

Windswept Fields of Opportunity: Iowa Wind Energy County Tax Impact Studies



A report by Alex Delworth
Center for Rural Affairs



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Alex Delworth

Policy Associate,
Center for Rural Affairs

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By:
Alex Delworth, policy associate, Center for Rural Affairs.

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Center for Rural Affairs
145 Main Street
PO Box 136
Lyons, NE 68038
402.687.2100
info@cfra.org
cfra.org

Photos by Rhea Landholm and Alex Delworth.

Report editing by:
Teresa Hoffman, senior communications associate;
Rhea Landholm, communications manager;
Catharine Huddle, communications consultant;
and Liz Stewart, communications consultant.

Design by:
Kylie Kai, senior communications associate.

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I. Introduction

Wind energy has been part of the Iowa landscape for decades. Today, the state is the second-largest wind power producer in the nation and has the highest share of net electricity generation, with 58% of production coming from wind in 2021.¹ As demand for renewable energy continues to rise, Iowa’s wind energy capacity is expected to grow from 12,219 megawatts (MW) to more than 14,700 MW in the next several years.²

As shown in Figure 1, in the past 10 years, Iowa has seen a 166% increase in net wind generation,

1 “Profile Analysis.” U.S. Energy Information Administration, July 21, 2022, eia.gov/state/analysis.php?sid=IA. Accessed March 2023.

2 “Iowa Wind Energy Fact Sheet.” Iowa Environmental Council, June 2022, [iaenvironment.org/webres/File/Wind%20Energy%20Fact%20Sheet%20-%202022%20\(1\).pdf](https://iaenvironment.org/webres/File/Wind%20Energy%20Fact%20Sheet%20-%202022%20(1).pdf). Accessed March 2023.

with another 1,000 MWs expected to come online in 2022.^{3,4}

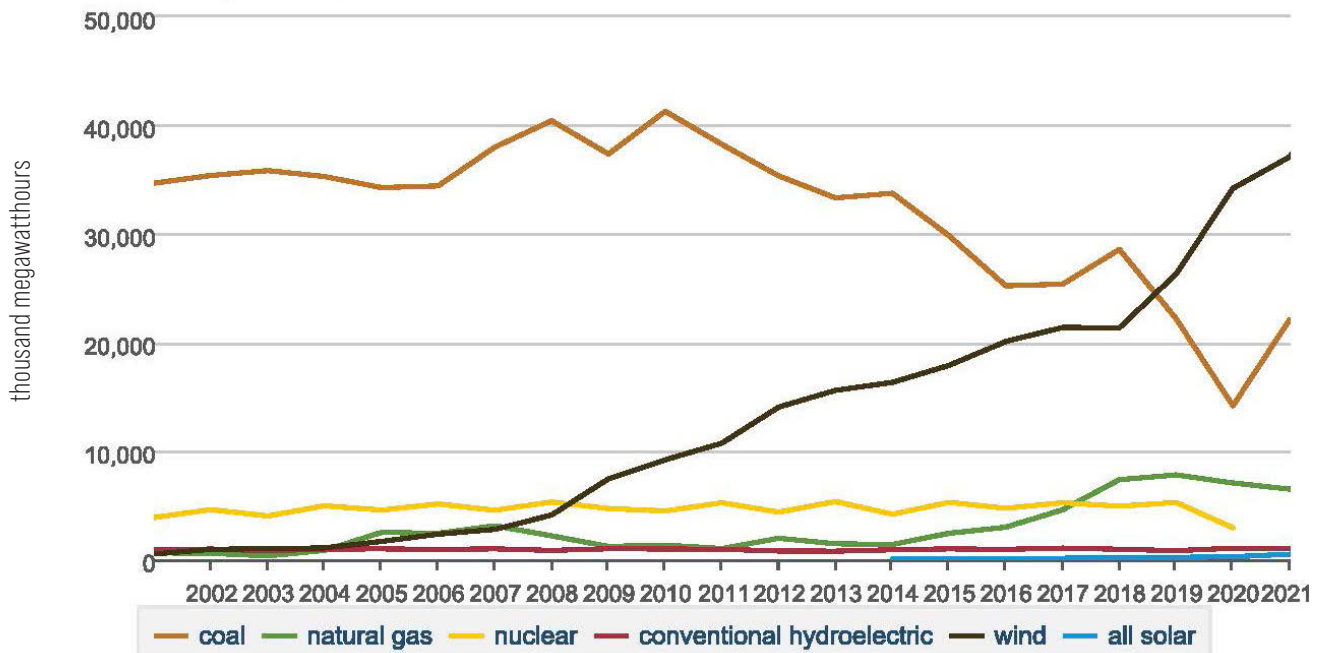
Wind development can provide significant economic benefits to local governments, which assess and collect property taxes on systems within their county borders. These property taxes apply to all of the wind-energy conversion property, which includes the turbine itself, electrical equipment, power lines, substations, and transformers.⁵

3 “Electricity Data Browser.” U.S. Energy Information Administration, eia.gov/electricity/data/browser/. Accessed March 2023.

4 “Profile Analysis.” U.S. Energy Information Administration, July 21, 2022, eia.gov/state/analysis.php?sid=IA. Accessed March 2023.

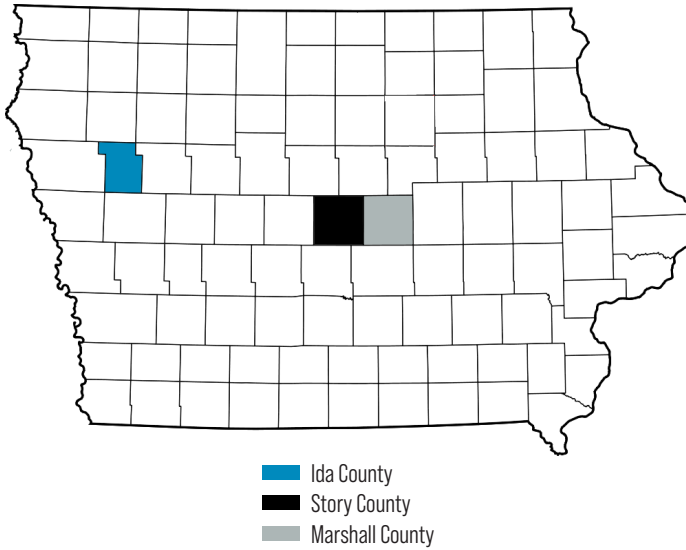
5 “Iowa Wind Energy Tax Revenue.” Center for Rural Affairs, May 1, 2019, cfra.org/publications/iowa-wind-energy-tax-revenue. Accessed March 2023.

Figure 1. Net wind generation, Iowa, all sectors, annual



Data source: U.S. Energy Information Administration

Figure 2. Iowa impact study counties



In 2021, Iowa wind turbines generated approximately \$57 million in tax revenues for state and local taxing bodies, and the wind companies paid out \$67 million in lease payments to landowners.⁶ Counties use the money to support essential services such as education, infrastructure, emergency services, and law enforcement.

In this report, we examine the impact wind-energy tax revenue has had on three Iowa counties: Story, Ida, and Marshall. See Figure 2. First, we outline how this revenue is collected and the options counties have at their disposal. This provides a full understanding of the benefits these projects pose to counties in Iowa. Then, we dive into specific case studies featuring individual counties and how they tax their wind turbines, the financial impact and special projects completed as a result, and their plans going forward.

Ida County is in one of the windiest regions of the state on average, while Story and Marshall counties are in a relatively calmer area. See Figure 3 on page 3.⁷

6 “Iowa Wind Energy Fact Sheet.” Iowa Environmental Council, June 2022, [iaenvironment.org/webres/File/Wind%20Energy%20Fact%20Sheet%20-%202022%20\(1\).pdf](https://iaenvironment.org/webres/File/Wind%20Energy%20Fact%20Sheet%20-%202022%20(1).pdf). Accessed March 2023.

7 “Iowa 80-Meter Wind Resource Map.” WINDEXchange, U.S. Department of Energy, Wind Energy Technologies Office, windexchange.energy.gov/maps-data/32. Accessed April 2023.

II. Taxing wind energy in Iowa

Before a county in Iowa can reap the full benefits of its wind farms, careful consideration must be given to how it intends to collect tax revenue. First, county officials must decide if they will use a special valuation, as opposed to a market valuation of the system. From this valuation, they can decide whether to tax the turbines as they would normally or use Tax Increment Financing (TIF).

It’s important to note there isn’t one superior method, and it is up to county officials to determine what is best for them. Officials from counties using competing taxing methods recognized the advantages of the alternative by pointing out financing issues they had been experiencing.

A. Special valuation

Iowa Code, Section 427B.26, gives counties the ability to create an ordinance for a special valuation of wind energy conversion property.⁸ Although not required, all utility-scale wind farms in Iowa have been assessed under the option for special valuation. If a county does not pass an ordinance for special valuation, wind energy systems are assessed at market value and taxed as a utility at 0.06 cents/kilowatt hour (Kwh) produced.⁹ This has not been explored because of community acceptance of the special valuation.¹⁰

8 “Iowa Code 2023, Section 427B.26 (24, 4).” Iowa Legislature, Dec. 30, 2022, legis.iowa.gov/docs/code/427b.26.pdf. Accessed March 2023.

9 “Iowa Code 2023, Section 437A.6 (15, 0).” Iowa Legislature, Dec. 30, 2022, legis.iowa.gov/docs/code/437A.6.pdf. Accessed March 2023.

10 Glass, Austin, et al. “Renewable Energy in Iowa.” Center for Local, State, and Urban Policy, Gerald R. Ford School of Public Policy, University of Michigan, January 2020, closup.umich.edu/sites/closup/files/uploads/working-papers/closup-wp-44-Hoesch-Renewable-Energy-in-Iowa.pdf. Accessed March 2023.

Special valuation is assessed based on the net acquisition cost.

Property is assessed at a rate of 0% of the net acquisition cost in the first year after installation. The rate increases by 5% each following year before it is capped at 30% in year seven.

Net acquisition cost =
total cost of the property + installation
of the wind energy system.

Example: A wind system with a net acquisition cost of \$58.9 million would be assessed at:

0 percent on the first year.

In the second year, the special valuation for the property would be 5% of the net acquisition cost, or \$2.9 million.

This amount would increase by 5% each year until year seven when the property would be assessed at a capped special valuation of 30% of the net acquisition cost, or \$17.6 million.

Figure 3. Iowa 80-meter wind resource map

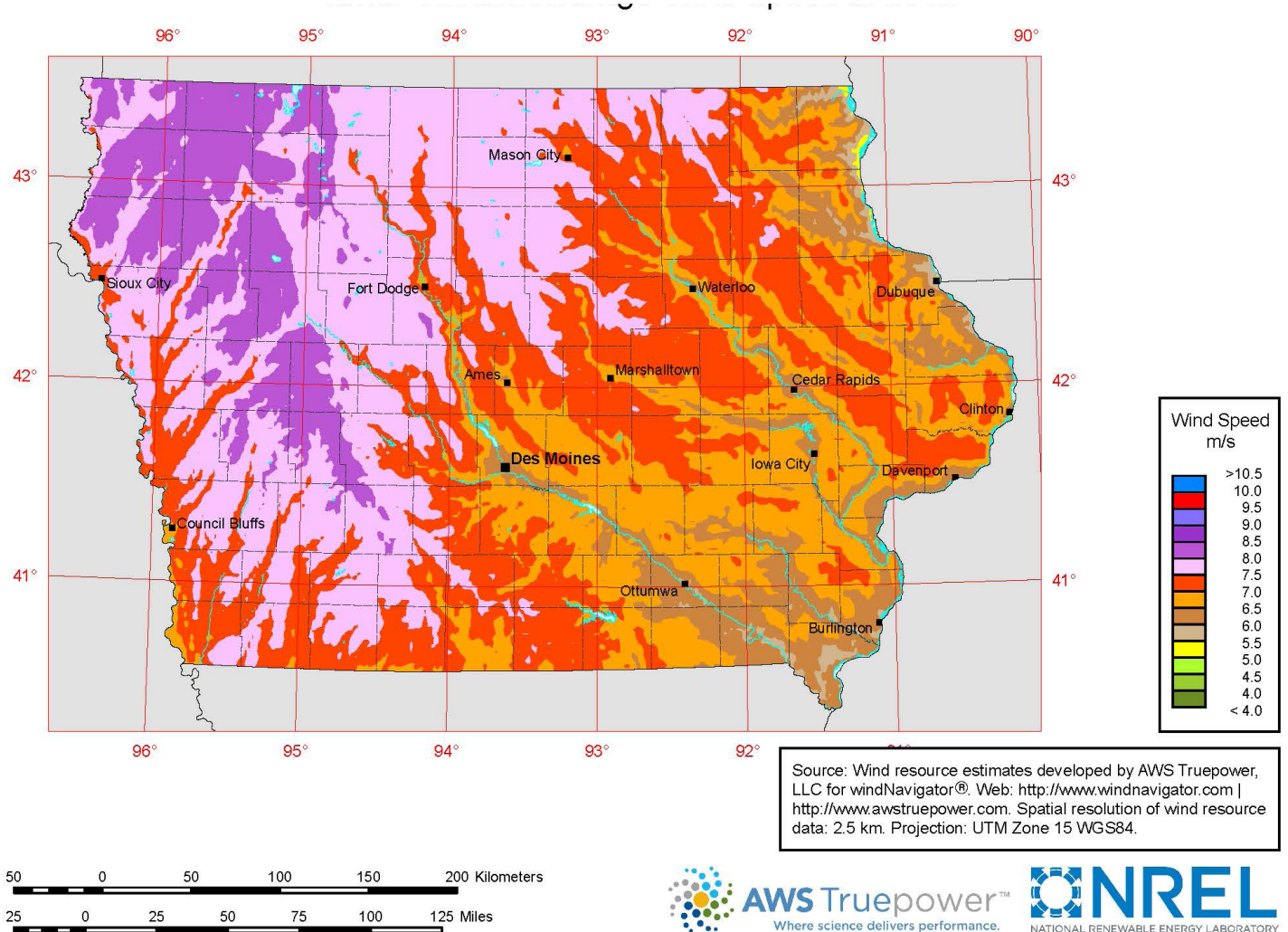


Table 1. Levy rates for land under county taxing district, example

Taxing district	Township/school	County	State	School	City	Township	Assessor	Area school	Co. Ag Extension	Other	Total
64-01-70	Bangor/BCLUW/Clemons	9.41485	0.00260	10.24445		0.73800	0.26619	1.65540	0.14816		22.46965
64-01-71	Bangor/BCLUW/Liscomb	9.41485	0.00260	10.24445		0.73800	0.26619	1.65540	0.14816		22.46965
64-01-72	Bangor/Marshalltown/Albion	9.41485	0.00260	18.13904		0.73800	0.26619	1.65540	0.14816		30.36424
64-01-73	Bangor/Marshalltown/Liscomb	9.41485	0.00260	18.13904		0.73800	0.26619	1.65540	0.14816		30.36424
64-01-74	Bangor/WM/Albion	9.41485	0.00260	11.76571		0.73800	0.26619	1.65540	0.14816		23.99091
64-01-75	Bangor/WM/Clemons	9.41485	0.00260	11.76571		0.73800	0.26619	1.65540	0.14816		23.99091
64-01-76	Bangor/WM/Liscomb	9.41485	0.00260	11.76571		0.73800	0.26619	1.65540	0.14816		23.99091
64-01-79	Eden/Baxter/Rhodes	9.41485	0.00260	17.48124		0.68776	0.26619	0.67789	0.14816		28.67869
64-01-80	Eden/CM/Rhodes	9.41485	0.00260	17.79936		0.68776	0.26619	0.67789	0.14816		28.99681

1. Standard taxing method

One method available to counties for taxing wind energy systems is to simply tax them like any other property within the county. This would mean the assessed value of a wind energy system, determined by the special valuation, would be lumped in with the county’s total valuation of property, also known as the tax base. Counties and local taxing bodies collect taxes through a consolidated levy rate applied to the tax base, which is a total rate made up primarily of the county, school district, and a city or township. The tax rates applied to properties are based on how much of the annual budget is not covered by the other sources of revenues.¹¹

See Table 1 for an example of the tax rates from different taxing bodies added up, then applied to the appropriate tax base.¹²

Once the county’s individual rate is applied, it is allocated to the general fund, along with any other rates that may have gone into the county’s consolidated rate.¹³ These funds are used to cover operat-

11 “Iowa Property Tax Overview.” Iowa Department of Revenue, tax.iowa.gov/iowa-property-tax-overview. Accessed March 2023.

12 “2020 Tax Rates for Taxes Payable 2021-2022, Marshall County.” Marshall County Iowa, marshallcounty-ia.gov/DocumentCenter/View/1367/2020-Tax-Rates-for-Taxes-Payable-FY-2021-22. Accessed March 2023.

13 “Iowa Property Tax Overview.” Iowa Department of Revenue, tax.iowa.gov/iowa-property-tax-overview. Accessed March 2023.

ing expenses of vital services including emergency health, public works, and safety enforcement.¹⁴ This method ensures that taxpayers directly affected by the installation of the turbines will benefit from the introduction of a wind farm. This is especially the case for hyper-local taxing bodies, such as school districts or townships. Because the introduction of the turbines within their borders increases the tax base to which the consolidated tax rate is applied, it leads to either a decrease in the levy or provides an increase in services, as seen in Figure 4 on page 5.¹⁵ This figure shows how an influx of new revenue into the tax base can relieve the burden on residents and other taxpayers if expenses remain the same.

2. Using tax revenue through TIF

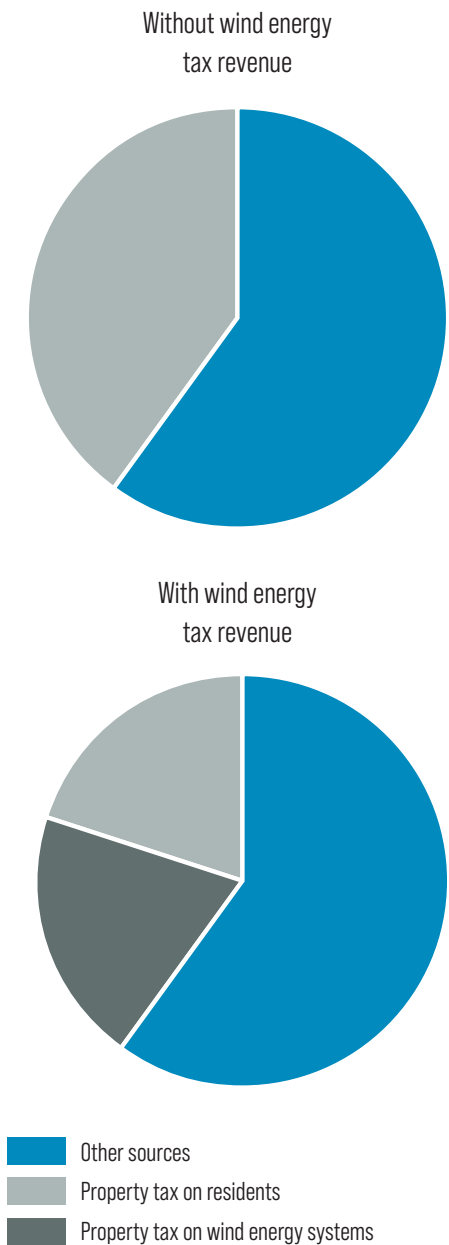
TIF is an alternative taxing method used by counties and municipalities to finance community improvement projects that are determined to create economic development.¹⁶ This method is advantageous for counties because it allows them to access funds

14 “Uniform Chart of Accounts For Iowa County Governments.” Iowa Department of Management, County Finance Committee, 2018, domiowa.gov/sites/default/files/documents/2018/10/uniform_chart_of_accounts_10-2018.pdf. Accessed March 2023.

15 “Iowa Property Tax Overview.” Iowa Department of Revenue, tax.iowa.gov/iowa-property-tax-overview. Accessed March 2023.

16 “Iowa Code 2023, Chapter 403 (48, 1).” Iowa Legislature, Dec. 29, 2022, legis.iowa.gov/DOCS/ACO/IC/LINC/Chapter.403.pdf. Accessed March 2023.

Figure 4. Makeup of a total county budget example



for special projects faster than collecting annual revenues and to do so without raising taxes on taxpayers.

The process begins with the approval of projects and placing them in urban renewal areas with the turbines. Including the turbines in the urban renewal areas allows most of the money to go toward projects. For an area to be eligible as an urban renewal area, it must be in need of economic development, and rehabilitation must be necessary for public safety or the welfare of residents. The use of the term “urban renewal” doesn’t require that the improvement projects occur in an urban area,

as the only geographical limitation is that it cannot occur on land zoned agricultural.¹⁷

A potential urban renewal area project could include revitalizing a downtown area or repaving a county road with funds acquired through the taxation of wind turbines.

Once the urban renewal areas are set and the proposed projects are approved, the county issues bonds backed by the projected future tax collection caused by increased property value. The debt created by those bonds is ultimately paid off through taxation of the increment. The incremental value is the growing separation of the increased property value over the frozen, or base, value from when the turbines were introduced. The property tax applied to the incremental value is then deposited into a special county fund to pay off debts incurred by the urban renewal projects.¹⁸

Figure 5 on page 6 shows the incremental value growing over the base value over time using the special valuation. The base value remains in the total valuation of the county and is taxed as it normally would be. The percentage represents the rate at which the total acquisition cost is assessed. The increment is taxed separately and mostly goes into a special fund to pay off TIF debts. Data was created for the example in Figure 5.

In the case of all these applications of TIF, wind energy systems are the primary source of the increased property value. That value is included in the county’s total property valuation and the incremental value is subtracted from the total and taxed separately. This means the frozen base value of the property will continue to be taxed as it normally would.¹⁹

See Figure 6 on page 6 for an explanation of how the incremental value is subtracted from the tax base and is deposited into a fund to pay off bonds for urban renewal projects. Without TIF, the total value of the wind energy systems stays within the tax base.

17 Crowley, Susan. “Legislative Guide to Urban Renewal and Tax Increment Financing.” Legislative Services Agency, December 2007, legis.iowa.gov/DOCS/Central/Guides/urbannew.pdf. Accessed March 2023.

18 Ibid.

19 Ibid.

Figure 5. Increased taxable value using the special valuation

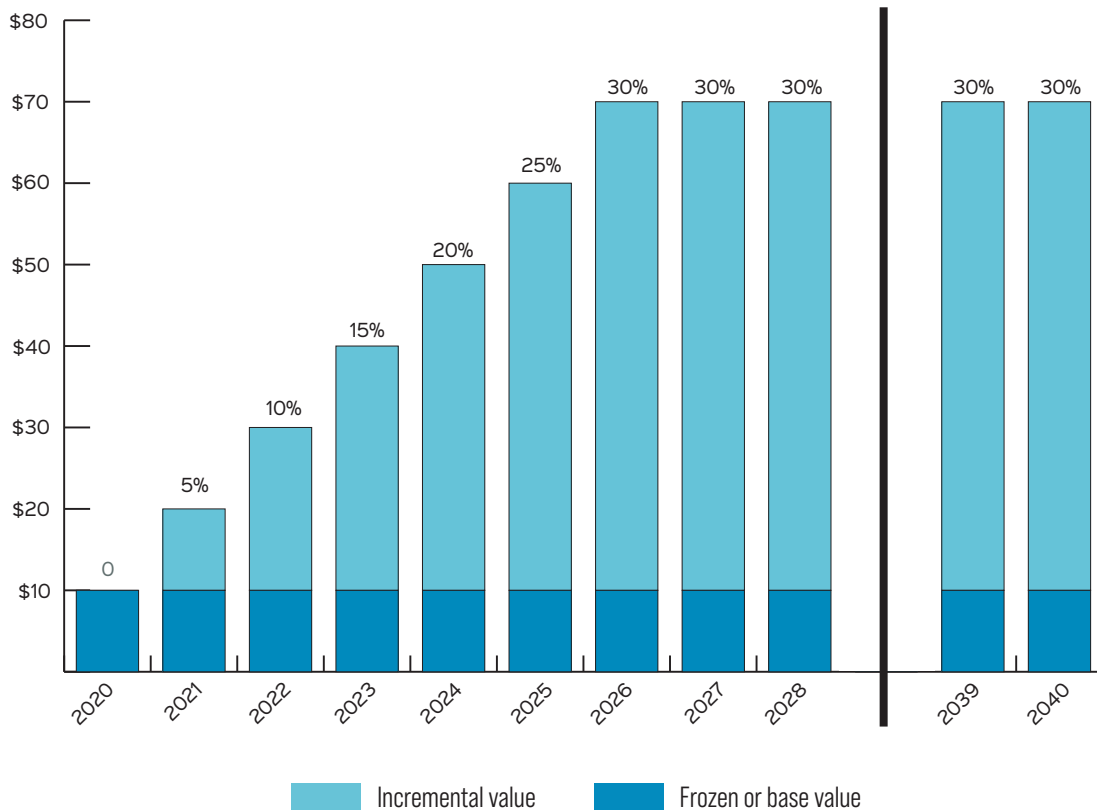
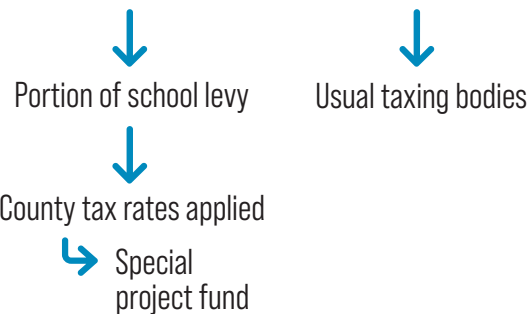


Figure 6. Taxing method formulas, comparison

TIF Method

Total special valuation → incremental value + base value

5-30% of net acquisition cost depending on year after installation



Standard Taxing Method

Total special valuation → Usual taxing bodies



III. Story County Case Study

A. Background and taxing method

Story County in central Iowa and has a population of about 98,000, 30% of which is outside of Ames.^{20,21} The county has 137 wind turbines with a total capacity of 228 MW. Its largest development—Story County Project—went online in 2008. The project has 100 turbines with a capacity of 150 MW, and is spread across the northeastern quarter of the county.²²

Story County elected to implement the TIF method to finance a variety of special projects. All turbines within the county’s borders have been placed into TIF districts and are the source of funding for the county’s urban renewal projects.²³

See Table 2 for an outline of the total valuations of wind projects in Story County.²⁴ These are based on the acquisition cost of each turbine. With the special valuation applied, they start at 0% and increase by 5% until maxing out at 30%. These valuations are the basis of the amount of TIF revenue collected.

20 “QuickFacts: Story County, Iowa.” U.S. Census Bureau, July 21, 2021, [census.gov/quickfacts/fact/table/storycountyiowa/PST045221](https://www.census.gov/quickfacts/fact/table/storycountyiowa/PST045221). Accessed March 2023.

21 “QuickFacts: Ames city, Iowa.” U.S. Census Bureau, July 21, 2022, [census.gov/quickfacts/amescityiowa](https://www.census.gov/quickfacts/amescityiowa). Accessed March 2023.

22 “U.S. Wind Turbine Database.” U.S. Geological Survey, Berkeley Lab, and American Clean Power, January 2023, eerscmap.usgs.gov/uswtodb/viewer/#9.99/42.0841/-93.4903. Accessed March 2023.

23 “Urban Renewal Plan, Story County Urban Renewal Area.” Story County, Iowa, November 2020, storycountyiowa.gov/DocumentCenter/View/11968/Amended-URA-Plan. Accessed March 2023.

24 Personal communication, Wayne V. Schwickerath, Story County assessor, Dec. 5, 2022.

Table 2. Total valuations of wind projects, Story County

Year	Total special valuation of all turbines in the county
2009	\$-
2010	\$12,657,925
2011	\$28,199,306
2012	\$43,740,686
2013	\$59,409,391
2014	\$76,035,946
2015	\$92,662,501
2016	\$96,631,131
2017	\$97,716,305
2018	\$98,801,479
2019	\$101,312,473
2020	\$102,865,616
2021	\$104,418,760
2022	\$105,971,903
2023	\$107,525,046
2024	\$109,078,189

As shown in Table 3 on page 8, the total frozen taxable value from when each of the turbines was implemented is subtracted from its taxable value, which becomes the increment.²⁵ The 2022 levy rate is applied to the increment and results in the TIF revenue. Per county guidelines, only 50% of the revenues raised for urban renewal projects can be used. The remaining 50% is reserved for regular taxing bodies to ensure their operations will experience minimal impact.²⁶

25 Personal communication, Rhonda S. Sykes, Story County deputy auditor of real estate, Dec. 6, 2022.

26 “Economic Development Process and Policies.” Story County, Iowa, May 18, 2021, storycountyiowa.gov/DocumentCenter/View/12147/TIF-Policy-Documents-Adopted-2021-Revisions-May-18?bidId=. Accessed March 2023.

B. Story County TIF projects

Once urban renewal areas are established, the Story County Board of Supervisors begins collecting applications for urban renewal projects on an annual basis. Applications must be for projects falling under the following categories and cannot be a direct disbursement or rebate to a private entity:²⁷

- Transportation infrastructure enhancement.
- Public land and trail improvement.
- Communication and utility infrastructure expansion.
- Main street and town center revitalization.
- Housing development, rehabilitation, and/or conversion.

See Figure 7 on page 9 for Story County’s Urban Renewal Plan. Numbers indicate TIF projects.²⁸ Rather than fully funding a small number of projects, Story County’s strategy is to spread the funds out. They encourage applicants to look for other avenues with which the project can be funded, and also require that applicants match 25% of a project’s total cost.²⁹

In all, TIF has supplied \$8.97 million in funding for urban renewal projects across Story County, with an equal amount going into schools and other county services.³⁰

The approved urban renewal projects in Story County can be categorized into two sections: infrastructure and quality-of-life enhancements.

1. Infrastructure

The majority of the infrastructure projects have been water-related, with some funds going toward transportation enhancements.

27 “Urban Renewal Plan, Story County Urban Renewal Area.” Story County, Iowa, November 2020, storycounty.iowa.gov/DocumentCenter/View/11968/Amended-URA-Plan. Accessed March 2023.

28 Ibid.

29 “Economic Development Process and Policies.” Story County, Iowa, May 18, 2021, storycountyiowa.gov/DocumentCenter/View/12147/TIF-Policy-Document-Adopted-2021-Revisions-May-18?bidId=. Accessed March 2023.

30 Personal communication, Wayne V. Schwickerath, Story County assessor, Aug. 3, 2022.

Table 3. 2022 TIF financial totals, Story County

Total taxable value	\$98,479,433
Total frozen taxable	\$2,488,357
Increment	\$95,991,076
Estimated TIF revenue	\$1,829,803

In McCallsburg, Iowa (pop. 479), TIF funds provided \$65,000 for a water-looping project needed to improve the treatment of municipal drinking water and increase fire-suppression capabilities.^{31,32} The towns of Collins (pop. 431), Kelley (pop. 381), and Maxwell (pop. 739) used a combined \$91,000 in TIF funding for water line improvement projects.^{33,34,35,36}

Collins and Maxwell also received funding for transportation enhancements. Collins was awarded \$23,000 for a retention area on the outskirts of town to improve the drainage system, while Maxwell received \$30,000 for the installment of a curb and gutter system for one of its main roads downtown.³⁷

2. Quality-of-life enhancements

Urban renewal projects for quality-of-life enhancements have included revitalizing main streets and town centers, improvements to public land and trails, park installations, and building renovations. These have been the overwhelming focus in Story County.

31 “McCallsburg, IA.” Census Reporter, censusreporter.org/profiles/16000US1947775-mccallsburg-ia. Accessed March 2023.

32 Personal communication, Wayne V. Schwickerath, Story County assessor, Aug. 3, 2022.

33 “Collins, IA.” Census Reporter, censusreporter.org/profiles/16000US1915195-collins-ia/. Accessed April 2023.

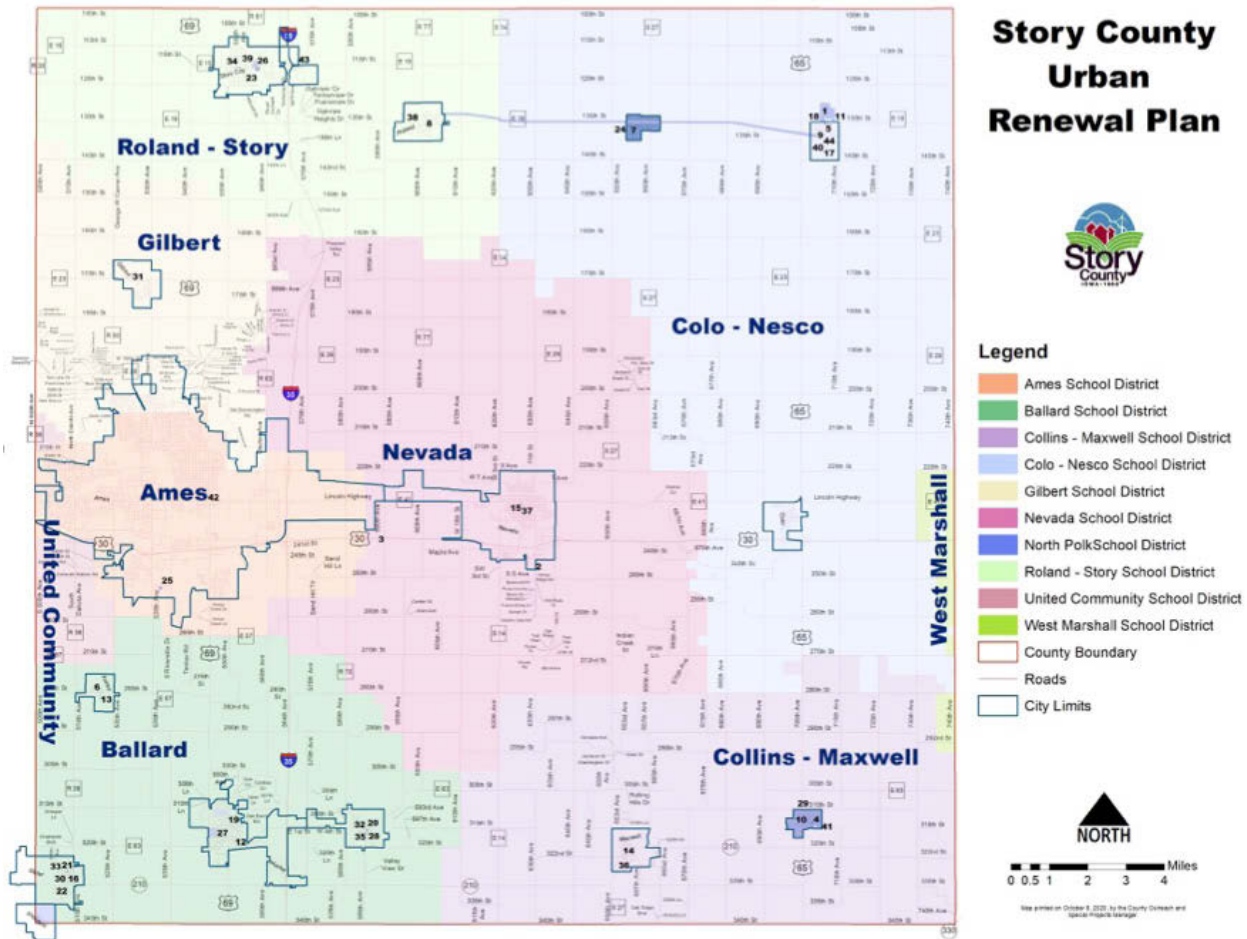
34 “Kelley, IA.” Census Reporter, censusreporter.org/profiles/16000US1940395-kelley-ia/. Accessed April 2023.

35 “Maxwell, IA.” Census Reporter, censusreporter.org/profiles/16000US1950520-maxwell-ia. Accessed March 2023.

36 Personal communication, Wayne V. Schwickerath, Story County assessor, Aug. 3, 2022.

37 Ibid.

Figure 7. Urban Renewal Plan, Story County



For example, from 2014 to 2017, Slater (pop. 1,463), Gilbert (pop. 1,088), Zearing (pop. 547), Story City (pop. 3,411), and Collins (pop. 5,110) made \$550,000 in improvements to their main streets in the form of repaving, street lighting, and building renovations.^{38,39,40,41} Slater alone invested \$236,000 in its town center between 2014 and 2018. Work included main street improvements, decorative sidewalks, new street lighting, and parking area replacements. It also included the acquisition and renovation of a downtown property, which is now the

38 Ibid.

39 “Gilbert, IA.” Census Reporter, censusreporter.org/profiles/16000US1930630-gilbert-ia. Accessed March 2023.

40 “Zearing, IA.” Census Reporter, censusreporter.org/profiles/16000US1987555-zearing-ia. Accessed March 2023.

41 “Slater, IA.” Census Reporter, censusreporter.org/profiles/16000US1973515-slater-ia. Accessed March 2023.

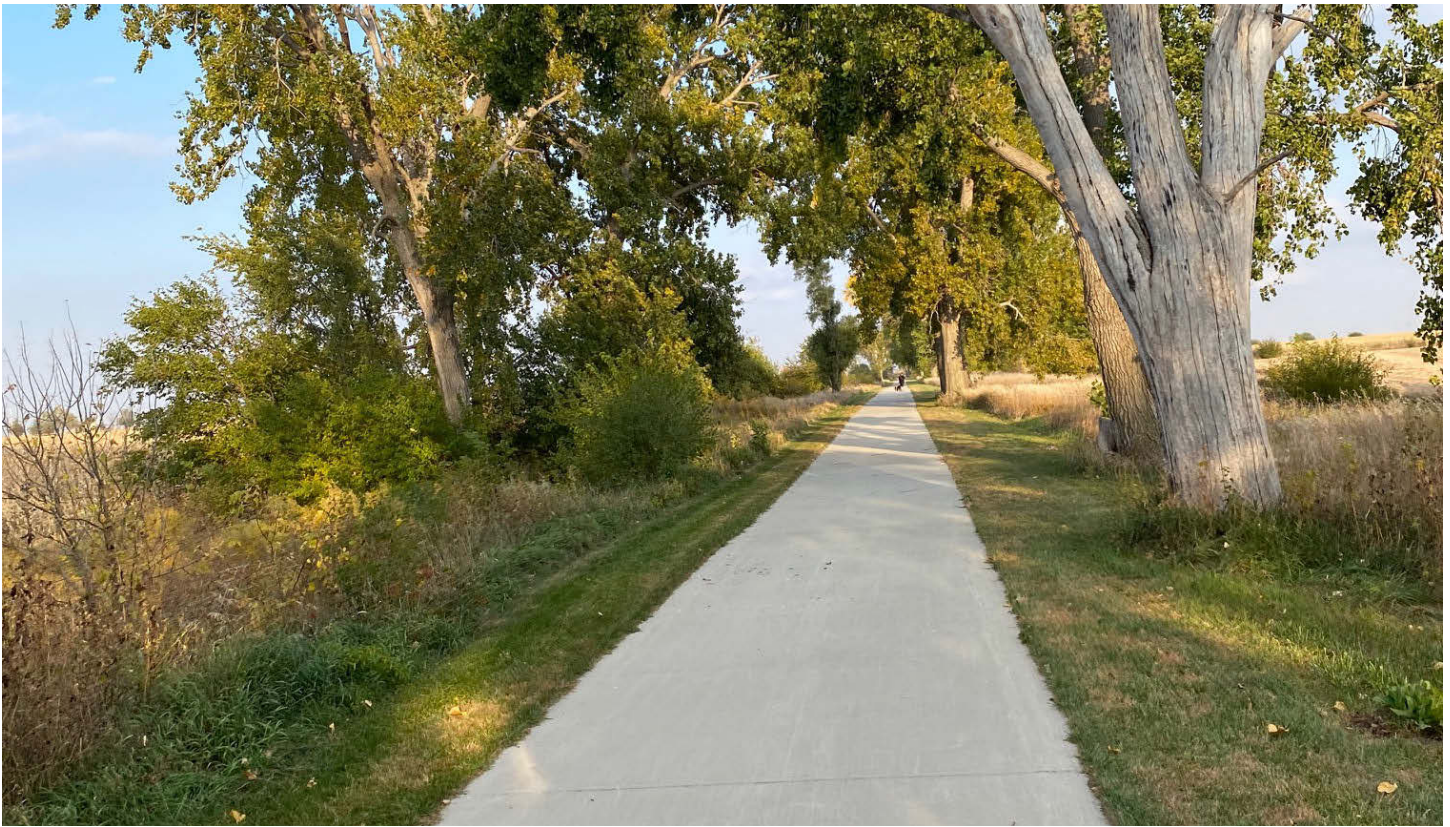
headquarters for a biotechnology company.⁴² Similar projects in other towns all make a more welcoming and pleasant environment.

Other communities used a combined \$500,000 in wind energy revenue to make improvements to or for the creation of community parks.⁴³ Story City, specifically, received nearly \$200,000 for improvements to its north and south parks. These included installations of new benches, trash receptacles, bike racks, building lights, historical plaques, and a “Boulevard Gateway” sign.⁴⁴ The Colo-Nesco

42 “Urban Renewal Plan, Story County Urban Renewal Area.” Story County, Iowa, November 2020, storycounty.iowa.gov/DocumentCenter/View/11968/Amended-URA-Plan. Accessed March 2023.

43 Personal communication, Wayne V. Schwickerath, Story County assessor, Aug. 3, 2022.

44 “Urban Renewal Plan, Story County Urban Renewal Area.” Story County, Iowa, November 2020, storycounty.iowa.gov/DocumentCenter/View/11968/Amended-URA-Plan. Accessed March 2023.



Just outside of Huxley in Story County, TIF provided \$13,000 for the paving of the Heart of Iowa Nature Trail.

School District received \$75,000 for a new park on three vacant lots next to the elementary school.⁴⁵ Not only do park projects improve the enjoyment and welfare of the communities, they have been shown to increase the property value in their immediate vicinities, another indirect benefit to the county.⁴⁶

In Cambridge (pop. 941), TIF provided \$155,000 toward a new community center and \$45,000 to revitalize the community’s 1914 opera house on its main street. The opera house redevelopment will include two commercial units on the first floor and three low-cost housing units on the second.⁴⁷ This will provide more living and business development opportunities for the small town.

45 Personal communication, Wayne V. Schwickerath, Story County assessor, Aug. 3, 2022.

46 Crompton, John L. “How Much Impact Do Parks Have on Property Values?” National Recreation and Park Association, March 26, 2020, nrpa.org/parks-recreation-magazine/2020/april/how-much-impact-do-parks-have-on-property-values/. Accessed March 2023.

47 “Cambridge, IA.” Census Reporter, censusreporter.org/profiles/16000US1910225-cambridge-ia. Accessed March 2023.

C. Looking ahead

Story County has prioritized investing TIF funds into revitalizing local business hubs, believing this focus will create more jobs and economic growth. County leaders have started to see their decisions pay off as buildings have been revitalized and are being used as new places for business.

Considering the historical successes in Story County with its prominent 150 MW wind farm, the Board of Supervisors has preemptively set the stage for future renewable energy expansion in the form of solar development. Supervisors have passed a solar ordinance to help to guide any future solar development just like the county’s wind ordinance has in the past.⁴⁸

48 “Chapter 90 Land Development Regulations: Conditional Uses.” Simmering-Cory & Iowa Codification, codelibrary.amlegal.com/codes/storycounty/latest/storycount_ia/0-0-0-3220. Accessed March 2023.

Table 4. Actual incremental values and estimated TIF revenue

Years	Total incremental value of Ida Grove I with substations	Total incremental value of Ida Grove II with substations	Overall total incremental value	Estimated consolidated levy	TIF revenue, estimated
2019/2020	\$21,837,838.50	\$-	\$21,837,838.50	0.016	\$349,405.42
2020/2021	\$43,349,337.90	\$-	\$43,349,337.90	0.016	\$693,589.41
2021/2022	\$64,609,234.44	\$-	\$64,609,234.44	0.016	\$1,033,747.75
2022/2023	\$86,751,914.40	\$15,935,633.00	\$102,687,547.40	0.016	\$1,643,000.76
2023/2024	\$108,065,187.41	\$31,871,266.60	\$139,936,454.01	0.016	\$2,238,983.26
2024/2025	\$129,601,598.89	\$47,806,899.90	\$177,408,498.79	0.016	\$2,838,535.98
2025/2026	\$129,693,955.50	\$63,742,533.20	\$193,436,488.70	0.016	\$3,094,983.82
2026/2027	\$129,693,955.50	\$79,678,166.50	\$209,372,122.00	0.016	\$3,349,953.95
2027/2028	\$129,693,955.50	\$95,613,799.80	\$225,307,755.30	0.016	\$3,604,924.08
2039/2040	\$-	\$95,613,800.00	\$95,613,800.00	0.016	\$1,529,820.80
2040/2041	\$-	\$95,613,800.00	\$95,613,800.00	0.016	\$1,529,820.80
2041/2042	\$-	\$95,613,800.00	\$95,613,800.00	0.016	\$1,529,820.80

Note: The consolidated levy and subsequent TIF revenue are estimates.



IV. Ida County Case Study

A. Background and taxing method

Ida County (pop. 6,862), in northwestern Iowa, is in an area with one of the highest potentials for wind energy production. The majority of the state’s wind farms are in this region, with a diagonal line from the southwest corner to the northeast corner, running through Des Moines. Ida County has taken full advantage, with the Ida Grove I and II developments.

Both are owned by MidAmerican Energy. Ida Grove I went online in 2016 and has a total rated capacity of 301 MW from 134 turbines; Ida Grove II went online in 2019 with a rated capacity of 202 MW from 81 turbines. See Figure 8 on page 12.⁴⁹

49 “U.S. Wind Turbine Database.” U.S. Geological Survey, Berkeley Lab, and American Clean Power, January 2023, eerscmap.usgs.gov/uswtdb/viewer/#7.24/42.126/-93.355. Accessed March 2023.

Like Story County, Ida County approved a special valuation for wind turbines and decided to use TIF to fund special projects. The county placed all of its turbines and the approved projects in TIF districts; a similar process was employed when ethanol plants were introduced nearly 20 years ago.⁵⁰

Where the process differs is in how the financing was used. Ida County has focused its funding on a small number of necessary but expensive infrastructure projects like the repavement of county roads. **Without this revenue, Ida County officials say they wouldn’t have had the financial resources to do the projects without increasing its tax levy.**

See Table 4 for an estimate of the TIF revenue of the two major wind projects in Ida County.⁵¹ The total incremental valuation is the increase over the frozen value which is caused by the special valuation of the initial acquisition cost. The consolidated levy is a variable rate that can slightly alter the actual revenue collected. For example, the county will collect \$1.8 million in 2023 in tax revenue from the wind projects, slightly higher than the estimate. This money will be routed to a special fund and used to repay debt

50 Personal communication, Jeff Williams, Ida County engineer, Nov. 30, 2022.

51 Personal communication, Lorna Steenbock, Ida County auditor, Dec. 1, 2022.

on urban renewal projects. The special fund also includes incremental revenue from other development sources, like the ethanol plants mentioned earlier. **According to the Ida County auditor, about 95% of the funds used for the projects mentioned are from wind projects in the county.**

Most of the incremental value goes to the county, but it is important to note that schools are able to take advantage of the increased property value as well. The base value of the property is taxed normally, which means the county will not experience a decrease in collections when the turbines are installed. Furthermore, the schools are able to collect a portion of the increment. According to state law, schools are able to collect physical plant and equipment levy rates paid exclusively to the school.⁵² In 2020, Ida County school districts applied about 35% of their normal rates to that increased property value.⁵³ So in the end, with TIF installed, schools still see an increase in revenue.

52 Crowley, Susan. "Legislative Guide to Urban Renewal and Tax Increment Financing." Legislative Services Agency, December 2007, legis.iowa.gov/DOCS/Central/Guides/urbannew.pdf. Accessed March 2023.

53 Personal communication, Lorna Steenbock, Ida County auditor, Dec. 1, 2022.

B. Ida County TIF projects

The impact in Ida County has been clear. Revenue generated from the taxes paid by the owners of the wind energy systems has gone into repairing 42 miles of roads across the county.⁵⁴ The longest stretch was a concrete overlay of County Highway M31, completed in 2021 from US-20 through Arthur (pop. 228) to IA-39 as it comes into Kiron (pop. 321).^{55,56} The repavement spanned 20 miles and would have cost Ida County residents \$14.2 million but was completely covered by TIF.⁵⁷ Another larger road project was completed in 2020 and covered 11.5 miles of D-15 into Galva (pop. 420)

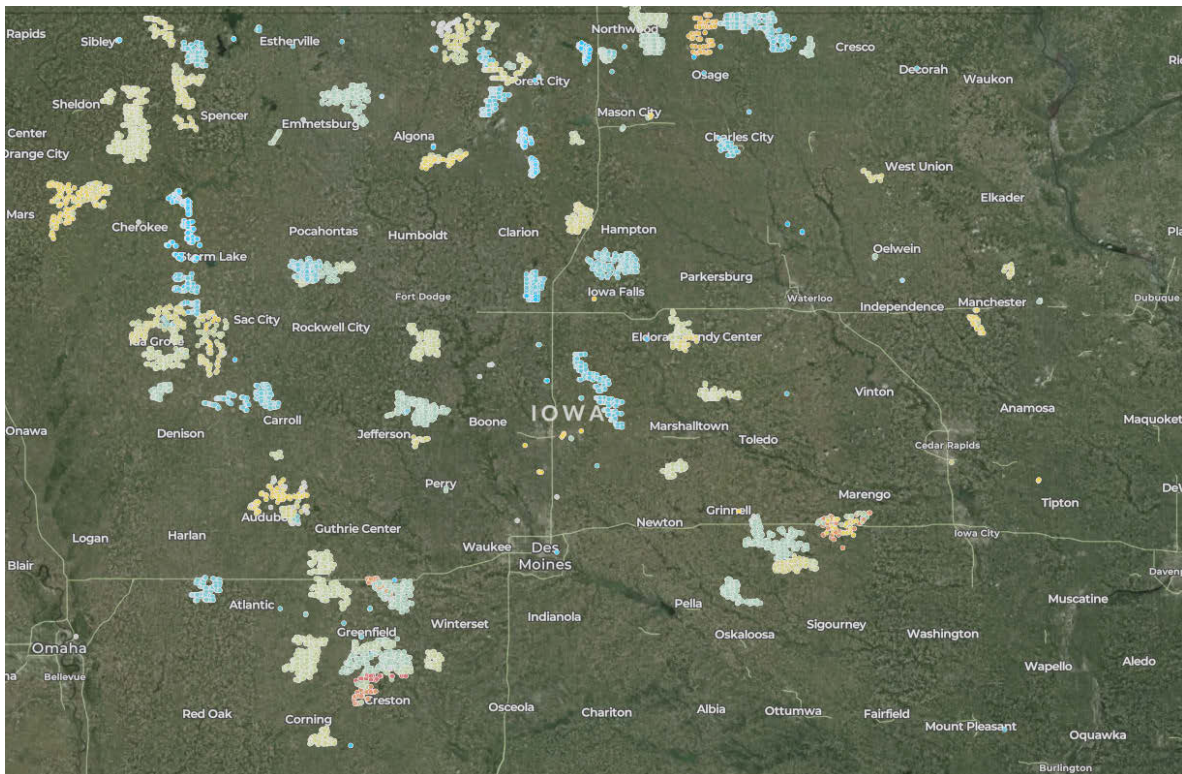
54 Personal communication, Jeff Williams, Ida County engineer, Nov. 29, 2022.

55 "Arthur, IA." Census Reporter, censusreporter.org/profiles/16000US1903115-arthur-ia. Accessed March 2023.

56 "Kiron, IA." Census Reporter, censusreporter.org/profiles/16000US1941610-kiron-ia. Accessed March 2023.

57 Personal communication, Jeff Williams, Ida County engineer, Nov. 29, 2022.

Figure 8. Wind projects in Iowa



with project costs totaling \$6.3 million.^{58,59} One project, which began in September 2022, is an 8-mile stretch of Jasper Avenue, from D-54 to Ida Grove, with a total project cost of \$8.9 million.⁶⁰ The county also completed the installation of a box culvert in lieu of a bridge, something farmers prefer because of their wide equipment, with project costs totaling \$229,561.⁶¹

In addition to large road infrastructure projects, the county distributed \$3 million to refurbish the courthouse’s main entrance to make it safer and Americans with Disabilities Act (ADA) accessible.⁶² This was the only project that was supplemented by another source of funding; \$2 million came from TIF and the remainder from a federal program.⁶³

In total, Ida County bonded out \$35.4 million for improvement projects.⁶⁴ Had bond proceeds not been secured from the wind turbines, county officials would have had to resort to short-term maintenance solutions, such as patchwork or asphalt overlays, and required an increase in the levy to pay for them. In some cases, the turbines were the difference between paved and gravel roads for this rural county. And in many cases, the road width expanded, which is especially important for the safety of large vehicles. Ida County has multiple ethanol plants within its borders, and the trucks carrying materials to and from the plants rely on strong roads. See Figure 9.

C. Looking ahead

With more wind development, the county would be able to work on repairing its bridges, further increasing the safety and reliability of the local transportation infrastructure.⁶⁵ As stated by the auditor, the county has maxed out its loan indebtedness for the current projects and would need

58 Ibid.

59 “Galva, IA.” Census Reporter, censusreporter.org/profiles/16000US1929595-galva-ia. Accessed March 2023.

60 Personal communication, Jeff Williams, Ida County engineer, Nov. 29, 2022.

61 Ibid.

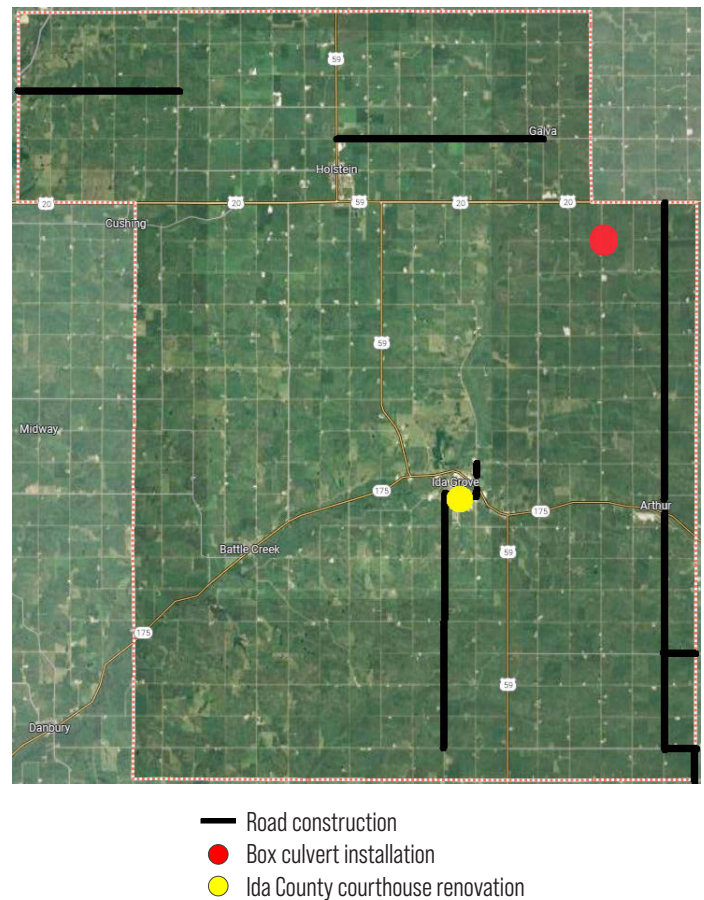
62 Personal communication, Jeff Williams, Ida County engineer, Nov. 30, 2022.

63 Personal communication, Lorna Steenbock, Ida County auditor, Dec. 1, 2022.

64 Ibid.

65 Personal communication, Jeff Williams, Ida County engineer, Nov. 30, 2022.

Figure 9. Urban renewal projects completed by Ida County



further wind development for new projects. Bridges are a major issue for rural communities across the country, especially in Iowa. According to an assessment done by TRIP, a national transportation research nonprofit, 21% of Iowa’s rural bridges are rated poor/structurally deficient, which is the highest share nationally.⁶⁶

The county has seen the successful development of three more wind projects. That success is due to the high potential the county has for wind production and the forethought of officials to ensure proper development through an ordinance. County leaders believe one reason for the ordinance’s success is it gives landowners the ability to make decisions about what is best for their land.

66 Moretti, Rocky and Carolyn Bonifas Kelly. “News Release: U.S. rural roads & bridges have significant deficiencies, high fatality rates & lack adequate capacity; backlog of needed repairs & improvements to rural roads & bridges totals \$180 billion.” TRIP, Oct. 13, 2022, tripnet.org/reports/rural-connections-national-news-release-10-13-2022. Accessed March 2023.



V. Marshall County Case Study

A. Background and taxing method

Marshall County (pop. 40,000) is just east of Story County in central Iowa and has three major wind farms: Laurel, Vienna I, and Vienna II. Laurel went online in 2011 and has a capacity of 120 MW with 52 turbines, Vienna I went online in 2012 and has a capacity of 106 MW with 45 turbines, and Vienna II went online in 2013 with a capacity of 45 MW with 19 turbines.⁶⁷

During initial discussions around taxing wind energy systems, Marshall County residents found TIF controversial due to the tax reallocation away from normal taxing bodies. With TIF, school districts, for example, receive just a portion of the rate that would have applied to the increased property value. So overall, they would experience an increase in funds, but it would be significantly less with TIF. Marshall County residents wanted vital services such as school, public health and safety, and other government services to benefit from the full increase of the tax base.

B. Impact

Figures 10 and 11 show the proportion of the wind energy revenue as compared to the total property tax levy on taxpayers. Figures were calculated through Marshall County's 2020 budget report.⁶⁸

In tax assessment year 2020, Marshall County collected \$2.4 million of wind energy tax revenue.

67 "U.S. Wind Turbine Database." U.S. Geological Survey, Berkeley Lab, and American Clean Power, January 2023, eerscmap.usgs.gov/uswtodb/viewer/#7.24/42.126/-93.355. Accessed March 2023.

68 "Independent Auditors' Reports Basic Financial Statements and Supplementary Information Schedule of Findings." Marshall County, Iowa, June 30, 2020, marshallcountya.gov/DocumentCenter/View/1083/FY-2020. Accessed March 2023.

Figure 10. 2020 total revenues, Marshall County

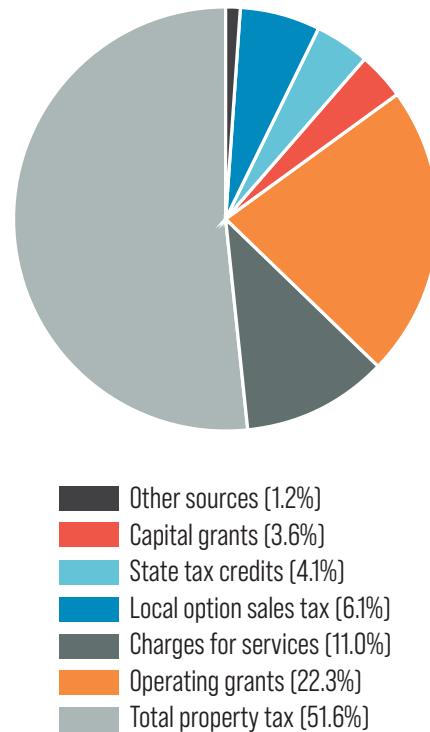


Figure 11. 2020 total revenues with turbines, Marshall County

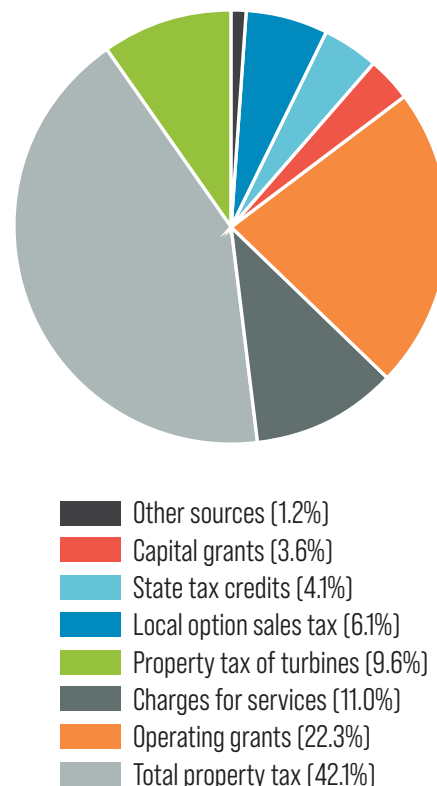


Table 5. Estimated total assessed valuations of wind farms, Marshall County

Year	Laurel	Vienna I	Vienna II	Total
2012	\$31,580.00	\$-	\$-	\$31,580.00
2013	\$10,268,560.00	\$48,710.00	\$-	\$10,317,270.00
2014	\$20,537,375.00	\$4,677,071.00	\$-	\$25,214,446.00
2015	\$30,806,084.00	\$9,307,745.00	\$3,284,340.00	\$43,398,169.00
2016	\$41,110,750.00	\$13,937,137.00	\$6,558,490.00	\$61,606,377.00
2017	\$51,377,267.00	\$18,566,655.00	\$9,852,560.00	\$79,796,482.0
2018	\$61,643,630.00	\$23,196,045.00	\$13,137,075.00	\$97,976,750.00
2019	\$61,643,630.00	\$27,825,560.00	\$16,421,320.00	\$105,890,510.00
2020	\$61,643,630.00	\$27,825,560.00	\$19,705,660.00	\$109,174,850.00
2021	\$61,643,630.00	\$27,825,560.00	\$19,705,660.00	\$109,174,850.00

That year, the county’s total revenue was \$25.1 million, meaning the Laurel and Vienna wind projects provided 9.5% of the county’s overall tax revenue.⁶⁹ Without it, the levy on taxpayers would have increased 22.7% to maintain the same amount of revenue to cover expenses.

See Table 5 for the total valuation of the wind energy systems in Marshall County.⁷⁰ In 2020, all three projects reached their maximum valuation.

The decision to use a standard taxing method can be especially important for rural counties with smaller budgets, where the impact felt by the school district would be greater than in counties where the reallocated funds make up less of the overall budget. One benefit for townships is that they can decide whether to increase their budgets with the newfound revenue or keep the same level of services or expenses and decrease the levy. It essentially gives the county more value to work with every year for the benefit of taxpayers. Using the standard taxing method rather than TIF allows schools, emergency medical services, and other taxing bodies to experience a greater impact from the additional revenue. Tax valuations and estimated tax revenue for each school district are shown in Tables 6 and 7 on page 16.⁷¹

Table 7 shows revenue estimates for each district with wind turbines.⁷² The 2020 valuation estimate

69 Personal communication, Whitney Hunt, Marshall County assistant auditor and recorder, Oct. 19, 2022.

70 Ibid.

71 Ibid.

72 “2020 Tax Rates for Taxes Payable 2021-2022, Marshall County.” Marshall County Iowa, marshallcountyia.gov/DocumentCenter/View/1367/2020-Tax-Rates-for-Taxes-Payable-FY-2021-22. Accessed March 2023.

was provided by the county auditor’s office. A 90% rollback was applied to that valuation to determine the taxable value, which was then multiplied by the school district’s 2020 tax rate.⁷³ The largest revenue comes from the East Marshall Community School District. With a total enrollment of 787 students, the revenue from wind turbines provides \$668 per student.⁷⁴ In total, Marshall County schools received an estimated \$1.34 million from wind turbines in 2020.

C. Looking ahead

Marshall County adopted a wind ordinance two years before the first project went online in 2010.⁷⁵ The ordinance ensured the proper development of all three wind farms. County officials have not seen formal opposition to the turbines and know the turbines provide a significant benefit. As a result, they believe officials would be open to further wind development.

73 Benson, Nan. “Property Tax Calculation Process.” Marshall County, Iowa, January 2019, marshallcountyia.gov/DocumentCenter/View/1389/How-to-Calculate-Property-Taxes. Accessed March 2023.

74 “Overview of East Marshall Community School District.” U.S. News & World Report, usnews.com/education/k12/iowa/districts/east-marshall-comm-school-district-110876. Accessed March 2023.

75 Black, Ken. “Marshall County passes wind farm ordinance.” Wind Action, May 25, 2010, windaction.org/posts/26486-marshall-county-passes-wind-farm-ordinance. Accessed March 2023.

Table 6. Assessed valuations of turbines by school district

Assessed valuations	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Laurel Wind Farm										
East Marshall Community Schools (34 wind turbines)	\$31,580	\$6,814,540	\$13,629,245	\$20,443,880	\$27,294,490	\$34,106,915	\$40,919,240	\$40,919,240	\$40,919,240	\$40,919,240
Marshalltown Schools (18 wind turbines)	\$0	\$3,454,020	\$6,908,130	\$10,362,204	\$13,816,260	\$17,270,352	\$20,724,390	\$20,724,390	\$20,724,390	\$20,724,390
Vienna I Wind Farm										
Green Mountain-Garwin Schools (15 wind turbines)	\$0	\$0	\$2,751,250	\$5,502,500	\$8,253,675	\$11,004,925	\$13,756,100	\$16,507,350	\$16,507,350	\$16,507,350
Beaman Conrad Liscomb Union Whitten Schools (6 wind turbines)	\$0	\$0	\$1,098,000	\$2,196,000	\$3,293,970	\$4,391,970	\$5,489,940	\$6,587,940	\$6,587,940	\$6,587,940
Gladbrook-Reinbeck Schools (4 wind turbines)	\$0	\$0	\$732,000	\$1,464,000	\$2,195,980	\$2,927,980	\$3,659,960	\$4,391,960	\$4,391,960	\$4,391,960
Vienna II Wind Farm										
Green Mountain-Garwin Schools (6 wind turbines)	\$0	\$0	\$0	\$1,037,160	\$2,074,260	\$3,111,420	\$4,148,550	\$5,185,680	\$6,222,840	\$6,222,840
Beaman Conrad Liscomb Union Whitten Schools (13 wind turbines)	\$0	\$0	\$0	\$2,247,180	\$4,484,230	\$6,741,140	\$8,988,525	\$11,235,640	\$13,482,820	\$13,482,820

Table 7. Estimated school tax revenue by district

Wind farms, school districts	2020 assessed valuations	2020 valuation including 90% rollback	2020 school district tax rates	School's tax revenue
Laurel Wind Farm				
East Marshall Community Schools (34 wind turbines)	\$40,919,240	\$36,827,316	0.01433111	\$527,776
Marshalltown Schools (18 wind turbines)	\$20,724,390	\$18,651,951	0.01813904	\$338,328
Vienna I Wind Farm				
Green Mountain-Garwin Schools (15 wind turbines)	\$16,507,350	\$14,856,615	0.01227798	\$182,409
Beaman Conrad Liscomb Union Whitten Schools (6 wind turbines)	\$6,587,940	\$5,929,146	0.01024445	\$60,741
Gladbrook-Reinbeck Schools (4 wind turbines)	\$4,391,960	\$3,952,764	0.01007882	\$39,839
Vienna II Wind Farm				
Green Mountain-Garwin Schools (6 wind turbines)	\$6,222,840	\$5,600,556	0.01227798	\$68,764
Beaman Conrad Liscomb Union Whitten Schools (13 wind turbines)	\$13,482,820	\$12,134,538	0.01024445	\$124,312

IV. Acknowledgements

Thank you to the county officials from Story, Marshall, and Ida counties for sharing their time and resources in the making of this report.

Story County

- County Supervisor Linda Murken
- Deputy Auditor of Real Estate Rhonda Sykes
- County Assessor Wayne Schwickerath
- County Outreach and Special Projects Manager Leanne Harter

Ida County

- County Auditor Lorna Steenbock
- County Engineer Jeff Williams

Marshall County

- County Auditor Nan Benson
- Assistant Auditor and Recorder Whitney Hunt

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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.