detailed investigation into a total of 80 potential PV-related fire incidents that led to the overall conclusion that researchers "strongly suspected a degree of under-reporting, especially amongst solar farms and domestic thermal events that were resolved by a solar installer/maintenance engineer."

Furthermore, it explores how this lack of transparency could prevent the industry from establishing an accurate baseline to continuously improve best practice.

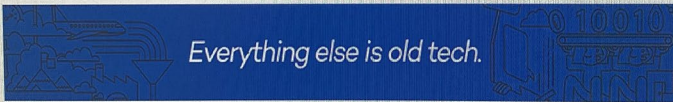
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The report goes on to establish three root causes for photovoltaic fires, namely, error in the design system, a faulty product/s, or poor installation practice.

According to the report, the photovoltaic component that presents the greatest fire risk are DC isolators, which cause around a third of solar fire incidents. However, DC connectors and inverters can also pose significant risks.

The study also outlines a number of steps to minimize the risk including regular testing by independent third parties, incorporating additional safety components, such as fire suppression technology, and ensuring defective parts are replaced quickly.

Ross Paznokas, Global Business Development Manager – Clean Energy, Firetrace International, says: "With the number of PV installations dramatically increasing around the world, taking these steps will be vital in reducing fire risk, which is why we launched our best-in-class fire suppression technology into the solar industry earlier this year.

"We're drawing on our experience in the wind industry, where the technology has already been installed more than 23,000 times in turbines across the world, and are working hard to support the solar industry in understanding the causes of solar farm fires, and gaining confidence to share this data so that we can learn from fire events and establish best-practice."

Print PDF

# Product Safety Data Sheet

## PRODUCT SAFETY DATA SHEET



### 5. SECTION: FIRE-FIGHTING MEASURES

- Qcells solar PV modules are fire rated as Class C according to IEC and UL 1703/UL 61730 as well as Type 1 and 2 according to UL 1703/UL 61730.
- Qcells solar PV modules are extensively tested at the factory to ensure electrical safety of the product before shipment.
- In rare cases, solar PV modules – as any other electrical device – can cause fire due to worn electrical contacts which result in electrical arching.
- In case solar PV modules which are not part of an array are on fire, USE FIRE EXTINGUISHERS RATED FOR ELECTRICAL EQUIPMENT, Class C.
- IN CASE A SOLAR PV MODULE ARRAY IS PRESENT, ANY FIRE SHOULD ONLY BE FOUGHT BY PROFESSIONAL FIREFIGHTERS. FIREFIGHTERS NEED TO TAKE PRECAUTIONS FOR ELECTRICAL VOLTAGES UP TO 1,500 VOLTS (DC).
- Some components of the modules can burn. Potential combustion products include oxides of carbon, nitrogen and silicon.
- In case of prolonged fire, solar PV modules may lose their structural integrity.

#### General recommendations from the below-mentioned reports:

- Fire service personnel should follow their normal tactics and strategies at structure fires involving solar power systems, but do so with awareness and understanding of exposure to energized electrical equipment. Emergency response personnel should operate normally, and approach this subject area with awareness, caution, and understanding to assure that conditions are maintained as safely as possible.
- Care must be exercised during all operations, both interior and exterior.
- Responding personnel must stay back from the roofline in the event modules or sections of an array may slide off the roof.
- Contacting a local professional PV installation company should be considered to mitigate potential hazards.
- Turning off an array is not as simple as opening a disconnect switch. As long as the array is illuminated, parts of the system will remain energized.
- When illuminated by artificial light sources such as fire department light trucks or an exposure fire, PV systems are capable of producing electrical power sufficient to cause inability to let go from electricity as a result of stimulation of muscle tissue, also known as lock-on hazard.
- Firefighting foam should not be relied upon to block light.
- The electric shock hazard due to application of water is dependent on voltage, water conductivity, distance and spray pattern.
- It is recommendable to fight fire with water instead of foam if a PV system is present. Salt water should not be used.
- Firefighter's gloves and boots afford limited protection against electrical shock provided the insulating surface is intact and dry. They should not be considered equivalent to electrical personal protection equipment.

# LA Times



Los Angeles Times

LOG IN



BUSINESS

## How a bird started a fire at a California solar farm



A commercial solar project in San Bernardino County's Lucerne Valley. (Allen J. Schaben / Los Angeles Times)

BY BLOOMBERG

JUNE 24, 2019 5:15 PM PT

