Case Study Recap:
Direct Impact of Wind Energy Development in Howard County, Iowa*

Basic Howard County information & affected landmarks

Population:
9,469

Number of wind turbines:
147

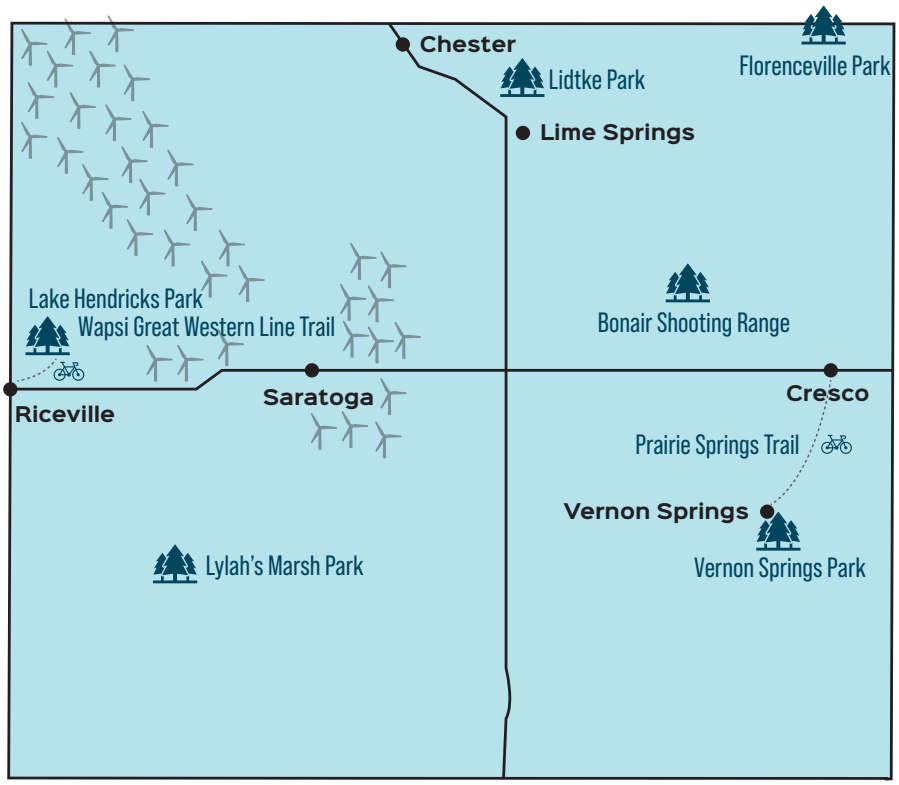
Total production capacity:
244 Megawatts

Project start years:
2008, 2009, 2019

Total taxable valuation in 2024-25:
$115,367,963

Amount of tax revenue collected in 2024-25:
$2,711,368

Percentage of county revenue generated by wind in 2024-25:
14.5%



Financial impact on public services

- Funds from wind turbines paid for $21.5 million worth of special projects through Tax Increment Financing (TIF) at no cost to residents.
- According to county officials, the funding provided through TIF has been pivotal for the health of public infrastructure in Howard County.

> *"Without the funds from wind turbines, they would have been forced to close some of the low-priority bridges and bond out higher-priority ones."*
>
> *"The roads we are paving this year might have needed to hold up another 20 [years]. It's a snowball effect of being able to purchase equipment now that allows us to get more done down the line."*
> –Nick Rissman, Howard County engineer

*All information found on page 1 and 2 is cited within the following narrative section.

Infrastructure improvements

Type of project	Description	Amount of TIF funds
Bridges	• 30 bridge replacements (greater than 20 feet) • A portion of four bridge rehabilitations • Two bridge replacements (less than 20 feet)	$6.5 million
Roads	• 20 miles of paving • Eight miles of grading	$12 million
Equipment	• A portion of six motor graders • Tractor with mower • Dump truck	$1.5 million

Parks & Conservation	• Rennovations at five local parks and a shooting range
	  • Nature Center Improvements
	  • Dam repairs
	  • Watershed projects
	  • Fishing habitat and structures
		$1.5 million

Total infrastructure projects costs		**$21.5 million**

Impact on county school districts

- Total additional annual funds provided to Riceville and Howard-Winneshick school districts: $228,071
  - » Funds can be used for staff salaries, improvement of grounds and buildings, lease or purchase of equipment or technology, and transportation-related expenses.
- Wind energy contributes to the Riceville Community School District maintaining the third lowest total general tax rate in Iowa, due in part to the high taxable valuation of wind turbines.

Farmer perspectives

- Wind turbines provide additional income for farmers and their operations through land-lease agreements with wind turbine developers.

> *"[Farmers] have put that money into their land; [they] buy new farm equipment, build new machine sheds and homes."*
> – Neil Shaffer, president of Howard County Farm Bureau

- Interviewed farmers emphasized the importance of communication between the developer and landowner on the land lease contract and project planning. The flexibility and willingness of the developer to work with the farmer on project development can make a meaningful difference.
  - » **Example:** One landowner had been approached by two companies and decided to only host turbines from one because "they wanted to make it right by the farmer, rather than build it the most conveniently for them."

Greg "Grub" Lichty is a farmer in Howard County who hosts multiple turbines on his property. Like many farmers, he got started when a local wind turbine developer came to visit him. He had a lot of questions regarding how the project would affect his farming business. He was able to work with the developer on the placement of the turbines and access roads to better fit his operation. Overall, the turbines have been a major asset to Grub, and he has maintained a good relationship with the local project owner.

Case Study

Direct Impact of Wind Energy Development in Howard County, Iowa

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Table 1. Basic county wind energy information

Subject	Key numbers
Population	9,469
Number of wind turbines	147
Total production capacity	244 megawatts (MW)
Project start years	2008, 2009, 2019
Total taxable valuation in 2024-25	$115,367,963
Amount of tax revenue collected in 2024-25	$2,711,368

I. Introduction

Wind energy was introduced to Iowa in the early 2000s and has been a feature of the state's landscape since; Howard County saw its first wind turbines erected in 2008 and 2009 with the Pioneer I and II projects.[1] These two projects installed 182 turbines (178 MW) split between the northwest corner of Howard and the northeast corner of Mitchell County around Riceville. In 2019, Madison Gas and Electric built another 33 turbines (66 MW) about 12 miles west of the Howard County seat, Cresco.[2] See Table 1 for Howard County wind energy information.[3,4,5,6]

The introduction of wind turbines has been an economic boon for the county as a whole. The turbines supply stable and significant tax revenue to the county and local schools, representing about 14.5% of overall tax revenue.[7] The additional funding has been used to pay for important infrastructure projects, revitalize public parks, and increase funding for two county school districts. The benefits have been pivotal for Howard County, as the additional funds have directly led to improved road and bridge inventories. Pat Murray, a former Howard County supervisor interviewed for this report, stated, "I don't know how other small counties make it without wind turbines; the population isn't growing much, there isn't new development, the tax base has been stagnant."[8] From 2010 to 2020, the population in Howard County decreased from 9,566 to 9,469, while the state population increased 5% over the same period.[9]

II. Financial impact on public services

A previous report by the Center for Rural Affairs found that counties in Iowa have two strategies for collecting tax revenue from wind projects.[10] One takes a standard approach and allows regular tax entities to collect their usual share. The other uses a common economic development tool called

1 "U.S. Wind Turbine Database." Lawrence Berkeley National Laboratory, U.S. Geological Survey, American Clean Power, November 2024, eerscmap.usgs.gov/uswtdb/viewer/#11.41/43.4258/-92.3645. Accessed December 2024.

2 Klomp, Marcie. "More Wind Turbines in H.C." The TPD Online Cresco Times Plain Dealer, April 5, 2017, crescotimes.com/news/more-wind-turbines-hc. Accessed December 2024.

3 "Howard County, Iowa." U.S. Census Bureau, 2023, data.census.gov/profile/Howard_County,_Iowa?g=050XX00US19089. Accessed December 2024.

4 "U.S. Wind Turbine Database." Lawrence Berkeley National Laboratory, U.S. Geological Survey, American Clean Power, November 2024, eerscmap.usgs.gov/uswtdb/viewer/#11.41/43.4258/-92.3645. Accessed December 2024.

5 Personal communication, Julie Chapman, Howard County auditor, Aug. 8, 2024.

6 Ibid.

7 Personal communication, Julie Chapman, Howard County auditor, Aug. 8, 2024.

8 Personal communication, Pat Murray, Howard County supervisor, Aug. 27, 2024.

9 "Howard County, Iowa" U.S. Census Bureau, 2023, data.census.gov/profile/Howard_County,_Iowa?g=050XX00US19089. Accessed December 2024.

10 Delworth, Alex. "Windswept Fields of Opportunity: Iowa Wind Energy County Tax Impact Studies." Center for Rural Affairs, July 6, 2023, cfra.org/publications/windswept-fields-opportunity-iowa-wind-energy-county-tax-impact-studies. Accessed December 2024.

Table 2. Infrastructure projects (project costs funded by TIF)

Type of project	Description	Amount of TIF funds
Bridges	• 30 bridge replacements (greater than 20 feet) • A portion of four bridge rehabilitations • Two bridge replacements (less than 20 feet)	$6.5 million
Roads	• 20 miles of paving • Eight miles of grading	$12 million
Equipment	• A portion of six motor graders • Tractor with mower • Dump truck	$1.5 million
Total infrastructure projects costs		**$20 million**

Tax Increment Financing (TIF) to pay for special projects. TIF is a public financing method that uses future property tax increases to pay for community improvements. Howard County predominantly used the TIF method but left some of the turbines to be taxed under a standard approach.

By using the TIF method, Howard County has been able to use a significant amount of wind tax revenue for vital projects to improve public infrastructure and parks. The projects completed have included road paving and grading, bridge replacement and rehabilitation, local conservation efforts, and recreational park revitalization projects.

In an interview, Howard County Engineer Nick Rissman said, "Without the funds from wind turbines, we would have been forced to close some of the low-priority bridges and bond out higher-priority ones."[11] The funds allowed the county to double the number of bridge projects it was able to complete between 2010 and 2020 relative to the previous decade.[12] Not only have these funds fully paid for more than 30 bridge projects without any increased taxes on residents, but they also created an excise effect for future projects in the county. According to Nick Rissman, "It's a trickle-down effect; roads that are getting paved this year or next year are because these 20 are already done. The roads we are paving this year might have needed to hold up another 20. It's a snowball effect of being able to purchase equipment now that allows us to get more done down the line."[13] The effect is also highlighted by the partial funding that went toward equipment, like the six motor graders that could be used for future road projects.

See Table 2 for a list of infrastructure projects and equipment purchases fully funded through TIF money from wind turbines.[14,15,16]

Taxes from wind turbines were used to pave 20 miles of road and 8 miles of grading projects, which included County Highway A23, featured in this photo.

11 Personal communication, Nick Rissman, Howard County engineer, Aug. 27, 2024.

12 Ibid.

13 Ibid.

14 "Howard County Wind Farm Urban Renewal Area." Urban Renewal Plan, Auditor's Office, Howard County, Iowa, 2010.

15 "Amendment #1, Howard County Wind Farm Urban Renewal Area." Urban Renewal Plan, Auditor's Office, Howard County, Iowa, 2013.

16 "Amendment #2, Howard County Wind Farm Urban Renewal Area." Urban Renewal Plan, Auditor's Office, Howard County, Iowa, 2019.

Table 3. Recreation and conservation projects (project costs funded by TIF)

Type of poject	Description	Amount of TIF funds
Lake Hendricks Park	Fish structures, watershed improvement, road paving	$550,000
Florenceville Park	Renovations	$65,000
Lylah's Marsh Park	Dam structure repair, park renovation	$120,000
Vernon Springs Park	Rock arch rapids, Nature center habitat displays for educational purposes, park renovation, and road resurfacing	$254,000
Lidtke Park	Park renovations, campground	$203,000
Bonair shooting range	Increased the range distance and height of berms to accommodate trap shooting	$64,000
Recreational trail project	Repaving of the Prairie Springs and Wapsi Great Western Line trails, with leftover funds available for additional projects	$242,000
Total recreation and conservation project costs		**$1.5 million**

III. Public recreation and conservation

Howard County also allocated funds for recreation and conservation projects to increase the quality of life for residents and the health of local watersheds. The county views these investments as a means to attract new businesses and incentivize workers to relocate to the community. According to Neil Shaffer—a local resident, Silver Creek Watershed coordinator, and Howard County Farm Bureau president—the half-million dollar investment into Lake Hendricks Park paid for numerous renovations, including fishing jetties, crappy condos, and rock reefs, which improve fishing habitats and fishing access at the lake. According to Jeff Korsmo, Director of Howard County Conservation, funds also paid for watershed improvements to the tile lines from nearby farmland that feed into Lake Hendricks.[17] The improvements included wetland restoration and denitrification bioreactors to filter incoming water as well as grade stage structures to limit erosion from the tile dumping areas.

In the most recent extension of TIF funding, the county allocated $250,000 for improvements to Prairie Springs and Wapsi Great Western Line recreational trails.[18] This money has been used to repave the two trails, install rubber mulch for the playground at Prairie's Edge Nature Center, and renovate Taylor's Pond. See Table 3 for a full list of projects and associated costs funded through TIF money from wind turbines.[19]

TIF money funded several projects to improve roads and fishing opportunities at Lake Hendricks Park, which is just outside of Riceville, Iowa.

17 Personal communication, Jeff Korsmo, Director of Howard County Conservation, Feb. 14, 2025.

18 "Amendment #1, Howard County Wind Farm Urban Renewal Area" Urban Renewal Plan, Auditor's Office, Howard County, Iowa, 2013.

19 Ibid.

Prairie Springs Recreational Trail (left) is a 3-mile trail from Cresco to Vernon Springs Park in Howard County. New pavement was funded by TIF money from wind turbines. Prairie's Edge Nature Center, shown on the right, features new rubber mulch and edging for the playground, all paid for by TIF funds.

IV. Impact on county school districts

While public schools funding is primarily received through state and local property tax revenue, wind energy development can also significantly improve local schools. In Howard County, wind projects have directly provided additional funds to the Riceville and Howard-Winnesheick community school districts and decreased the tax burden on nearby residents. The benefit occurs because wind turbines add to the property value of taxing districts like schools, whether the county used TIF or not, although the breakdown of exactly how districts are affected can be complex.

The school's main source of revenue is its general fund, which pays for the bulk of the budget, including items such as teacher salaries. Iowa tries to equalize funding among districts across the state, so the general fund is made up of a combination of state and local property taxes. As a result, the additional property value from wind energy does not increase the amount of funding per student for the school; however, it does reduce the total general levy rate for local taxpayers. This is particularly notable for Howard County because the Riceville school district has the third lowest school tax rate in the state out of 334 schools, partly because of the number of turbines within the school district.[20]

Schools can also see an increase in revenue from other funds. The state allows each district to tax properties broadly for a Management Fund; voted and regular Physical Plant, Equipment Levy (PPEL) Funds; and an Instructional Support Fund. See Table 4 on page 10 for an individual breakdown of additional funds going to school districts from turbines.[21,22] The tax funds provide additional money for general fund purchases as well as other essential operations like the improvement of grounds and buildings, the lease or purchase of equipment or technology, and transportation-related expenses.

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20 "School Resources, School Data." Iowa Department of Management, Local Budgets Division – Schools, dom.iowa.gov/local-government/school-resources#school-data. Accessed January 2025.

21 Ibid.

22 Personal communication, Julie Chapman, Howard County auditor, Aug. 8, 2024.

Table 4. Breakdown of wind turbine money to school districts

Riceville Community School District		Howard-Winnesheick Community School District	
Location	Howard and Mitchell counties	**Location**	Howard and Winnesheick counties
Student Body	344 students (districtwide)	**Student Body**	1,135 students (districtwide)
Number of Howard County turbines in the district	116	**Number of Howard County turbines in the district**	29
Additional funding provided by turbines	$179,547	**Additional funding provided by turbines**	$48,524
Funding Breakdown	Management Fund - $40,336 Voted PPEL Fund - $79,701 Regular PPEL Fund - $34,318 Instruction Support Fund - $25,192	**Funding Breakdown**	Management Fund - $25,774 Voted PPEL Fund - $10,814 Regular PPEL Fund - $3,749 Instruction Support Fund - $8,187

V. Local perspectives

A. County officials

County officials in Iowa play an essential role in wind development through zoning ordinances and coordination with wind companies throughout the wind project's lifespan. Ordinances set standards for wind energy development regarding the placement of turbines, public road use, turbine decommissioning, and other key issues. The Howard County supervisors proactively passed an ordinance before construction began that allowed for development while mitigating any potential negative impact on residents and public funds.

When asked in an interview what they would have done differently or what advice they would give a peer, both the county engineer and supervisor emphasized the importance of road-use agreements. The engineer stated, "Make sure the contractors know they are responsible for maintaining the roads; in the spring (wet conditions), trucks destroyed some of the roads."[23] The project responsible for the road damage repaired it; however, the county added language to its ordinance that set more specific requirements regarding the timing of such repairs. The supervisor stated the developers "need to understand that the road needs to be repaired immediately."[24]

> *"[The road damage] is only temporary, the benefits are after the fact. I would highly recommend any county interested in [Tax Increment Financing] windmills that they should do it."*
> *– Nick Rissman, county engineer*[25]

B. Landowners

One stakeholder group closely involved with wind turbine development comprises landowners who host the projects. Turbines in Iowa are most commonly built on land leased to a project owner by a voluntary landowner, often a farmer. Interviews with three Howard County farmers who lease property for wind turbines illustrate their individual experiences.

23 Personal communication, Nick Rissman, Howard County engineer, Aug. 27, 2024.

24 Personal communication, Pat Murray, Howard County supervisor, Aug. 27, 2024.

25 Personal communication, Nick Rissman, Howard County engineer, Aug. 27, 2024.

Overall, the experience has been strongly positive for all three. The lease payments have provided them with stable yearly income, which can be significant in the face of volatile agricultural markets. The extra income has also allowed them to reinvest more into their farming operations. "It helped with machinery purchases, [and] it's a great asset to the operation that increases with inflation," said Greg Lichty, one of the landowners interviewed.[26] In addition, he was able to place the access road to the turbine in a spot that improved his farm operation. The president of the Howard County Farm Bureau confirmed, "[Farmers] have put that money into their land; [they] buy new farm equipment, build new machine sheds and homes."[27]

While none of the landowners had any major issues with the turbines they have hosted, the experience has not always been perfect. The interviewed landowners all emphasized the importance of detailed land-lease contracts and flexibility with the developer.

Land-lease contracts are meant to ensure landowners will not be financially responsible for damage to their agriculture operations from the construction or operation of turbines. Lichty put that to the test in two instances. During construction, he experienced significant tile damage due to heavy machinery crossing his fields. Later, lightning struck a turbine blade during the growing season, which caused minor damage that required repairs and cleanup around the affected turbine. In both circumstances, the developer fully paid for the damage because it was written into the land lease contract. Through all of that, Lichty said, he maintained a good relationship with the turbine owner: "I have been happy with them. I have [the project developer contact] in my phone."[28]

Two landowners noted how pivotal the flexibility of the developer was during the planning process for the success of the project on their property. Both were able to negotiate certain contract provisions, including the placement of the turbine on their land. One landowner said, "They wanted to make it right by the farmer, rather than build it the most conveniently for them."[29] The same landowner decided not to add more turbines from a different developer because they were not as flexible. He stated this was due to the developer not giving him "certain agreements on the placement of turbines."

Greg "Grub" Lichty is a farmer in Howard County who hosts multiple turbines on his property. Like many farmers, he got started when a local wind turbine developer came to visit him. He had a lot of questions regarding how the project would affect his farming business. He was able to work with the developer on the placement of the turbines and access roads to better fit his operation. Overall, the turbines have been a major asset to Grub, and he has maintained a good relationship with the local project owner.

About the Center for Rural Affairs

Established in 1973, the Center for Rural Affairs is a private, nonprofit organization with a mission to establish strong rural communities, social and economic justice, environmental stewardship, and genuine opportunity for all while engaging people in decisions that affect the quality of their lives and the future of their communities.

26 Personal communication, Greg Lichty, Howard County landowner, Aug. 27, 2024.

27 Personal communication, Neil Shaffer, Aug. 27, 2024.

28 Ibid.

29 Personal communication, Howard County landowner #1, Aug. 27, 2024.