

# **The Economic, Fiscal, and Social Impacts of Utility-Owned Coal-Fired Power Plants in Iowa**

A study prepared for the Iowa Environmental Council by Iowa State University  
Extension and Outreach

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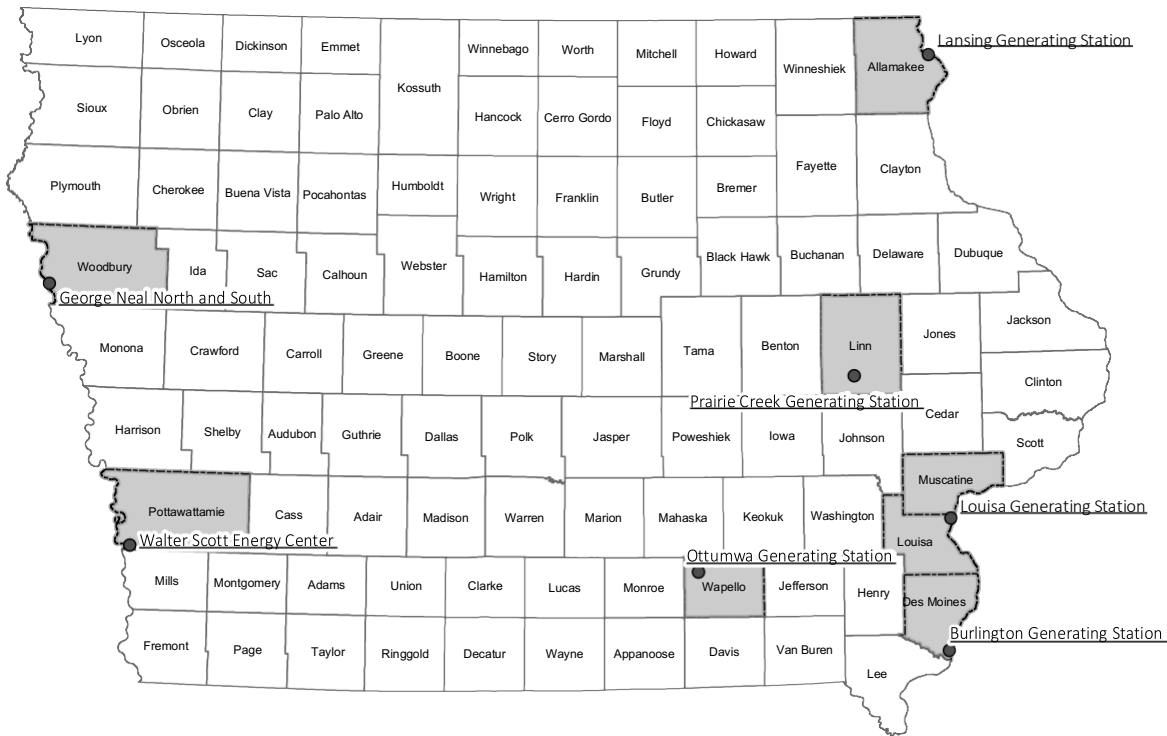
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# Introduction and Methodology

On August 18, 2015, local officials, employees, and executives of Alliant Energy (a public utility holding company) gathered at the Lansing Generating Station located outside Lansing, Iowa, in Allamakee County. They were there for a ribbon-cutting ceremony celebrating the completion of a \$58 million-dollar project.<sup>1</sup> According to the recollection of one elected official, the new scrubbers made the plant one of the “cleanest coal plants in the country.” The facility had already downsized from its peak of more than 100 workers. Still, as for the remaining jobs, “we thought we were in good shape.”<sup>2</sup> However, just over five years later, in October of 2020, Alliant announced that the plant would be closing permanently.<sup>3</sup> This study examines the local economic, fiscal, and social impact of the remaining utility-owned coal-fired power plants in the state to help local and state decision-makers better understand and plan for energy transition.

**Figure 1.1: Utility-Owned Coal Power Plants in Iowa**



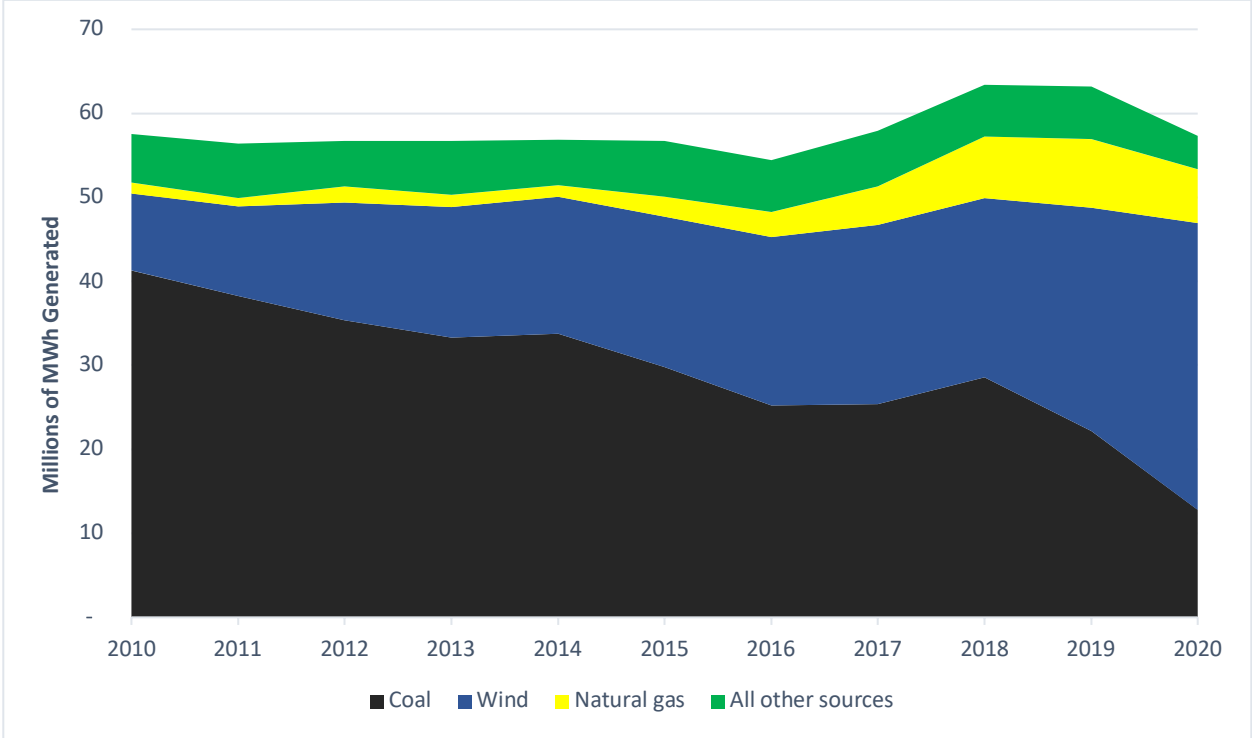
<sup>1</sup> “Alliant Energy breaks ground on air quality improvement project at Lansing facility” *The Standard Newspaper*. August 28, 2015 <https://www.waukonstandard.com/articles/2015/08/26/ribbon-cutting-ceremony-lansing-generating-station-celebrates-completion-project>.

<sup>2</sup> Individual interview conducted by the author April 2021.

<sup>3</sup> Eller, Donnelle. “Alliant plans to close coal-fired power plant in Lansing as it shifts to renewable generation.” *Des Moines Register*. October 29, 2020.

Iowa is currently home to nine utility-owned coal power plants spread across seven counties. According to publicly available data, these plants employ **613** workers directly. Our analysis shows that they support more than **1,376** additional jobs and **\$369,969,957** in economic activity their local economies. However, changes in Iowa’s energy mix are happening quickly. According to detailed state data from the U.S. Energy Information Administration, in 2010, coal made up **72%** of all electricity generated in the state. In 2020, coal plants produced only **22%**. See Graph 1.1: Electricity Generation in Iowa by Source (MWh) below for details. The trend appears to be accelerating. Alliant Energy, one of the two largest electric utilities in the state, has announced plans to eliminate all coal from its generation fleet by 2040.<sup>4</sup>

**Graph 1.1: Electricity Generation in Iowa by Source (MWh)**



Nearly 62% of reported expenditures at the plants were for—primarily out-of-state—purchases of coal, oil, or natural gas. Still, the local impacts of the remaining expenditures are substantial. Wages in these plants tend to be very high, and the Utility Replacement Tax payments to local governments make up a significant percentage of some local budgets. Not all of these plants are currently slated for closure in the near future, but the general trend makes it important to understand what the impacts of closure may be.<sup>5</sup>

<sup>4</sup> See: <https://poweringwhatsnext.alliantenergy.com/clean-energy/iowa/> for details.

<sup>5</sup> U.S. Energy Information Administration (2017). *Electric Power Annual*.

This study was requested by the Iowa Environmental Council, a 501(c)3 nonprofit organization. Iowa State Extension and Outreach Community and Economic conducted this study as a fee-based outreach and assistance service.

We hope that the data and analysis that follows will serve as the basis for continuing conversations at the local and state level. Although coal is still a significant component of Iowa's energy mix, changes will continue to occur as markets and policies continue to evolve. It is never too early to plan for economic transition, and with solid planning and cooperation between local governments, the utilities, and local economic developers, a smooth transition is possible. Even in Allamakee County, where the plant makes up a significant part of many local budgets, officials are optimistic and are already planning for their future. Questions remain about what will happen after this county's plant closes in 2022, but as one economic development official shared, "it's not nearly as scary as when you first start thinking about it."

## **Methodology and Limitations**

This study includes the following elements: 1) Regional economic impacts; 2) Utility Replacement Tax paid to local governments; 3) An analysis of workforce impacts; 4) Local stakeholder interviews; and 5) Surveys on attitudes towards the power plants and their future. Together these elements enable us to paint a detailed picture of the various impacts that potential closures would have on their host communities and help pave the way for local planning efforts around transition.

Any analysis of environmental impacts, costs of demolition, or economic impacts beyond the counties listed are beyond the scope of this report.

For each of the plants, the county in which the plant is located is the unit of analysis. The exception to this is the Louisa Generating station, where we included both Louisa and Muscatine Counties in our economic impact analysis. When two units are found in the same county as in the case of the George Neal Plants (Woodbury County) and the Walter Scott Energy Center (Pottawattamie County), the results of the local impacts of both units are combined in this report. See Table 1.1: Utility-Owned Coal-Fired Power Plants, below, for details of ownership and location of each of the plants we analyzed.

**Table 1.1: Utility-Owned Coal-Fired Power Plants**

Name	Capacity MW (megawatts) <sup>6</sup>	Counties	Ownership <sup>7</sup>
Prairie Creek Generating Station	213.4	Linn	Interstate Power and Light <sup>8</sup> (100%)
George Neal # 3 (North)	584.1	Woodbury	MidAmerican Energy (72%); <b>Interstate Power and Light (28%)</b>
George Neal #4 (South)	695.9	Woodbury	MidAmerican Energy (40.57%); <b>Interstate Power and Light (25.695%)</b> ; Corn Belt Power Cooperative (8.695%); <b>Northwestern Public Service Company (8.681%)</b> ; Northwest Iowa Power Cooperative (4.86%); <b>Algona Municipal Utilities (2.937%)</b> ; Webster City Municipal Utilities (2.604%); <b>Cedar Falls Utilities (2.50%)</b> ; the remaining 3.46% is held by other municipal utilities including the Cities of Bancroft, <b>Coon Rapids</b> , Graettinger, <b>Grundy Center</b> , Laurens, <b>Milford</b> , Spencer.
Burlington Generating Station	212.0	Des Moines	Interstate Power and Light (100%)
Louisa Generating Station	811.9	Louisa and Muscatine	MidAmerican Energy (88%); <b>Central Iowa Power Cooperative (4.6%)</b> ; Interstate Power and Light (4%); <b>City of Waverly, Iowa (1.1%)</b> ; City of Harlan, Iowa (0.8%); <b>City of Tipton, Iowa (0.5%)</b> ; City of Eldridge, Iowa (0.5%); <b>City of Geneseo, Illinois (0.5%)</b>
Ottumwa Generating Station	725.9	Wapello	MidAmerican Energy (52%); <b>Interstate Power and Light (48%)</b>
Walter Scott Energy Center Unit #3	725.8	Pottawattamie	MidAmerican Energy (79.1%); <b>Central Iowa Power Cooperative (11.5%)</b> ; Cedar Falls Utilities (2.88%); <b>Corn Belt Power Cooperative (3.58%)</b> ; Atlantic Municipal Utilities (2.38%)
Walter Scott Energy Center Unit # 4	922.5	Pottawattamie	MidAmerican Energy (60.67%); <b>Lincoln Electric Systems (12.66%)</b> ; Municipal Energy Agency of Nebraska (6.92%); <b>Central Iowa Power Cooperative (9.55%)</b> ; Corn Belt Power Cooperative (4.88%); <b>Cedar Falls Utilities (1.73%)</b>
Lansing Generating Station	274.5	Allamakee	Interstate Power and Light (100%)

<sup>6</sup> The figures in this column are the reported values of each power plant's nameplate capacity, measured in megawatts.

<sup>7</sup> In instances where there are two or more entities that share ownership of a plant, the second owner plus its ownership percentage and every second subsequent company have its name and ownership percentage bolded. This was done solely to improve readability. Ownership is shown as reported in the most recent FERC Form 1.

<sup>8</sup> Interstate Power and Light is a subsidiary of the power utility holding company Alliant Energy.



## **Regional Economic Impact**

The data for economic impact analysis is drawn from public information provided by Alliant Energy (Interstate Power and Light) and MidAmerican Energy in the Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report. This is commonly referred to as the FERC Form 1 and contains each plant's basic economic and operating characteristics. For the model, we used the most recent data available, 2020.

In cases of clear reporting errors, we adjusted the reported figures before we began our analysis. For example, in 2020 MidAmerican Energy reported spending \$1101.831 per barrel on oil at the Ottumwa generating station. The range reported across all plants over the past five years was around \$100 per barrel. In this and in several other similar cases where a mistake appeared obvious, we moved the decimal as appropriate.

Another issue was the presence of minority owners in some of the plants. Utilities only report employment and expenditures reflective of their percentage ownership of a plant. In the case of plants with 100% ownership by a single utility, we used the figures as reported. In cases where MidAmerican Energy and Interstate Power and Light (Alliant) were the only owners, we combined their reported amounts. In cases where there were multiple minority owners, we assumed that their contributions to employment and expenditures were equal to the reported figures by MidAmerican Energy and Interstate Power and Light (Alliant) proportionate to their ownership stake.

Although the data used were collected in 2020, in this report the dollar figures reflect the same values adjusted for 2021 inflation.

## **Understanding Economic Impact**

We used IMPLAN, the most widely used economic impact modeling tool, for our economic analysis. IMPLAN is an analytic tool that relies on an extensive array of secondary public information. In calculating a plant's local spending, the model predicts local purchases based on national averages and regional economic characteristics. While we did not have access to detailed spending from the plants we analyzed, the FERC Form 1 does report overall expenditures and specific figures for fuel expenses. We were also able to obtain actual salary information for union employees from three of the plants and have used these to increase the accuracy of salary calculations.

The economic impact figures are likely to be overstated due to assumptions inherent in the design of IMPLAN. For example, if any of these plants were to disappear tomorrow, IMPLAN cannot account for sources of supplemental income, such as unemployment pay, severance pay, retirement benefits, etc. While we show an estimate of current supported income, the loss of these plants would not result in a total loss of the income and spending shown. We also do not include any modeling of the impacts of potential demolition or redevelopment of power plant sites.

IMPLAN reports three kinds of economic impacts from economic activity as follows:

**Direct impacts** reflect the production, salaries, employment, and proprietor income of the plant itself. In this study, direct impacts (plant revenue estimates) are not included. The purpose of this study is to examine the local impacts on other businesses rather than the economics of the plant itself. Direct effects are included in the analysis of employment and compensation.

**Indirect impacts** include employees or output of other industries that the plant's purchases currently support. If a plant purchases material from a local supplier, those revenues to the supplier will be reflected as indirect impacts.

**Induced impacts** represent jobs or expenditures supported by the wages of plant employees or other individuals who are ultimately supported by economic activity at the plant.

There are three kinds of data reported in the tables included in this report as follows:

**Output** is the grand total of transactions among firms supported by the power plant. For every sector except retail, this represents the value of production. For manufacturers and the service sectors, production is the total value of sales. For Retail and Wholesale trade, output is the gross margin (or marginal revenue) and not gross sales (total revenue). In other words, for retail establishments, output is calculated as revenues minus the cost to the retailer of the goods sold. In addition to the dollar values, we show the percentage of total local economic activity supported by the power plant.

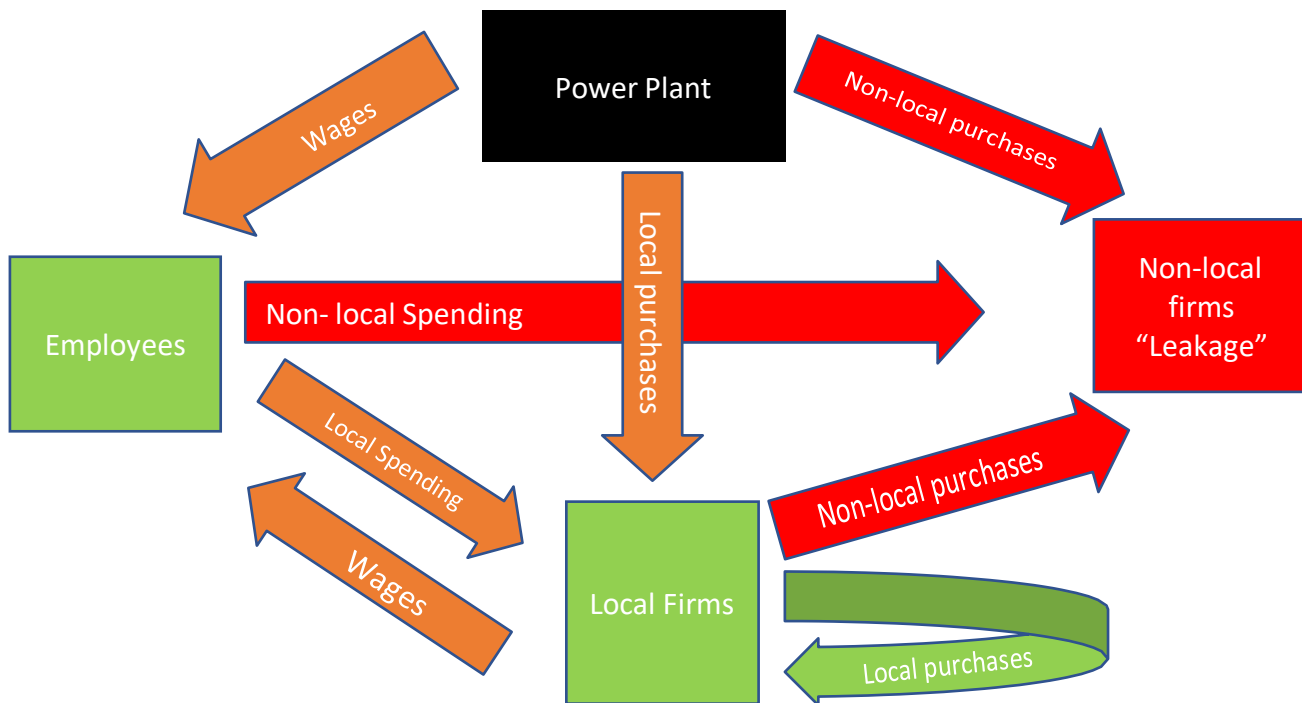
**Jobs** are the number of full and part time jobs over the course of a year. This figure includes more than just traditional employees. Individuals employed on a contract basis as well as proprietors who earn income are all counted in this number.

**Compensation** is made up of the wages, salaries, and benefits paid to workers. It also includes payments to proprietors for the management of their operation.

### **Multiplier Effects**

One of the values of input-output analysis is the ability to model the flow of money through several layers of local transactions. In this way, a single dollar of spending by a local firm can represent a much higher local economic impact. For example, wages are paid to a power plant employee. That employee purchases a meal in a restaurant. The restaurant pays wages to a cook. That cook spends money at a local retailer, and the cycle continues. Each of these separate transactions is included in the totals. Any purchases or spending at non-local firms are considered 'leakage' to the local economy and are not reported as local economic activity. Taxes and payments to non-local proprietors are also considered 'leakage.'

**Figure 1.2: Simplified Economic Impact Diagram**



The above illustration Figure 1.2: Simplified Economic Impact Diagram is highly simplified but provides a basic illustration of how IMPLAN calculates economic impacts. Some other ‘leakages’ not shown here include taxes and income to non-local proprietors.

### **Calculating Local Utility Tax Replacement**

In Iowa, utilities do not pay property taxes directly. Instead through the Gas & Electric Utility Property Tax Replacement program, excise taxes are collected on the state level on the generation and transmission of electricity and deliveries of electricity and natural gas to consumers. The stated purpose of this program, established in 1998, is so that utilities do not face a comparative competitive disadvantage for facilities located in Iowa. The funds collected are then distributed to counties to replace approximately what would have been collected through property tax. Those funds are then distributed to all taxing entities in the manner of property tax.<sup>9</sup>

For each of the power plants included in this study, the amounts paid to local governments were obtained using the County Utility Replacement Tax Reports for the fiscal year ending on June 30, 2021 (FYE 2021). The reports differentiate the source of the replacement tax based on generation, transmission, gas, and other contributing elements. Although the generating plants are not named individually in the reports, they are identifiable by the utility name(s) and the taxing district in which they are located.

<sup>9</sup> Utility Replacement Tax Task Force Report to The Iowa Legislature December 15, 2014.

Those figures were assigned to the local governments that would receive the replacement tax dollars using the local levy rates for the taxing district in which the power plant is located. For counties, townships, school districts, and cities, the figures are also shown as a percentage of the taxing authorities' total budgeted revenues for the 2020-2021 fiscal year.

## **Community Survey**

In addition to the economic and fiscal data in this analysis, it is also important to take into consideration the public perception of these plants. To better understand the attitudes and concerns of the community, we mailed a 2-page survey (see Appendix 1) to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

Questions focused on current attitudes about the power plant and thoughts about its future. Additionally, some questions about attitudes towards the community and satisfaction with various local services were also included. These questions were based in part on the questions used for more than 20 years in the Iowa Small Town Survey.<sup>10</sup> Although our methods and target audience differ from that study, it does give us some baseline levels of community satisfaction and attitudes to compare the answers we received with. Every county included in this study includes at least one city that has participated in the Iowa Small Town Survey.

Names and addresses of prospective respondents were taken from salesgenie.com (<https://www.dataaxlegenie.com/>), a sales intelligence software solution offered by Infogroup. A follow-up postcard was also sent to those respondents who did not submit their completed surveys after three weeks of mailing. The questionnaire and methodology were approved by the Iowa State University (ISU) Institutional Review Board (IRB), an office tasked with the protection of the rights of prospective respondents and of the researcher. Respondents were invited to join a drawing for one of ten available \$20 gift cards as an incentive for completing the survey.

Respondents were asked to return the completed survey to ISU for data entry and analysis. Data was analyzed using SPSS (Statistical Package for Social Sciences). The overall response rate was 12.6%.

## **Local Stakeholder Focus Groups**

To add additional context, we conducted focus groups and brief individual interviews with local governmental, business, and non-profit leaders in each of the communities. These interviews focused on three primary questions:

- (1) What are the benefits of having the power plant in your community?
- (2) What are the drawbacks of the plant locally?
- (3) What are your thoughts on the future of the plant?

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<sup>10</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Survey project.

Detailed notes were taken for each conversation and coded for themes. Additionally, the focus groups were recorded for accuracy until transcription of key quotes was complete. Some comments have been edited slightly to improve readability. This report does not associate individual names with feedback and quotes, but all participants were speaking in their public capacity and may be identifiable. See Appendix 2 for a copy of the focus group script.

# Combined Local Impacts

This section does not represent the full statewide impact of the power plants. Instead, it is the sum of impacts in each of the eight counties (including one two-county region) included in this study. Each plant has impacts beyond the boundaries of its county; however, those impacts are beyond the scope of this study. To model the local economic impacts of these plants we relied on the reporting on FERC Form 1 from Interstate Power and Light (Alliant Energy) and MidAmerican Energy. The FERC Form 1 details power plant expenditures across various categories. Some of the plants also have other minority owners. (See: Table 1.1: Utility-owned Coal-Fired Power Plants, pg. 4). In those cases, we assumed that those owners' employment and spending is proportional to their stake.

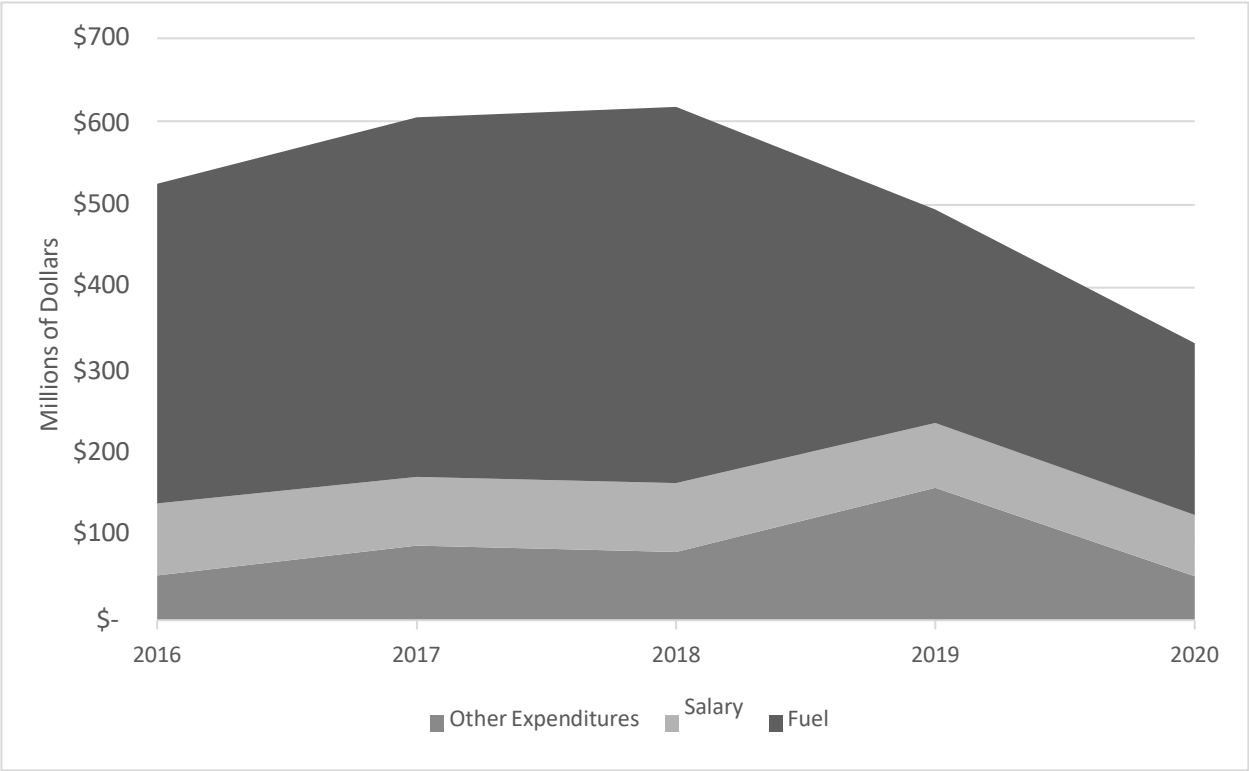
There has been a decline in spending at Iowa's coal plants over the past five years. From a high of over **\$617** million in 2018, total expenditures declined to just under **\$333** million in 2020—a reduction of more than **46%** in just two years. The Burlington Generating Station is the only plant included in this study with an increase in sales over the past five years. A significant reduction in fuel purchases is the primary cause of the change. See Figure 2.1: Total Power Plant Expenditures by category.

In the same two-year period, expenditures on salaries and other fixed costs declined by **22.9%**. These plants have also significantly reduced in employment in the past five years. The utilities reported **100** fewer employees in 2020 compared with 2016, a decline of **14%** in only five years. All plants except for the Louisa Generating Station reduced employment over the past five years.

**Table 2.1: Basic Operating Expenses (All nine units)**

	2016	2017	2018	2019	2020
<b>Employees</b>	712	674	678	645	613
<b>Fuel Expenses</b>	\$384,598,394	\$410,363,630	\$452,963,638	\$338,896,932	\$206,211,857
<b>Total Expenses</b>	\$524,821,911	\$580,282,689	\$617,440,917	\$493,486,738	\$332,997,361

**Figure 2.1: Total Power Plant Expenditures by category**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the power plants included in this study supported **\$369,969,957** of economic activity in their home counties in 2020. See Table 2.2: Local Impact on Industry Output in 2020 (2021 Dollars) for a breakdown by sector. Electricity sales from the plant itself are not included in that figure. These dollar figures have been inflated to 2021 dollars. Indirect impacts of the plant include all local sales to the power plant and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” shows the relative importance of the power plant to that Sector. For example, the coal-fired power plants support **1.46%** of all activity in the Transportation and Warehousing Sector in the eight counties included in this study.

A significant portion of the local impacts (42%) of the plant are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the generation of the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Administrative and Waste Services, and Real Estate and Rental.

The inclusion of the Mining sector is due to how proprietors are accounted for in the IMPLAN system. All proprietor data are place-of-residence-based. That is, a well or mine owner who lives in Iowa but whose activities take place in another state will show up in the IMPLAN data as a local proprietor with local sales. Therefore, it is possible to have income from mining, or oil and gas extraction in a county where these activities are not physically taking place. Even if the activities are not local, the income is received by Iowa residents and counts as a local economic impact.

Overall, IMPLAN calculates that the power plants support **0.48%** of all economic activity in those eight counties.

To simplify the presentation of these figures, we have aggregated the 546 individual industries included in the IMPLAN model to Sectors based on 2-digit NAICS codes. The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments to collect, analyze, and publish statistical data related to the U.S. business economy. Appendix 3 shows how the IMPLAN industries are aggregated into NAICS sectors.



**Table 2.2: Sum of Local Impacts on Industry Output in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percent of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$9,112	\$68,452	\$77,564	0.00%
Mining	\$15,302,443	\$31,849	\$15,334,292	7.27%
Utilities (not including generation)	\$152,598,960	\$1,059,002	\$153,657,962	4.87%
Construction	\$2,796,071	\$662,642	\$3,458,713	0.11%
Manufacturing	\$4,274,131	\$465,336	\$4,739,467	0.02%
Wholesale Trade	\$8,888,479	\$2,180,277	\$11,068,755	0.30%
Retail Trade	\$2,411,048	\$6,889,748	\$9,300,796	0.33%
Transportation and Warehousing	\$42,782,188	\$1,364,792	\$44,146,980	1.46%
Information	\$4,299,622	\$1,766,637	\$6,066,260	0.25%
Finance and Insurance	\$11,334,925	\$5,233,790	\$16,568,715	0.29%
Real Estate and Rental	\$5,464,288	\$11,755,984	\$17,220,272	0.32%
Prof, Scientific, and Tech Services	\$14,129,043	\$1,719,766	\$15,848,810	0.58%
Management of Companies	\$2,014,758	\$500,107	\$2,514,865	0.38%
Administrative and Waste Services	\$17,475,288	\$1,410,303	\$18,885,591	1.19%
Educational Services	\$54,576	\$552,041	\$606,617	0.21%
Health and Social Services	\$286	\$11,968,555	\$11,968,841	0.27%
Arts, Entertainment, and Recreation	\$272,408	\$940,453	\$1,212,861	0.26%
Accommodation and Food Services	\$3,276,749	\$3,596,292	\$6,873,042	0.34%
Other Services	\$1,532,766	\$3,752,001	\$5,284,766	0.29%
Government & non-NAICs	\$24,141,095	\$993,694	\$25,134,789	0.77%
<b>Total</b>	<b>\$313,058,235</b>	<b>\$56,911,722</b>	<b>\$369,969,957</b>	<b>0.48%</b>

Table 2.3: Local Impact on Industry Output in 2020 by County (2021 Dollars) shows the value of each plant’s economic impact in each county. The Lansing Generating station is one of the smaller plants in terms of industry output supported, but in supporting **4.04%** of industry output in Allamakee County it is by far the largest in terms of its impact relative to the size of the county’s economy. The Prairie Creek Generating Station in Linn County lies at the opposite end of the spectrum with the plant supporting only **0.05%** of total local industry output in Linn County through its salaries and local purchases.

**Table 2.3: Local Impact on Industry Output in 2020 by County (2021 Dollars)**

County	Industry Output	Percentage of Total Local Output
Allamakee County (Lansing Generating Station)	\$16,403,619	4.04%
Des Moines County (Burlington Generating Station)	\$13,520,669	0.30%
Linn County (Prairie Creek Generating Station)	\$16,090,925	0.05%
Louisa and Muscatine Counties (Louisa Generating Station)	\$41,291,236	0.48%
Pottawattamie County (Walter Scott Energy Center)	\$110,401,617	1.13%
Wapello County (Ottumwa Generating Station)	\$43,053,923	1.15%
Woodbury County (George Neal #3 and #4)	\$118,668,533	0.94%
<b>Total</b>	<b>\$369,969,957</b>	<b>0.48%</b>

## Employment Impacts

According to IMPLAN modeling, the power plants included in this study support the equivalent of nearly **1,990** jobs in the eight-county study area. The direct employment numbers represent the number of individuals reported as employees by the energy companies on public documents.

Indirect jobs are local jobs supported by power plant spending. Induced jobs are those supported by employee spending. This includes the employees of the power plants and other local industries supported by the plants. These do not necessarily represent full-time jobs. For example, in the Wholesale Trade industry, this chart shows a value of **27.15** local ‘jobs’ supported by the spending of the power plants. That figure does not mean that the plant supports **27** full-time jobs and one part-time position. Instead, the power plants are supporting small fractions of hundreds of jobs across the study area.

Proprietors who earn income are also included in these numbers. The model shows nearly 40 Mining “jobs” in these 8 counties supported by the power plants. In reality, this figure mostly represents individuals who have an ownership interest in oil or gas extraction located somewhere outside of Iowa. Because they are earning income locally, that counts as a local job despite the fact that the economic activity is taking place elsewhere.

**Table 2.4: Sum of Local Impacts on Employment in 2020**

Industry	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.06	0.43	0.49
Mining	0.00	39.57	0.09	39.65
Utilities	613.00	158.94	1.16	773.10
Construction	0.00	13.14	3.32	16.47
Manufacturing	0.00	2.68	0.89	3.57
Wholesale Trade	0.00	19.97	7.17	27.15
Retail Trade	0.00	25.70	86.36	112.06
Transportation and Warehousing	0.00	151.25	13.18	164.43
Information	0.00	10.70	4.89	15.59
Finance and Insurance	0.00	44.91	22.71	67.62
Real Estate and Rental	0.00	29.44	16.85	46.29
Prof, Scientific, and Tech Services	0.00	88.69	11.71	100.41
Management of Companies	0.00	9.15	2.32	11.47
Administrative and Waste Services	0.00	222.29	17.76	240.05
Educational Services	0.00	0.85	10.63	11.48
Health and Social Services	0.00	0.00	106.76	106.76
Arts, Entertainment, and Recreation	0.00	4.74	13.17	17.91
Accommodation and Food Services	0.00	54.86	55.23	110.09
Other Services	0.00	14.82	45.34	60.16
Government & non-NAICs	0.00	60.24	4.79	65.03
<b>Total</b>	<b>613.00</b>	<b>952.03</b>	<b>424.76</b>	<b>1989.79</b>

## Employee Compensation

Although more jobs are supported outside of the power plants than within them, those **613** power plant jobs account for almost half of the total employee compensation generated by the economic activity of the plants. Including all employee compensation in the Utility sector, **64.6%** of total compensation supported by the plants is paid to workers in that sector. This is largely due to the fact that utility jobs have significantly higher wages than similar jobs in other industries. See ‘The market for displaced electric utility workers’ pg. 27 for a detailed analysis of wages for utility workers compared with workers in similar industries.

Other industries with significant employee compensation supported by the plant include Transportation and Warehousing, **\$12,898,105**, Administrative and Waste Services, **\$7,089,461**, and Health and Social Services, **\$5,972,491**.

**Table 2.5: Sum of Local Impacts on Compensation in 2020**

Industry	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$889	\$4,961	\$5,850
Mining	\$0	\$36,531	\$1,867	\$38,398
Utilities	\$75,164,497	\$21,889,711	\$160,304	\$97,214,512
Construction	\$0	\$623,109	\$141,886	\$764,995
Manufacturing	\$0	\$227,559	\$55,858	\$283,417
Wholesale Trade	\$0	\$1,350,630	\$505,647	\$1,856,277
Retail Trade	\$0	\$635,491	\$2,269,926	\$2,905,417
Transportation and Warehousing	\$0	\$12,426,950	\$471,155	\$12,898,105
Information	\$0	\$804,813	\$287,312	\$1,092,124
Finance and Insurance	\$0	\$2,207,592	\$904,544	\$3,112,136
Real Estate and Rental	\$0	\$427,339	\$217,616	\$644,954
Prof, Scientific, and Tech Services	\$0	\$4,560,856	\$540,249	\$5,101,105
Management of Companies	\$0	\$1,035,588	\$253,289	\$1,288,876
Administrative and Waste Services	\$0	\$6,529,143	\$560,318	\$7,089,461
Educational Services	\$0	\$24,141	\$319,046	\$343,187
Health and Social Services	\$0	\$126	\$5,972,365	\$5,972,491
Arts, Entertainment, and Recreation	\$0	\$38,411	\$211,998	\$250,409
Accommodation and Food Services	\$0	\$1,091,444	\$1,106,972	\$2,198,416
Other Services	\$0	\$607,819	\$1,388,933	\$1,996,751
Government & non-NAICs	\$0	\$5,182,173	\$321,198	\$5,503,371
<b>Total</b>	<b>\$75,164,497</b>	<b>\$59,700,313</b>	<b>\$15,695,443</b>	<b>\$150,560,253</b>

## Tax Impacts

Below are the full values of the Utility Replacement Tax paid to local government entities in the 2020-2021 fiscal year (See Table 2.6: Value of FYE 2021 Utility Replacement Tax). These amounts change from year to year based on a number of factors including local levy rates, utility excise tax dollars paid statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property tax rates in the future.

To show the relative importance of these funds for local taxing authorities, we also calculated the percentage that the Utility Replacement Tax makes up of budgeted revenues for the 2020-21 fiscal year. For counties, on average the utility replacement tax made up **1.47%** of total revenue. For schools, although the percentage of revenues is higher, **2.90%**, the actual fiscal impact is more difficult to predict. Even a total loss of this revenue would not result in such a large decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference.<sup>1</sup>

There are only two power plants located in cities, Cedar Rapids and Council Bluffs. For plants located in unincorporated areas, townships receive Utility Replacement Tax funds. Townships tend to have smaller revenues and for the five townships that receive Utility Replacement Tax from coal power plants, those funds made up **43.4%** of budgeted revenues in FYE 2021. These funds are almost entirely for rural fire protection and EMS service within the township.

**Table 2.6: FYE 2021 Utility Replacement Tax**

<b>Taxing Authority</b>	<b>Replacement Funds</b>	<b>Average Percentage of FYE 21 Revenues</b>
<b>School</b>	\$4,142,756	2.90%
<b>County</b>	\$3,273,050	1.47%
<b>City</b>	\$1,497,087	0.30%
<b>Township</b>	\$161,715	43.4%
<b>Community College</b>	\$354,195	
<b>County Assessor</b>	\$122,534	
<b>Agricultural Extension</b>	\$66,319	
<b>County Tuberculosis and Brucellosis Funds</b>	\$784	
<b>Total</b>	<b>\$ 9,618,440</b>	

<sup>1</sup> See *Financing Public Education in (2017)* for more details. <https://educateiowa.gov/documents/school-finance-tools/2017/02/financing-public-education-iowa>

## Survey

In addition to the economic and fiscal impacts of the plants, we were interested in the opinions that the general public has about the power plants. Our survey was mailed to 1,000 households in each of the counties included in this study. From the seven counties included in this study we received 879 responses for a 12.6% overall response rate. Response rates were highest in rural counties where awareness of the power plant was generally higher.

**Table 2.7: Survey Response Rate by County**

County	Number of Responses	County Response Rate
Allamakee County (Lansing Power Plant)	201	20.1%
Des Moines County (Burlington Power Plant)	137	13.7%
Linn County (Prairie Creek Power Plant)	88	8.8%
Louisa County (Louisa Power Plant)	158	15.8%
Woodbury County (Walter Scott Energy Center)	89	8.9%
Wapello County (Ottumwa Generating Station)	109	10.9%
Pottawattamie County (George Neal Power Plant)	96	9.6%
Overall	879	12.6%

## Community Characteristics

In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including several near the power plants.<sup>2</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor to 5 being very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective to 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents. In each of the following seven sections of this report, we will present details and further analysis of each of the counties surveyed.

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<sup>2</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.

Overall, there are some obvious trends. Public services were ranked fairly high across all counties. The notable exception to this was the “Condition of streets.” See Table 2.8: Average Rating of Public Services, below.

**Table 2.8: Average Rating of Public Services (1=very poor to 5=very good)**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All Counties
Fire protection	4.4	4.3	4.3	4.2	4.3	4.2	4.4	4.3
Emergency response	4.4	4.3	4.1	4.2	4.2	4.2	4.3	4.3
Electric services	4.2	4.1	4.0	4.2	4.4	3.9	4.3	4.2
Library service	4.2	4.2	4.1	4.0	4.2	4.1	3.9	4.1
Garbage collection	4.1	4.2	4.1	4.1	4.1	3.8	4.1	4.1
Parks and recreation services	4.2	4.1	4.0	3.7	3.9	3.9	3.9	4.0
Water services	4.0	4.0	4.0	3.6	4.1	4.1	3.9	3.9
Public School	4.2	3.7	3.9	3.9	3.8	3.6	3.8	3.9
Overall public services	3.9	3.7	3.7	3.7	3.7	3.5	3.6	3.7
Condition of streets	3.1	2.9	2.6	3.2	3.1	2.2	2.9	2.9

Private services had slightly lower scores overall, but still none had a statewide average of less than three out of five (Table 2.9). The availability of jobs and shopping facilities had the highest variability across counties, with rural counties scoring lower overall than their urban counterparts.

**Table 2.9: Average Rating of Private Services (1=very poor to 5=very good)**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All Counties
Medical services	3.8	3.9	4.2	3.5	4.1	3.5	3.8	3.8
Private services overall	3.5	3.4	3.7	3.4	3.7	3.2	3.6	3.5
Senior citizen services	3.5	3.3	3.3	3.3	3.5	3.2	3.3	3.4
Childcare	3.3	3.3	3.2	3.3	3.3	3.2	3.3	3.3
Programs for youth	3.3	3.3	3.4	3.1	3.4	3.0	3.4	3.3
Available housing	3.0	3.2	3.3	3.1	3.1	2.9	3.3	3.1
Shopping facilities	3.0	3.1	3.4	2.5	3.6	2.6	3.6	3.1
Jobs	2.8	2.8	3.6	3.0	3.5	2.9	3.4	3.1

Table 2.10: Average Rating of Social Qualities shows that, overall, respondents used positive adjectives to describe their communities. All state averages were above 3.4 out of 5 towards the positive adjective.

**Table 2.10: Average Rating of Social Qualities (1=negative to 5=positive)**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All Counties
Unfriendly (1) – Friendly (5)	4.3	3.8	3.9	4.2	4.1	3.8	4.0	4.0
Dangerous (1) – Safe (5)	4.4	3.4	3.9	4.3	4.1	3.5	4.1	4.0
Indifferent (1) – Supportive (5)	4.0	3.4	3.7	3.9	3.7	3.4	3.7	3.7
Not trusting (1) – Trusting (5)	4.0	3.4	3.7	3.8	3.7	3.2	3.6	3.7
Prejudices (1) – Tolerant (5)	3.8	3.4	3.5	3.7	3.6	3.3	3.8	3.6
Run-down (1) – Well-kept (5)	3.7	3.3	3.7	3.4	3.6	2.8	3.5	3.4
Rejecting of new ideas (1) – Open to new ideas (5)	3.6	3.3	3.4	3.5	3.6	3.2	3.4	3.4



**Perceptions of Coal-Fired Power Plants**

Overall, residents who responded to the survey had positive feelings about the coal-fired power plants located in their community. There may have been some selection bias in that those who were unaware of the power plant declined to return the survey. On the whole, respondents thought that the power plant was very important to their community’s economy and important to their identity (Table 2.11).

Respondents were also much more likely to identify the plants’ benefits (Table 2.12) than they were to select negatives (Table 2.13) for their local area. Across the study area, jobs were seen as the most significant local benefit and pollution as the most important drawback. Concerns about a potential closure varied widely across the counties (Table 2.14), but job losses and potential increases in utility bills topped residents’ concerns.

Overall, fewer than half of respondents selected a benefit to a potential closure of the plant, but those who did were most likely to cite cleaner air as a benefit (Table 2.15). Perceptions of job availability for power plant workers should they need to find new employment differed widely among the counties. **47%** of respondents in Allamakee County believed that there would be no local jobs available for displaced power plant workers. Only **9%** of respondents in Linn County believed that there would be no alternative employment in the area.

**Table 2.11: Average Importance of the Power Plant**

How important do you believe the power plant is to your...	Responses	Mean (1=not at all important to 5=extremely important)	Std. Deviation
Community’s economy?	807	4.09	1.08
Community’s identity?	763	3.29	1.37

**Table 2.12: Benefits of the Power Plant**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All 7 Counties
Jobs	98%	95%	90%	96%	93%	97%	97%	96%
Tax payments (County, School, Etc.)	85%	70%	64%	83%	66%	76%	76%	76%
Support of other businesses	68%	54%	44%	44%	50%	60%	60%	56%
Community org sponsorship	39%	22%	24%	22%	26%	35%	40%	30%

**Table 2.13: Negatives of the Power Plant**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All 7 Counties
Pollution	37%	50%	68%	43%	51%	27%	39%	45%
Environmental risk	32%	42%	49%	36%	46%	27%	32%	37%
Risk of accidents	16%	22%	21%	18%	27%	17%	27%	21%
Uncertainty	25%	17%	18%	17%	7%	21%	14%	18%
Appearance	6%	8%	20%	7%	27%	9%	5%	11%

**Table 2.14: Concerns about Closure**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All 7 Counties
Job losses	94%	93%	71%	89%	82%	90%	82%	88%
Possible increases in utility bills	49%	87%	71%	78%	91%	84%	79%	82%
Decrease in local tax base	78%	66%	49%	71%	54%	65%	70%	67%
Other local businesses closing	10%	36%	28%	33%	40%	47%	50%	41%
Decrease in school population	81%	25%	12%	40%	22%	33%	41%	37%
Decrease in home values	42%	26%	16%	37%	22%	40%	43%	34%
Population loss	11%	11%	12%	5%	9%	8%	11%	10%

**Table 2.15: Benefits of closure**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All 7 Counties
Cleaner air	41%	55%	70%	48%	49%	34%	44%	49%
Renewable energy	26%	32%	43%	31%	24%	29%	33%	31%
Land open for development	13%	16%	35%	11%	18%	11%	13%	16%
Better appearance	12%	10%	21%	12%	35%	11%	12%	15%
Less noise	12%	9%	20%	13%	7%	9%	2%	11%

**Table 2.16: What other jobs would be available**

	Allamakee	Des Moines	Linn	Louisa	Pottawattamie	Wapello	Woodbury	All 7 Counties
Manufacturing	33%	45%	77%	61%	43%	55%	50%	50%
Construction	39%	41%	63%	45%	60%	41%	57%	47%
None	47%	38%	9%	28%	20%	32%	25%	32%
Engineering	4%	19%	44%	23%	28%	13%	21%	19%
Professional Business	7%	19%	30%	19%	34%	12%	19%	18%
Other	10%	20%	10%	12%	24%	21%	25%	16%

## Focus Groups and Key Informant Interviews

Statewide we interviewed or held focus groups with 41 local contacts. These individuals represented:

- Local government staff, appointed, and elected officials
- Economic development staff and chamber of commerce representatives
- Employees of industries that serve the power plants
- Board members of local philanthropic organizations
- Residents who live near the power plants
- Employees of electric utilities
- Unions that represent utility employees

Overall, sentiment was positive toward the power plants. In every community high-quality jobs were mentioned as a primary benefit of having the plants located in their communities.

**“[The power plant] pays the top-end wages in the county. We don’t have a ton of union jobs here.”** – Allamakee County

**“It goes deeper than just the people that are employed there. You might just have one individual in a family working there, but the rest of the family and other relatives stay to be close together. If you lost that job you might lose more than one family.”** – Louisa County

**“Kids need to know that jobs like that exist in the area. It is a destination.”** – Wapello County

Utility replacement tax revenues to local governments were also mentioned in every county.

**“[The plant is] the highest single tax payer in the county.”** – Allamakee County

**“They provide a significant amount of our local tax base and tax revenue.”** – Woodbury County

**“We have a totally different tax base from other schools our size. Our property tax rates are much lower because of it.”** – Wapello County

Respondents in most counties mentioned support of local businesses, charitable giving, and volunteering.

**“I know that a key attribute in Southeast Iowa is the presence of rail. It could be a big hit to BNSF [Railway] and all the jobs that they provide.”** – Des Moines County

**“If you think about all the local contractors that it takes to serve a plant of that size if it is welders or pipefitters or janitorial or food service, you name it. That really has a ripple effect in our community for the economy.”** – Woodbury County

**“From food service to pipe welders and everything in between. Those are predominantly local firms.”** – Pottawattamie County

**“Whatever is going on, Alliant Energy is a great community partner. They are involved in quite a bit.”** – Wapello County

**“Alliant is so good in terms of having staff volunteer in parks. It’s easy to write a check [...] but they were asking what they could do to put boots on the ground.”** – Allamakee County

Participants also expressed confidence in the reliability and affordability of coal relative to other sources of power.

**“We all know the Texas moment. We went through -28 degrees here in Siouxland and we did not lose power. That is because they are able to keep it going through the peaks.”** – Woodbury County

**“We need something to keep the lights on and I don’t think batteries are there yet.”** – Wapello County

**“The noises I hear about the things that are better to replace [coal] are a little airy.”** – Des Moines County

### **Drawbacks**

There were fewer local drawbacks mentioned. Some had concerns about safety or the possibility of accidents at the plant. A related concern was train traffic to the plant both as an annoyance for traffic and a safety concern near schools. In only a couple of counties were environmental concerns mentioned.

**“There has to be an environmental aspect to it. There are hundreds of tons of coal stored on site.”** – Des Moines County

**“I can’t speak to the emissions, but no matter how much you scrub it coal is a dirty fuel.”** – Linn County

**“It is a picturesque area, and coal trains are not always attractive to look at.”**  
– Allamakee County

**“We wouldn’t have as many school bus delays if the coal trains weren’t coming in. Some of those coal trains go pretty slow.”** – Louisa County

**“You worry about our schools being right by the train tracks. I was a middle school principal and those kids tend to want to take shortcuts across the train tracks to get home a little quicker. We’ve caught kids riding the train a little ways. It’s one of those dangerous things.”** – Woodbury County

### **The Future of the Plant**

The majority consensus in all but Allamakee County was that the power plants would be around for the foreseeable future as an important part of their local economy and the electric grid. In the case of Lansing, all were aware that the plant would be closing in 2022. In Des Moines County, participants had heard of the planned conversion to natural gas. In only two counties where a closure has not been announced did focus group participants bring up the possibility of a closure.

**“I see it as a long-term resource for the community.”** – Pottawattamie County

**“The continual upgrades of the plants and continual investment is important. They have shut down some plants because they haven’t been upgraded. They are invested in fewer plants rather than spreading it out.”** – Woodbury County

**“I couldn’t see a Midwestern state going coal free. I think anything that they are saying now about closing in 20 years is just responding to the current political environment.”** – Wapello County

**“The big buzz right now in Linn County is Solar, so I think the future is moving towards more renewable energy sources, so I don’t know how long coal will be sustainable.”** – Linn County

**“It’s going to close eventually at least with the current federal administration. They’re pushing to close the coal plants.”** – Louisa County

Only Allamakee and Des Moines Counties specifically mentioned planning efforts to prepare for economic transition.

**“There have been some discussions for what the site could become if the plant closes altogether. It’s a pretty unique site with barge access and rail access.”**  
– Des Moines County

**“I was really glad that we had a good relationship with Alliant. [...] Open communication was a really big piece of that. Often they can’t tell you everything but say that ‘you should be prepared for this.’”** – Allamakee County

## **The market for displaced electric utility workers**

Jobs in coal-fired electric utility plants all have tasks unique to the plant. However, while some tasks do not have close relationships to jobs outside the plant such as handling coal or monitoring and maintaining electricity power generators, many of the skills have a close relationship with jobs outside the plant. In this section, we provide a listing of the jobs most closely related to the jobs inside the plant, document the size of the market for those jobs, and compare the pay in the external labor market to the average pay in the electric utility.

We began with a list of job titles at one of the electric utility plants covered in the study. We were provided the average pay for workers in each job. We then compared the job title with job titles contained in the U.S. Bureau of Labor Statistics Occupational Outlook Handbook (OOH) (see: [www.bls.gov/oes](http://www.bls.gov/oes)). For each occupation, the OOH provides a listing of tasks, median wages, and an outlook for growth. It also provides a listing of the occupations most closely related to each occupation. The presumption is that individuals in one occupation could transfer to the closely related occupations with modest retraining. Appendix 4 gives more detail on the occupations included in this analysis.

We then derived estimates of the employment numbers and wages for each of the closest matching occupations for Iowa metropolitan and nonmetropolitan labor markets. This information can be used to suggest the local market opportunities available for displaced electric utility workers, were their plant to close.

The results are shown in Table 2.16 – Jobs in an Iowa electric utility and the closest replacement occupations, 2019 wages and employment levels. The information is presented by job title in the electric utility. The first group includes two job titles that have the same reference occupations in the broader market, coal handler foreman and control room operator. These job titles average \$42.76 and \$45.17 per hour, respectively. The OOH lists 5 occupations that are close substitutes. We provide information on each of the potential matching occupations by metropolitan and nonmetropolitan markets. The five occupations range from 110 to 880 jobs across the various metropolitan markets and 70 to 1,120 in nonmetropolitan markets. The jobs are broadly dispersed about the state and suggest that there will be openings in close substitute jobs for displaced coal handler foremen and control room operators.

We also provide information on the distribution of wages in the matched occupations in the metropolitan and nonmetropolitan markets. For the first three matched occupations, the wage distributions are very similar across metropolitan and nonmetropolitan markets with only small differences at the medians. We only have metropolitan market information for power plant operators. Water and wastewater treatment operators have a \$4.59 per hour advantage for metropolitan markets at the median. For the most part, however, pay in metropolitan and nonmetropolitan markets are comparable within occupations.

However, none of the matched occupations pay comparably to the pay in the power plant. This is a general tendency that jobs in regulated industries pay better and offer

more stable employment than do jobs in unregulated firms. Workers who lose their jobs in electric utilities should be able to find employment in similar occupations, but will likely face pay cuts.

In extending the analysis to the rest of the electric utility job titles, several conclusions emerge:

- 1) For most electric utility jobs, there are many possible replacement jobs in occupations that are close substitutes.
- 2) For the most part, pay in the electric utilities is greater, and in some cases, much greater than pay in the substitute jobs.
- 3) While pay is higher in metropolitan than nonmetropolitan markets, the gaps are typically small. Displaced workers from nonmetropolitan electric utilities may not have to find jobs in metropolitan markets to secure the highest wages, given their occupations.



**Table 2.16: Jobs in an Iowa electric utility and the closest replacement occupations, 2019 wages and employment levels**

Iowa Utility Occupation	Average Hourly Pay in Electric Utility	Matching Occupations	Iowa Metropolitan Markets				Iowa Nonmetropolitan Markets			
			2019 Hourly Wage Percentile				2019 Hourly Wage Percentile			
			Jobs	25th	Median	75th	Jobs	25th	Median	75th
Coal Handler Foreman	42.76	Electrical and Electronics Repairers, Commercial and Industrial Equipment	130	21.54	27.13	28.00	120	21.33	26.87	29.93
Control Room Operator	45.17	Electrical Power-Line Installers and Repairers	740	27.98	35.47	43.51	1,070	28.11	35.95	43.34
		Stationary Engineers and Boiler Operators	330	22.14	25.45	28.78	70	26.23	27.85	33.45
		Power Plant Operators	110	33.35	38.04	44.17				
		Water and Wastewater Treatment Plant and System Operators	880	19.59	25.15	29.18	1,120	15.60	20.56	24.78
Floor Operator Maintenance	42.75 44.91	Electricians	6,960	19.96	27.11	33.69	2,500	19.55	24.62	29.45
		Installation, Maintenance, and Repair Occupations	42,660	17.18	22.76	28.96	27,560	17.02	21.63	27.20
		Tool and Die Makers	540	19.77	23.25	28.57	690	20.70	24.04	27.18
		Plumbers, Pipefitters, and Steamfitters	4,240	23.68	30.54	37.72	1,150	19.06	23.26	28.08
Power Plant & Substation Electrician	44.91	Aircraft Mechanics and Service Technicians	290	20.36	24.55	29.97		26.03	31.10	34.70

		Electrical and Electronics Repairers, Commercial and Industrial Equipment	130	21.54	27.13	28.00	120	21.33	26.87	29.93
		Electricians	6960	19.96	27.11	33.69	2500	19.55	24.62	29.45
		Electrical Power-Line Installers and Repairers	740	27.98	35.47	43.51	1070	28.11	35.95	43.34
		Power Plant Operators	110	33.35	38.04	44.17				
Coal Handler	39.23	Laborers and Freight, Stock, and Material Movers, Hand	19,770	12.09	14.92	18.18	10,680	13.33	16.43	19.47
		Construction Laborers	5,790	15.33	17.99	22.10	4,950	14.59	17.19	21.09
		Driver/Sales Workers	5,190	9.41	11.26	17.74	1,180	10.59	16.50	20.05
		Heavy and Tractor-Trailer Truck Drivers	26,180	16.90	20.81	24.73	15,020	15.68	18.82	24.10
Quality Control	44.49	Construction and Building Inspectors	480	25.42	29.86	34.20	160	24.48	30.00	34.00
Storekeeper	36.29	Buyers and Purchasing Agents	3,250	24.93	30.66	37.57	1,280	20.16	25.78	32.14
		Bookkeeping, Accounting, and Auditing Clerks	10,700	15.26	18.63	23.01	7,540	13.55	17.19	21.34
		Logisticians	1,640	24.87	32.14	38.05	270	26.10	29.94	36.48

## Allamakee County (Lansing Generating Station)

### Plant Characteristics

**Owner:** Interstate Power and Light (Alliant Energy) 100%

**Plant Nameplate Capacity:** 274.5 MW (megawatts)

**Number of Employees (2020):** 30

The Lansing Generating Station is located along the Mississippi River in rural Allamakee County approximately three and a half miles southeast of the City of Lansing. Figure 3.1 displays an aerial view of the station. This image was taken September 26, 2019, as part of the National Agriculture Imagery Program (NAIP) through the United States Department of Agriculture Farm Agency.

**Figure 3.1: Aerial Photograph of the Lansing Generating Station**



## Plant Expenditures and Employment

The Lansing Generating Station is the only power plant included in this report that is currently scheduled to be completely closed. In the fall of 2020, Alliant Energy announced that as part of Alliant Energy’s “Iowa Clean Energy Blueprint” the plant will be closing, likely by the end of 2022. Even before the closure of the plant was officially announced, there has been a gradual reduction in staffing and expenditures. Since 2016, there has been a **35%** reduction in staffing (from 46 to 30) and a **46.6%** reduction in total expenditures, as seen in Table 3.1.

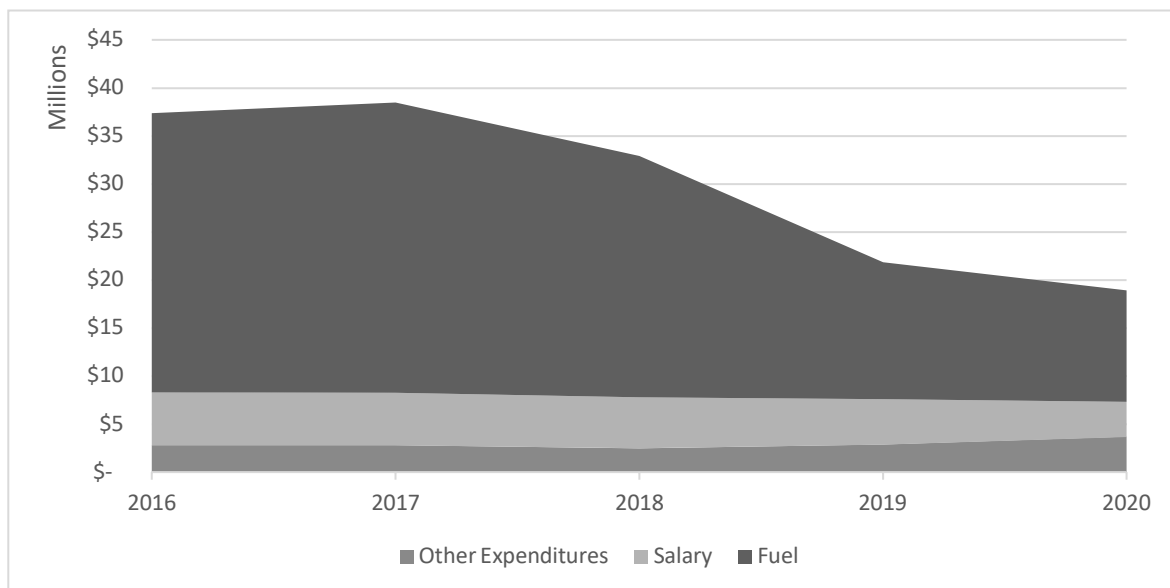
**Table 3.1: Basic Operating Expenses**

	2016	2017	2018	2019	2020
<b>Employees</b>	46	45	44	39	30
<b>Fuel Expenses</b>	\$28,988,328	\$ 30,216,821	\$ 25,085,594	\$14,267,146	\$11,603,550
<b>Total Expenses</b>	\$37,348,892	\$ 38,477,376	\$ 32,904,075	\$21,880,998	\$18,928,157

Table 3.1: Basic Operating Expenses shows the reduction in staffing and expenditures over the past five years. The dollar figures reflect the numbers reported in Alliant Energy's "Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report" from 2016 to 2020.

Like all power plants included in this study, at the Lansing Generating Station the majority of plant expenditures are on fuel and salary, as presented in Graph 3.1: Plant Expenditures by Category

**Graph 3.1: Plant Expenditures by Category**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the Lansing Generating Station was responsible for **\$16,403,619** in local economic activity in 2020, as presented in Table 3.2: Local Impact on Industry Output in 2020 (2021 Dollars). These dollar figures are reported in this analysis to reflect the values adjusted for 2021 inflation. Indirect impacts of the plant include all local sales to the power plant itself and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” (Table 3.2) shows the relative importance of the power plant to that sector. For example, the Lansing Generating Station supports **2.03%** of all activity in the Transportation and Warehousing Sector in the county.

Based on calculations using the reported total output figures in Table 3.2, the majority of the local impacts of the plant, **62%**, are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution; however, it should be noted that electric sales of the power plant itself are not included in these figures. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Finance and Insurance, and Mining.

The inclusion of the Mining sector is due to how proprietor income is accounted for in the IMPLAN system. All proprietor data are place-of-residence-based. That is, a well or mine owner who lives in Iowa but whose activities take place in another state will show up in the IMPLAN data as a local proprietor with local sales. Therefore, it is possible to have income from mining, or oil and gas extraction in a county where these activities are not physically taking place. Even if the activities are not local, the income is received by residents of Allamakee County and counts as a local economic impact.

Overall, IMPLAN calculates that the Lansing power plant supports **4.04%** of economic activity in Allamakee County in addition to the revenues of the plant itself. This is the largest percentage of supported economic activity in any county included in this study. However, the closure of the power plant does not mean there will be a total loss of **4.04%** of the economy in Allamakee County. Changes in income, tax funding, and the mix of industries are all complex and difficult to forecast with precision.

**Table 3.2: Local Impact on Industry Output in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$1,093	\$12,112	\$13,205	0.01%
Mining	\$761,151	\$1,334	\$762,485	9.84%
Utilities	\$10,197,481	\$44,834	\$10,242,315	73.20%
Construction	\$44,172	\$23,058	\$67,230	0.10%
Manufacturing	\$10,070	\$7,200	\$17,269	0.00%
Wholesale Trade	\$586,236	\$74,819	\$661,055	0.77%
Retail Trade	\$146,121	\$302,106	\$448,227	0.72%
Transportation and Warehousing	\$913,364	\$39,946	\$953,311	2.03%
Information	\$57,975	\$25,409	\$83,384	1.17%
Finance and Insurance	\$727,654	\$203,907	\$931,561	1.45%
Real Estate and Rental	\$230,399	\$433,499	\$663,897	0.77%
Prof, Scientific, and Tech Services	\$531,578	\$40,448	\$572,025	2.48%
Management of Companies	\$52,950	\$11,534	\$64,484	0.87%
Administrative and Waste Services	\$182,128	\$13,646	\$195,774	2.75%
Educational Services	\$610	\$12,718	\$13,328	0.58%
Health and Social Services	\$12	\$203,942	\$203,954	0.45%
Arts, Entertainment, and Recreation	\$6,707	\$21,965	\$28,672	0.72%
Accommodation and Food Services	\$146,477	\$102,863	\$249,340	1.21%
Other Services	\$70,806	\$113,164	\$183,970	0.49%
Government & non-NAICs	\$35,106	\$13,027	\$48,133	0.07%
<b>Total</b>	<b>\$14,702,089</b>	<b>\$1,701,531</b>	<b>\$16,403,619</b>	<b>4.04%</b>

## Employment Impacts

According to the IMPLAN model, the Lansing Generating Station supports the equivalent of **81.77** jobs in Allamakee County, as shown in Table 3.3: Local Employment Impacts in 2020. The direct employment numbers represent the **30** individuals reported as employed by the energy companies on the FERC Form 1. For the indirect and induced jobs, the totals indicate the sum of all jobs across businesses in that sector. The majority of jobs supported by the plant are in the Utility sector, **55%** of total jobs. This includes those directly employed by the plant as well as those indirectly supported by the plant – mostly in transmission and distribution.

For more information on how these numbers are calculated, see pg. 5.

**Table 3.3: Local Employment Impacts in 2020**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.01	0.07	0.08
Mining	0.00	1.99	0.00	1.99
Utilities	30.00	14.55	0.07	44.62
Construction	0.00	0.24	0.13	0.37
Manufacturing	0.00	0.04	0.02	0.06
Wholesale Trade	0.00	1.18	0.24	1.41
Retail Trade	0.00	1.51	3.46	4.97
Transportation and Warehousing	0.00	4.48	0.56	5.05
Information	0.00	0.21	0.10	0.32
Finance and Insurance	0.00	2.70	0.91	3.61
Real Estate and Rental	0.00	1.60	0.52	2.12
Prof, Scientific, and Tech Services	0.00	3.95	0.35	4.30
Management of Companies	0.00	0.36	0.08	0.44
Administrative and Waste Services	0.00	1.22	0.10	1.32
Educational Services	0.00	0.01	0.43	0.45
Health and Social Services	0.00	0.00	2.44	2.44
Arts, Entertainment, and Recreation	0.00	0.11	0.39	0.50
Accommodation and Food Services	0.00	3.34	2.04	5.38
Other Services	0.00	0.67	1.16	1.83
Government & non-NAICs	0.00	0.40	0.14	0.54
<b>Total</b>	<b>30.00</b>	<b>38.56</b>	<b>13.21</b>	<b>81.77</b>

## Employee Compensation

Employee compensation includes the value of both wages and benefits paid to employees. The Lansing Generating Station supports **\$6,167,957** in local employee compensation, as shown in Table 3.4: Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **30** Lansing Generating Station jobs represent more than half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$5,153,453**, or more than **83%** of total employee compensation, comes from the Utility sector.

**Table 3.4: Local Employee Compensation in 2020 (2021 Dollars)**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$79	\$747	\$827
Mining	\$0	\$5,325	\$143	\$5,468
Utilities	\$3,706,002	\$1,440,743	\$6,708	\$5,153,453
Construction	\$0	\$4,206	\$2,315	\$6,521
Manufacturing	\$0	\$1,857	\$908	\$2,765
Wholesale Trade	\$0	\$63,355	\$12,534	\$75,889
Retail Trade	\$0	\$29,839	\$67,874	\$97,713
Transportation and Warehousing	\$0	\$189,936	\$3,449	\$193,385
Information	\$0	\$3,356	\$1,512	\$4,868
Finance and Insurance	\$0	\$141,146	\$31,411	\$172,557
Real Estate and Rental	\$0	\$5,657	\$2,678	\$8,335
Prof, Scientific, and Tech Services	\$0	\$129,635	\$10,828	\$140,463
Management of Companies	\$0	\$16,810	\$3,662	\$20,472
Administrative and Waste Services	\$0	\$39,262	\$2,915	\$42,177
Educational Services	\$0	\$189	\$9,135	\$9,325
Health and Social Services	\$0	\$3	\$98,474	\$98,477
Arts, Entertainment, and Recreation	\$0	\$141	\$1,960	\$2,101
Accommodation and Food Services	\$0	\$24,945	\$19,296	\$44,242
Other Services	\$0	\$22,897	\$28,647	\$51,544
Government & non-NAICs	\$0	\$27,985	\$9,392	\$37,377
<b>Total</b>	<b>\$3,706,002</b>	<b>\$2,147,367</b>	<b>\$314,588</b>	<b>\$6,167,957</b>



**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 3.5: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The closure of the Lansing Generating Station will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property taxes in the future.

School funding is even more complex. Although **8.61%** of the 2020-2021 revenues to the Eastern Allamakee School District came from Utility Replacement Tax, even a total loss of this revenue would not result in a large decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue. In the case of the Eastern Allamakee School District, the district is timing the final payments on existing debt to coincide with the loss of the power plant revenue to offset local increases in property tax.<sup>1</sup>

The relative value of the Lansing Generating Station to the various taxing authorities is high in Allamakee County. Nearly half of Lafayette Township’s full budget is funded by Utility Replacement Tax for the township’s fire and emergency medical service levy. In addition to the figures shown in Table 3.5, **\$39,690.64** was paid to Northeast Iowa Community College, and **\$12,745.47** to the Allamakee County Extension Office.

**Table 3.5: Value of FYE 2021 Utility Replacement Tax**

	Allamakee County	Eastern Allamakee School District	Lafayette Township	Other*	Total
Replacement Funds	\$440,430	\$503,718	\$25,452	\$75,125	\$1,044,726
Percent of FYE 21 Revenues	2.74%	8.61%	48.8%		

\* Other levies may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

<sup>1</sup> For more information see: “Superintendent Dr. Dale Crozier clarifies the true relationship between Alliant Energy and Eastern Allamakee Community School District,” *The Standard*. June 22, 2020 Available at: <https://www.waukonstandard.com/articles/2020/07/22/superintendent-dr-dale-crozier-clarifies-true-relationship-between-alliant>

## Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

Allamakee County had the highest response rate of the seven counties included in the study. This was likely because of the news of the closure of the Lansing Generating Station. 201 Allamakee residents returned the survey for a response rate of **20.1%**.

**Table 3.6: Allamakee County Response Rate**

County	Responses	Response Rate
Allamakee County (Lansing Generating Station)	201	20.1%
Overall	879	12.6%

## The Respondents

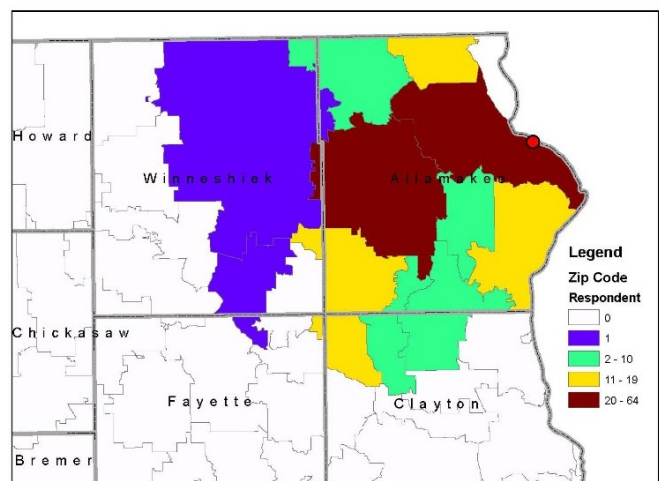
Out of 201 Allamakee County respondents, 197 reported the zip codes where they live. Thirteen zip codes were represented, of which almost one-third of the responses came from zip code 52172, and one-quarter of the responses came from 52151. The rest originated from other zip codes. Table 3.7: Allamakee County Zip Codes shows the percentage of respondents by zip code and Figure 3.2: Respondents by Zip Code shows the location of respondents by zip code.

There were a few respondents who could potentially reside in nearby counties such as Winneshiek, Fayette, and Clayton. For the purposes of this report, all respondents will be referred to as “Allamakee County respondents.”

**Table 3.7 – Allamakee County Zip Codes**

ZIP Code	Number	Percent
52172	64	32.5%
52151	54	27.4%
52162	19	9.6%
52146	18	9.1%
52160	18	9.1%
52170	7	3.6%
52140	6	3.0%
52159	5	2.5%
52156	2	1.0%
51272	1	0.5%
52101	1	0.5%
52161	1	0.5%
52640	1	0.5%
<b>Total</b>	<b>197</b>	<b>100.0%</b>

**Figure 3.2: Respondents by Zip Code**



More than 76% of the Allamakee County respondents reported being 65 or older skewing older than statewide averages. However, all age levels were represented. Average household size is similar to statewide averages at 2.3 individuals per household. See Table 3.8: Allamakee County Reported Ages for details.

**Table 3.8: Allamakee County Reported Ages**

Age	Number	Percent
25-34	12	6.2%
35-44	17	8.8%
45-54	17	8.8%
55-64	46	23.7%
65+	102	52.6%
Total	194	100.0%

Income levels of Allamakee County respondents were fairly well distributed from \$15,000 up to \$149,999 income levels, with the highest percentage of 21.7% at the \$50,000 to \$74,999 income level. See Table 3.9: Allamakee County Reported Household Income.

**Table 3.9: Allamakee County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	8	4.2%
\$15,000 to \$24,999	25	13.2%
\$25,000 to \$34,999	24	12.7%
\$35,000 to \$49,999	32	16.9%
\$50,000 to \$74,999	41	21.7%
\$75,000 to \$99,999	24	12.7%
\$100,000 to \$149,999	21	11.1%
\$150,000 to \$199,999	9	4.8%
\$200,000 or more	5	2.6%
Total	189	100.0%

## Community Characteristics

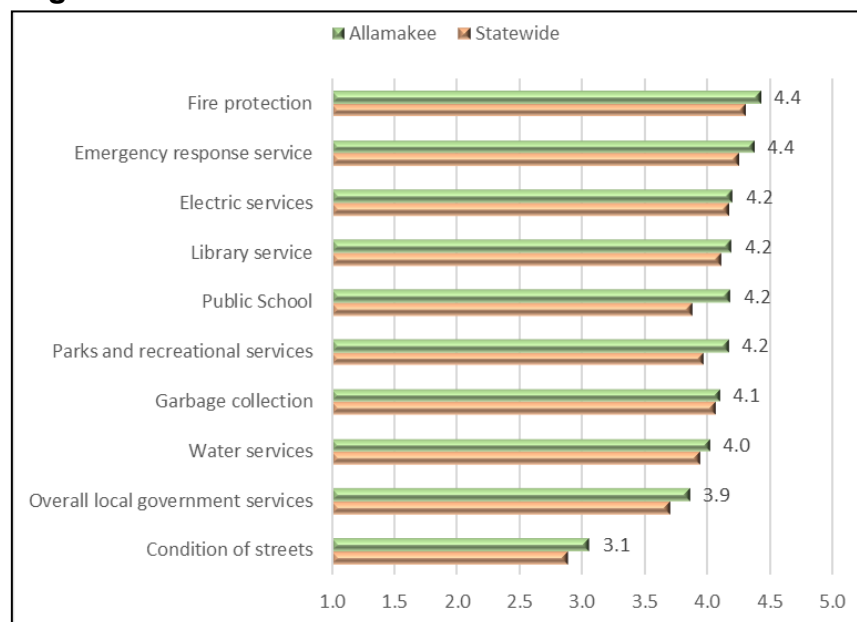
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including the City of Waukon in Allamakee County.<sup>2</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. Community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor and 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective and 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Allamakee County respondents perceived all the local public services as good/very good except for "condition of streets." All the values are higher than statewide averages. Graph 3.2: Ratings of Local Public Services shows the ratings, with "fire protection" and "emergency response service" rated the highest.

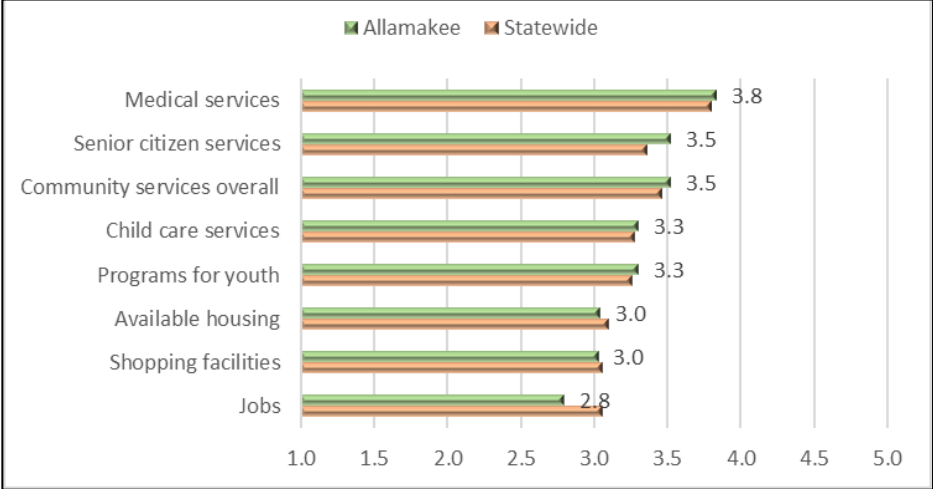
**Graph 3.2: Ratings of Local Public Services**



<sup>2</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.

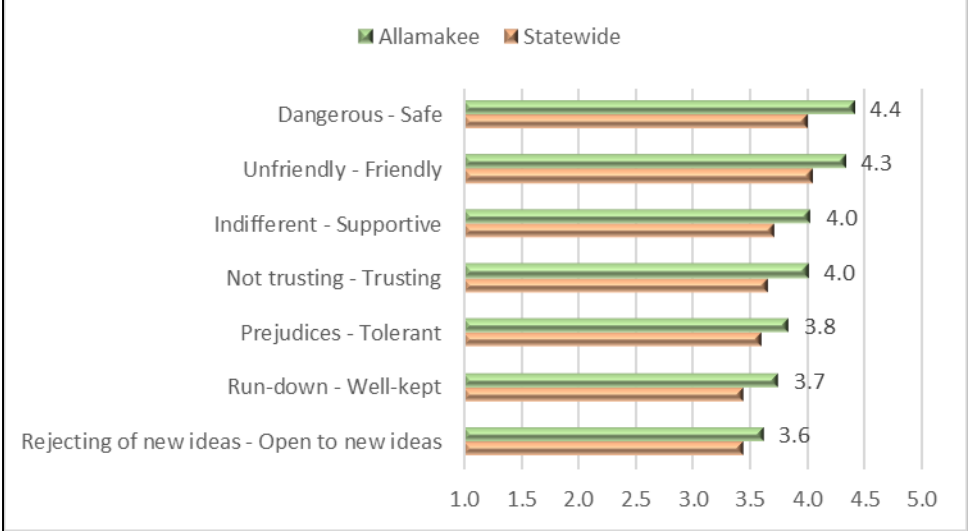
Non-governmental services were not rated as highly when compared to governmental services. Graph 3.3: Ratings of Local Non-Governmental Services shows that respondents rated “medical service” and “senior services” highest score and “provision of jobs” with the lowest score, which was below the statewide average.

**Graph 3.3: Ratings of Local Non-Governmental Services**



Graph 3.4: Adjectives Describing the Community shows that the communities where Allamakee County respondents reside were perceived to be nice places to live. Their ratings were all high compared to the statewide data.

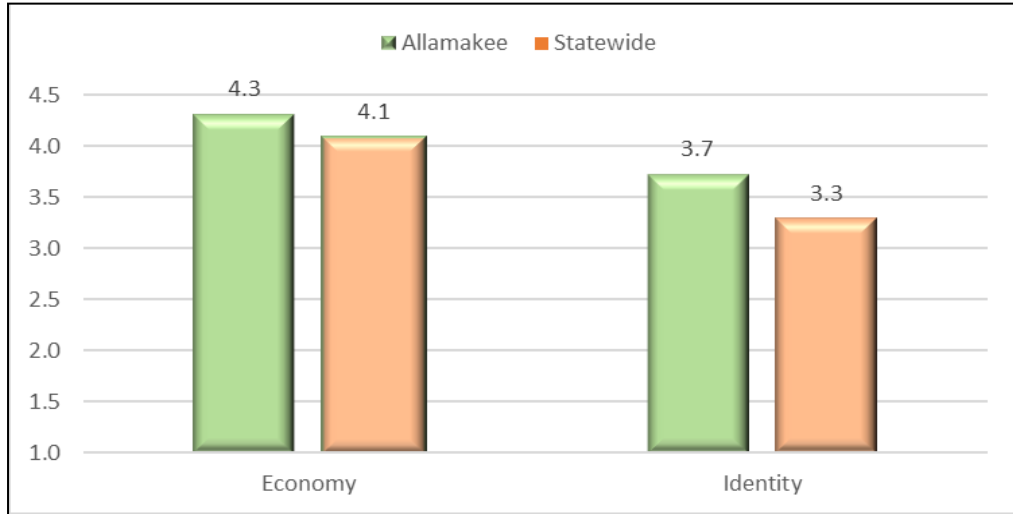
**Graph 3.4: Adjectives Describing the Community**



### Perceived Local Impacts of Lansing Generating Station

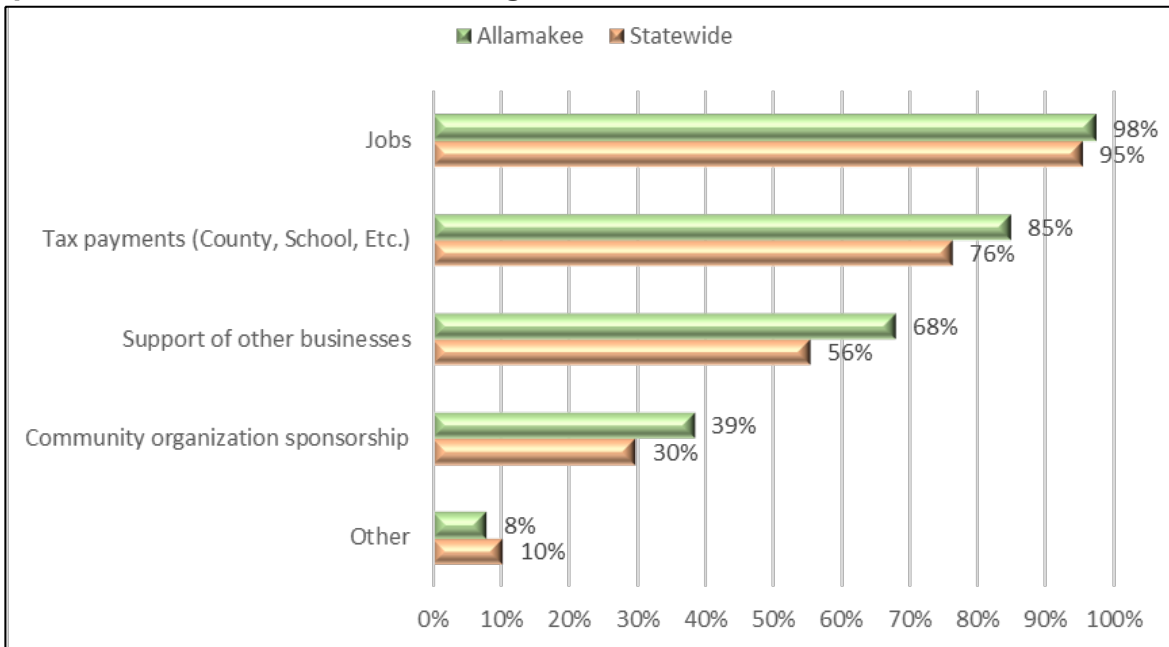
On a scale of 1 – 5 (1 being not at all important to 5, extremely important), respondents in Allamakee County saw the Lansing Generating Station as being more important to their area’s economy and identity relative to the state average in our survey. See Graph 3.5: Local Importance of the Generating Station for more details.

**Graph 3.5: Local Importance of the Generating Station**



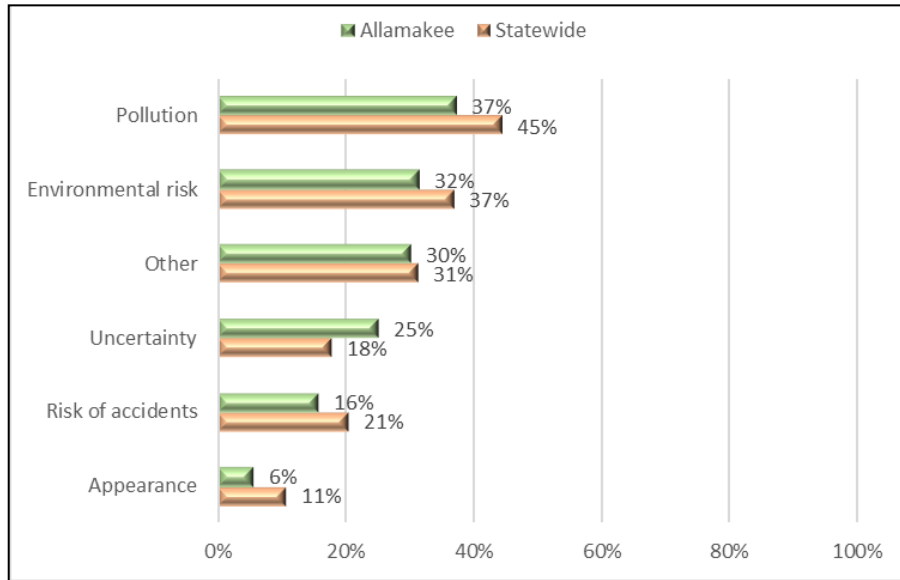
Compared to the statewide data, Allamakee County respondents were more likely to see benefits from the power plant in their community. Per Graph 3.6: Benefits of the Generating Station, almost all stated jobs were a benefit of having the power plant in their community, followed by tax payments and support of other businesses.

**Graph 3.6: Benefits of the Generating Station**



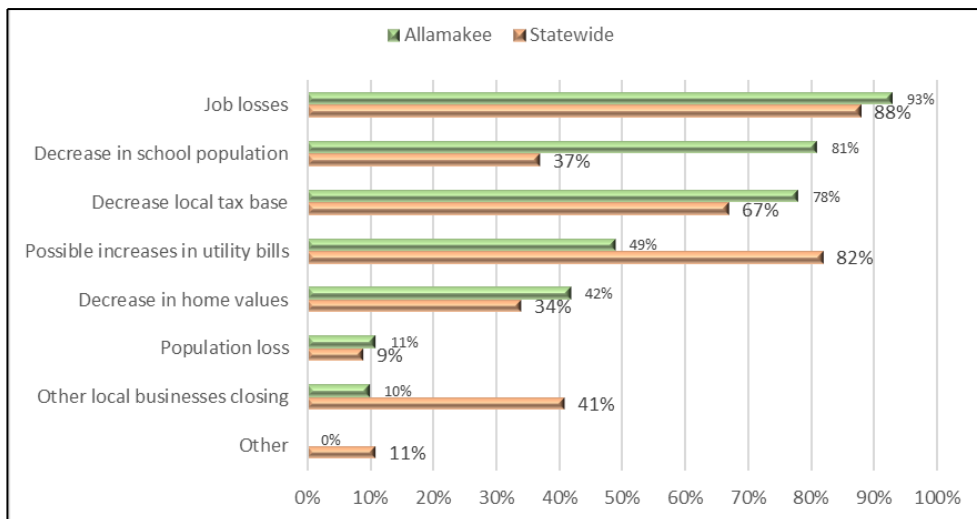
Residents were less likely to perceive negative local effects due to the presence of the Lansing Generating Station compared to statewide averages. Graph 3.7: Negative Effects of the Generating Station show that respondents were less likely to believe that the plant had negative effects. The only exception was “uncertainty.”

**Graph 3.7: Negative Effects of the Generating Station**



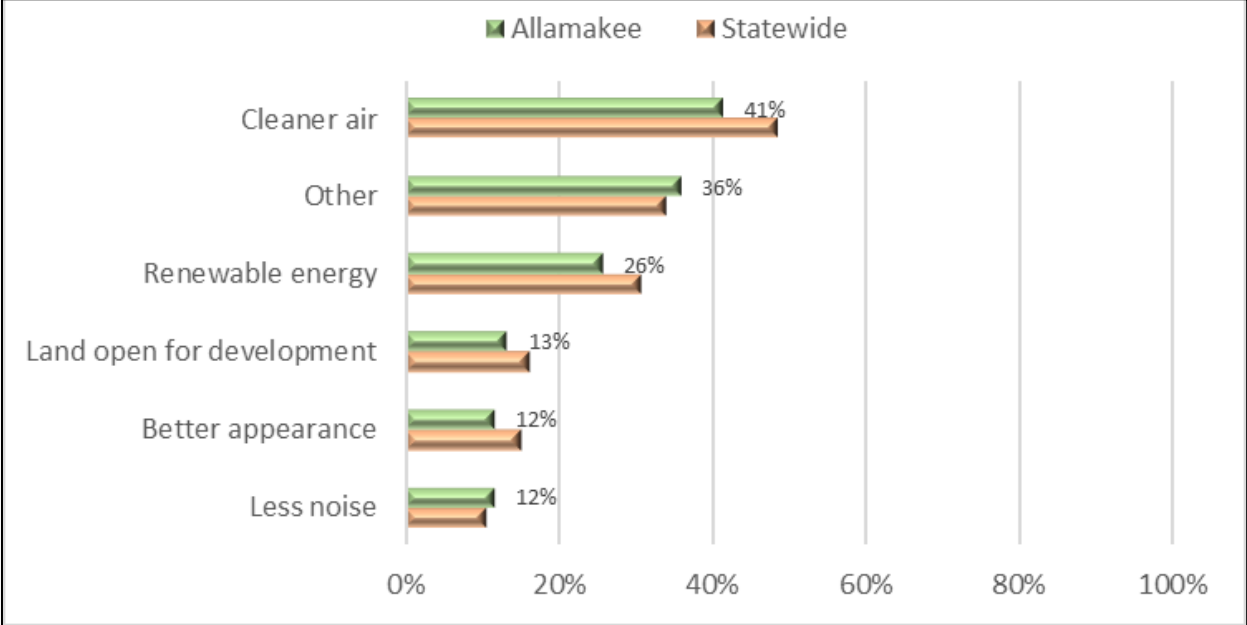
As the Lansing Generating Station prepares to close, concerns of Allamakee County respondents were higher compared to the statewide data in several areas: “job losses”, “decrease in local tax base”, “decrease in home values”, “decrease in school population” and “population loss” in general. However, residents were less worried about “possible increases in utility bills” and “other business closing.” Graph 3.8: Concerns about Closure provides details.

**Graph 3.8: Concerns about Closure**



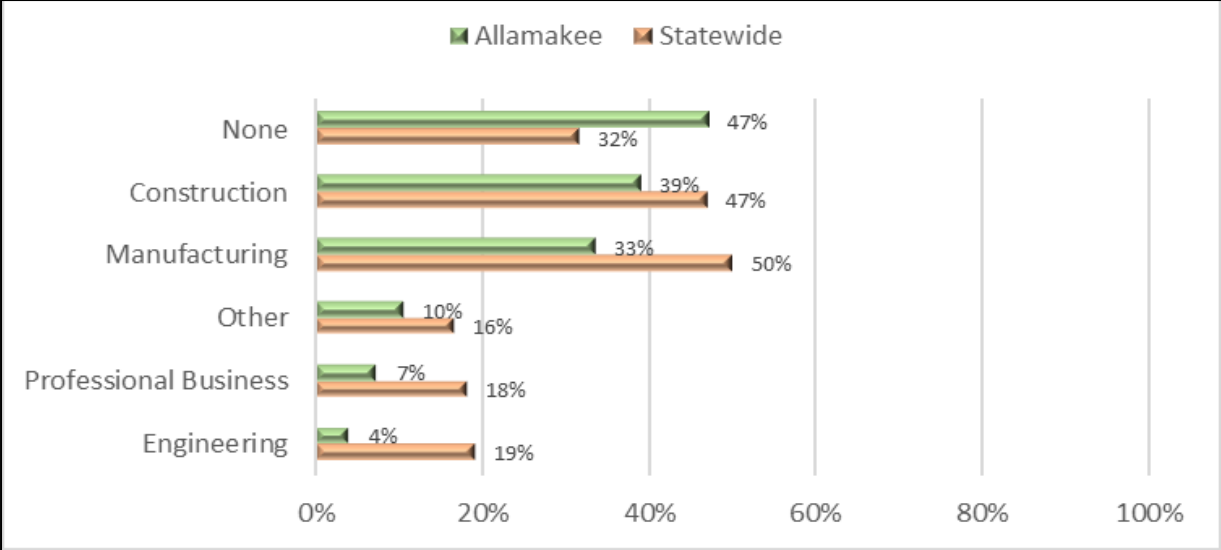
As the Lansing Generating Station closes, residents of Allamakee County are less likely to expect potential positive effects compared to statewide averages except for “less noise,” per Graph 3.9: Positive Effects of Closure.

**Graph 3.9: Positive Effects of Closure**



Residents of Allamakee were overall less likely to believe that there would be local jobs available to Lansing Generating Station workers. At **47%**, almost half of Allamakee County respondents believed that there would be no local jobs available for the employees of the Lansing Generating Station. See Graph 3.10: Other Jobs Available for Power Plant Workers for details

**Graph 3.10: Other Jobs Available for Power Plant Workers**





## Focus Groups and Key Informant Interviews

We spoke individually with five key informants in Allamakee County. The interview participants included elected officials, an economic development staff person, and local government staff. Following our interview script (see **Appendix 2**) we asked interviewees their views on 1) Benefits of the Lansing Generating Station for the local area; 2) Drawbacks or any negative effects the plant might have; and 3) Their thoughts about the future of the plant.

### Benefits

Like in most counties, the local jobs supported were the first benefit mentioned by most of our interview participants. **“[The Lansing Generating Station] pays the top-end wages in the county. We don’t have a ton of union jobs here.”**

A local government employee also shared that they believed that the plant was **“the highest single tax payer in the county.”**

Charitable contributions were also seen as a significant benefit, **“Alliant is so good in terms of having staff volunteer in parks. It’s easy to write a check [...] but they were asking what they could do to put boots on the ground.”**

### Drawbacks

The participants mentioned few drawbacks to having the plant located in the county. When asked about local businesses that served the plant, one mentioned that the plant did not make very many local purchases, **“[They didn’t have] a long list of local suppliers. They handled most things internally. They were not a user of many services here.”**

Another referenced the fact that Allamakee County relies on tourism as a significant part of the local economy. **“It is a picturesque area, and coal trains are not always attractive to look at.”**

### Future

All of the individuals with whom we spoke were well aware that the plant was going to be closing. One elected official shared when they learned that the plant was slated for closure, **“We met with them 2 years ago. Maybe a little longer. They didn’t have a real good timeline. They just wanted to let us know that it was going to happen and what the plan was. It was going to be a gradual decline.”**

There was little concern that the closure would have a negative impact on the county’s overall economy. **“[The closure] won’t impact [agriculture] or tourism, our largest industries. They were a good employer, but the jobs were fairly well absorbed. [...] There will be positives if something lands there again.”**

The biggest area of concern for most was the loss of Utility Replacement Tax revenue for the school district. **“If we can get over the property tax hurdle, there won’t be a major impact. [But,] if the school struggles it will be a negative impact.”**

Although there were concerns about school funding initially, participants were hopeful that the school had things under control. **“The school was very proactive.”** Several of the participants mentioned that the school was able to pay down debt early to keep the tax rate fairly consistent in the district. Although the funding mix for the school will change, there was little concern that there would be a major drop in school funding. **“[The school] didn’t feel it was going to be a big impact. Their student population was going to be the same.”** One concern mentioned was that the school may have a harder time in the future with bonding for capital projects given the lower tax base.

Overall, our interview participants were positive about communication with Alliant Energy regarding the closure, **“I can call Alliant at any time. I hope that can continue.”**

There is some concern about the viability of the site for future development, **“What is it going to look like? Is it going to look like nothing was there? There are a lot of ideas, but what is going to be allowed?”** Communication has already begun about potential new uses of the property, **“They are trying to talk with us about future development on the site. We ran a proposal by them, but it didn’t fit the timeline for the business or the company.”** Still there are concerns that the site may never be redeveloped. **“It might be limited as a brownfield. The site has qualities, but you have to find the right business, the right person, the right time. There will be extensive cleanup involved. Settling ponds that have to be cleaned up. Alliant may never be able to move the property.”**

There was no consensus about what the best use of the land would be. One respondent mentioned, **“It’s down by the river, personally, I think it would be a great site for the Iowa Natural Heritage Foundation.”** While another was emphatic that, **“We can’t turn it into a park. That site still needs to generate property tax or dollars. We want people to spend money there.”**

Overall, the interview participants seemed optimistic about the future. Several shared the sentiment that the closure is **“not nearly as scary as when you first start thinking about it.”** Open communication with Alliant, among local officials, and with residents was a significant element of the transition according to those we interviewed. **“I was really glad that we had a good relationship with Alliant. [...] Open communication was a really big piece of that. Often they can’t tell you everything but say that ‘you should be prepared for this.’”**

All of those we interviewed emphasized the importance of openness and community meetings throughout the process. Although plant closure had been unthinkable to local officials only five years earlier, a well-planned transition has allowed the community to begin planning for the future.

## Des Moines County (Burlington Generating Station)

### Plant Characteristics

**Owner:** Interstate Power and Light (Alliant Energy) 100%

**Plant Nameplate Capacity:** 212.0 MW (megawatts)

**Number of Employees (2020):** 39

The Burlington Generating Station is located along the Mississippi River in rural Des Moines County approximately three miles southeast of the City of Burlington. Figure 4.1 displays an aerial view of the station. This image was taken July 8, 2019, as part of the National Agriculture Imagery Program (NAIP) through the United States Department of Agriculture Farm Agency.

**Figure 4.1: Aerial Photograph of the Burlington Generating Station**



## Plant Expenditures and Employment

The Burlington Generating Station is the only power plant included in this report to not see a reduction in fuel or overall expenses over the five years included in this study. From 2016 to 2020 there was a **6.1%** increase in overall expenditures. During the same time period, there was a **15.4%** reduction in staffing (from 39 to 33). The staffing reduction may be in anticipation of the announced transition of the plant from coal to natural gas. This planned conversion was announced in the Fall of 2020 as part of Alliant Energy’s “Iowa Clean Energy Blueprint.”

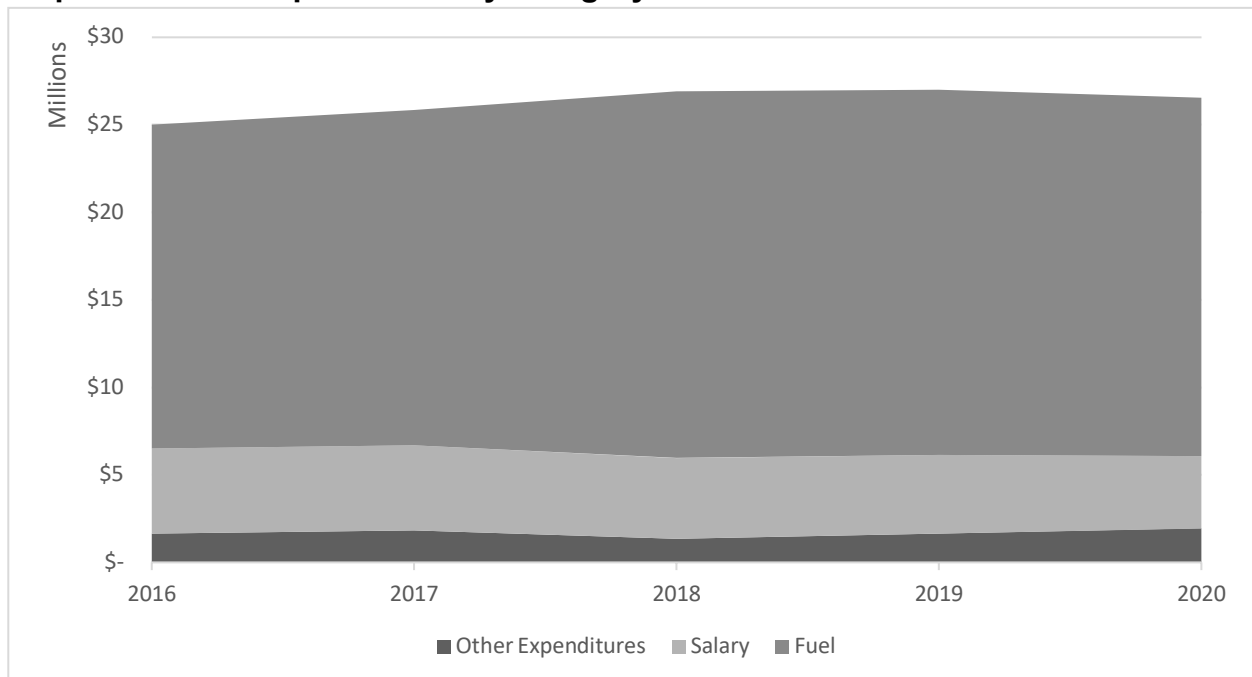
**Table 4.1: Basic Operating Expenses**

	2016	2017	2018	2019	2020
<b>Employees</b>	39	39	37	36	33
<b>Fuel Expenses</b>	\$18,496,032	\$19,158,290	\$20,942,599	\$20,863,581	\$20,487,368
<b>Total Expenses</b>	\$25,014,286	\$25,847,081	\$26,918,740	\$27,003,355	\$26,563,514

Table 4.1: Basic Operating Expenses shows relatively steady expenditures over five years. The dollar figures below were drawn from Alliant Energy’s “Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report” from 2016 to 2020. All dollar figures are shown as reported on the FERC Form 1.

Like all power plants included in this study, the majority of spending is attributed to fuel expenses and salaries, as presented in Graph 4.1: Plant Expenditures by Category

**Graph 4.1: Plant Expenditures by Category**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the Burlington Generating Station was responsible for **\$13,520,669** in local economic activity in 2020, as presented in Table 4.2: Local Impact on Industry Spending in 2020 (2021 Dollars). This figure does not include the value of electric sales from the plant. These dollar figures are reported in this analysis to reflect the values adjusted for 2021 inflation. Indirect impacts of the plant include all local sales to the power plant itself and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” shows the relative importance of the power plant to that sector. For example, the Burlington Generating Station supports **1.30%** of all activity in the Transportation and Warehousing Sector in Des Moines County.

Based on calculations using the reported total output figures in Table 4.2, a significant portion of the local impacts of the plant are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Finance and Insurance, and Administrative and Waste Services.

The inclusion of the Mining sector sales is due to how proprietors are accounted for in the IMPLAN system. All proprietor data are place-of-residence-based. That is, a well or mine owner who lives in Iowa but whose activities take place in another state will show up in the IMPLAN data as a local proprietor with local sales. Therefore, it is possible to have income from mining, or oil and gas extraction in a county where these activities are not physically taking place. Even if the activities are not local, the income is received by residents of Des Moines County and counts as a local economic impact.

Overall, IMPLAN calculates that the Burlington power plant supports **0.30%** of economic activity in Des Moines County in addition to the revenues of the plant itself.

**Table 4.2: Local Impact on Industry Spending in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$345	\$1,572	\$1,918	0.00%
Mining	\$277,714	\$345	\$278,058	1.90%
Utilities	\$2,127,824	\$9,608	\$2,137,432	6.81%
Construction	\$96,737	\$30,300	\$127,038	0.07%
Manufacturing	\$28,389	\$10,948	\$39,337	0.00%
Wholesale Trade	\$594,164	\$106,412	\$700,575	0.30%
Retail Trade	\$173,735	\$371,535	\$545,271	0.23%
Transportation and Warehousing	\$2,975,929	\$80,757	\$3,056,686	1.30%
Information	\$208,121	\$69,028	\$277,149	0.52%
Finance and Insurance	\$833,151	\$236,873	\$1,070,024	0.55%
Real Estate and Rental	\$314,171	\$592,107	\$906,278	0.30%
Prof, Scientific, and Tech Services	\$910,832	\$86,429	\$997,261	0.79%
Management of Companies	\$83,144	\$20,261	\$103,406	0.32%
Administrative and Waste Services	\$1,424,447	\$71,323	\$1,495,770	1.85%
Educational Services	\$2,160	\$21,543	\$23,703	0.24%
Health and Social Services	\$18	\$671,094	\$671,113	0.15%
Arts, Entertainment, and Recreation	\$10,835	\$60,552	\$71,387	0.14%
Accommodation and Food Services	\$254,540	\$188,957	\$443,497	0.33%
Other Services	\$109,745	\$197,005	\$306,750	0.25%
Government & non-NAICs	\$251,752	\$16,265	\$268,017	0.14 %
<b>Total</b>	<b>\$10,677,754</b>	<b>\$2,842,915</b>	<b>\$13,520,669</b>	<b>0.30%</b>

## Employment Impacts

According to the IMPLAN model, the Burlington Generating Station supports the equivalent of **110.94** jobs in Des Moines County, as shown in Table 4.3: Local Employment Impacts in 2020. The direct employment numbers represent the **33** individuals reported as employed by the energy companies on the FERC Form 1. For the indirect and induced jobs, the totals indicate the sum of all jobs across the sectors in that sector. IMPLAN considers contractors and proprietors who earn money as jobs.

For more information on how these numbers are calculated, see pg. 5.

**Table 4.3: Local Employment Impacts in 2020**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.00	0.01	0.02
Mining	0.00	0.73	0.00	0.73
Utilities	33.00	3.08	0.02	36.10
Construction	0.00	0.50	0.17	0.66
Manufacturing	0.00	0.13	0.04	0.17
Wholesale Trade	0.00	0.98	0.36	1.33
Retail Trade	0.00	1.85	4.70	6.54
Transportation and Warehousing	0.00	10.30	0.68	10.97
Information	0.00	0.69	0.24	0.93
Finance and Insurance	0.00	3.21	1.06	4.27
Real Estate and Rental	0.00	1.74	0.92	2.66
Prof, Scientific, and Tech Services	0.00	5.70	0.60	6.30
Management of Companies	0.00	0.44	0.11	0.55
Administrative and Waste Services	0.00	19.51	0.97	20.48
Educational Services	0.00	0.04	0.47	0.51
Health and Social Services	0.00	0.00	5.68	5.69
Arts, Entertainment, and Recreation	0.00	0.27	0.75	1.02
Accommodation and Food Services	0.00	4.19	2.87	7.06
Other Services	0.00	1.22	2.75	3.98
Government & non-NAICs	0.00	0.86	0.10	0.96
<b>Total</b>	<b>33.00</b>	<b>55.44</b>	<b>22.51</b>	<b>110.94</b>

## Employee Compensation

The Burlington Generating Station supports **\$7,538,082** in local employee compensation, as is shown in Table 4.4: Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **33** Burlington Generating Station jobs represent more than half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$4,496,192**, or nearly **60%** of total employee compensation supported by the plant goes to jobs within the Utility sector.

**Table 4.4: Local Employee Compensation in 2020 (2021 Dollars)**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$14	\$61	\$75
Mining	\$0	\$496	\$20	\$516
Utilities	\$4,211,366	\$283,476	\$1,351	\$4,496,192
Construction	\$0	\$19,466	\$6,199	\$25,665
Manufacturing	\$0	\$6,099	\$2,080	\$8,179
Wholesale Trade	\$0	\$66,853	\$25,828	\$92,681
Retail Trade	\$0	\$44,318	\$120,511	\$164,829
Transportation and Warehousing	\$0	\$823,461	\$32,546	\$856,007
Information	\$0	\$30,262	\$10,183	\$40,445
Finance and Insurance	\$0	\$168,752	\$41,029	\$209,781
Real Estate and Rental	\$0	\$21,279	\$10,217	\$31,496
Prof, Scientific, and Tech Services	\$0	\$262,177	\$26,318	\$288,494
Management of Companies	\$0	\$37,032	\$9,024	\$46,056
Administrative and Waste Services	\$0	\$538,572	\$30,707	\$569,279
Educational Services	\$0	\$773	\$10,107	\$10,880
Health and Social Services	\$0	\$9	\$334,621	\$334,630
Arts, Entertainment, and Recreation	\$0	\$4,584	\$19,169	\$23,753
Accommodation and Food Services	\$0	\$87,500	\$60,025	\$147,525
Other Services	\$0	\$37,890	\$70,388	\$108,278
Government & non-NAICs	\$0	\$75,254	\$8,065	\$83,319
<b>Total</b>	<b>\$4,211,366</b>	<b>\$2,508,266</b>	<b>\$818,450</b>	<b>\$7,538,082</b>



**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 4.5: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property taxes in the future.

School funding is even more complex. Although **0.68%** of the 2020-2021 revenues to the Burlington School District came from Utility Replacement Tax, even a total loss of this revenue would not result in the same decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue.

A significant portion of Concordia Township’s full budget is funded by the utility replacement tax generated by the power plant. In addition to the figures shown in Table 4.5, **\$35,507.55** was paid to Southeastern Community College, and **\$5,244.95** to the Des Moines County Extension Office.

**Table 4.5: Value of FYE 2021 Utility Replacement Tax**

	Des Moines County	Burlington School District	Concordia Township	Other*	Total
Replacement Funds	\$328,947	\$427,229	\$18,169	\$51,840	\$826,185
Percent of FYE 21 Revenues	0.97%	0.68%	43.69%	N/A	

\* Other may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

## Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

Des Moines County had the third highest response rate of any county included in the study.

137 Des Moines residents returned the survey for a response rate of **13.7%**.

**Table 4.6: Des Moines County Response Rate**

County	Responses	Response Rate
Des Moines County (Burlington Power Plant)	137	13.7%
Overall	879	12.6%

### The Respondents

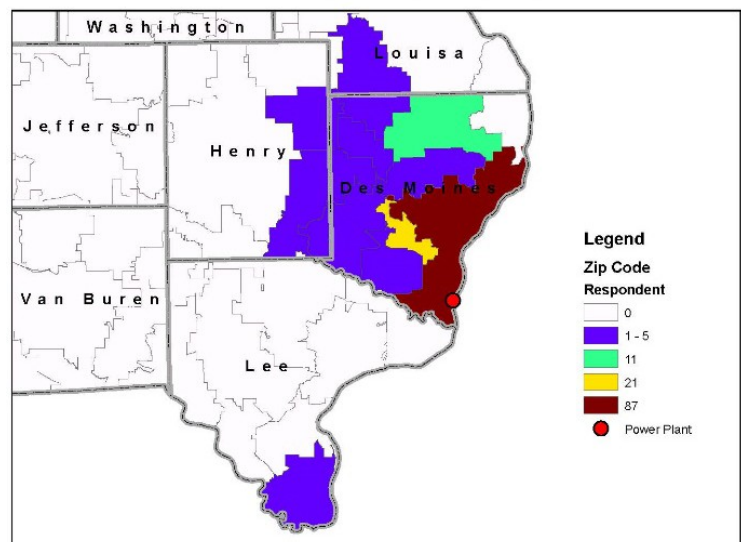
Out of 137 Des Moines County respondents, 135 reported the zip codes where they live. Thirteen zip codes were represented of which more than half (**64%**) came from zip code 52601 and 15% from 52655. The rest originated from other zip codes. Table 4.7: Des Moines County Zip Codes shows the percentage of respondents by zip code and Figure 4.2: Respondents by Zip Code shows the location of respondents.

There were a few respondents who could potentially reside in nearby counties such as Louisa, Henry and Lee. For this report, all respondents will be referred as “Des Moines County respondents.”

**Table 4.7: Des Moines County Zip Codes**

Zip code	Number	Percent
52601	87	64.4%
52655	21	15.6%
52637	11	8.1%
52650	5	3.7%
52645	3	2.2%
52623	2	1.5%
52632	1	0.7%
52633	1	0.7%
52638	1	0.7%
52640	1	0.7%
52644	1	0.7%
52660	1	0.7%
Total	135	100.0%

**Figure 4.2: Respondents by Zip Code**



**More than 50%** of the Des Moines County respondents reported being 65 or older, this is older than the state as a whole. All age levels were represented. Average household size is slightly smaller, 2.15 individuals per household compared with a statewide average of 2.3. See Table 4.8: Des Moines County Reported Ages for details.

**Table 4.8: Des Moines County Reported Ages**

Age	Number	Percent
18-24	3	2.2%
25-34	9	6.7%
35-44	7	5.2%
45-54	14	10.4%
55-64	29	21.5%
65+	73	54.1%
Total	135	100.0%

Income levels of Des Moines County respondents were fairly well distributed from \$15,000 up to \$149,999 income levels, with the highest percentage at the \$50,000 to \$74,999 income level. See Table 4.9: Des Moines County Reported Household Income.

**Table 4.9: Des Moines County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	4	3.3%
\$15,000 to \$24,999	12	9.8%
\$25,000 to \$34,999	10	8.2%
\$35,000 to \$49,999	17	13.9%
\$50,000 to \$74,999	38	31.1%
\$75,000 to \$99,999	18	14.8%
\$100,000 to \$149,999	10	8.2%
\$150,000 to \$199,999	8	6.6%
\$200,000 or more	5	4.1%
Total	122	100.0%

## Community Characteristics

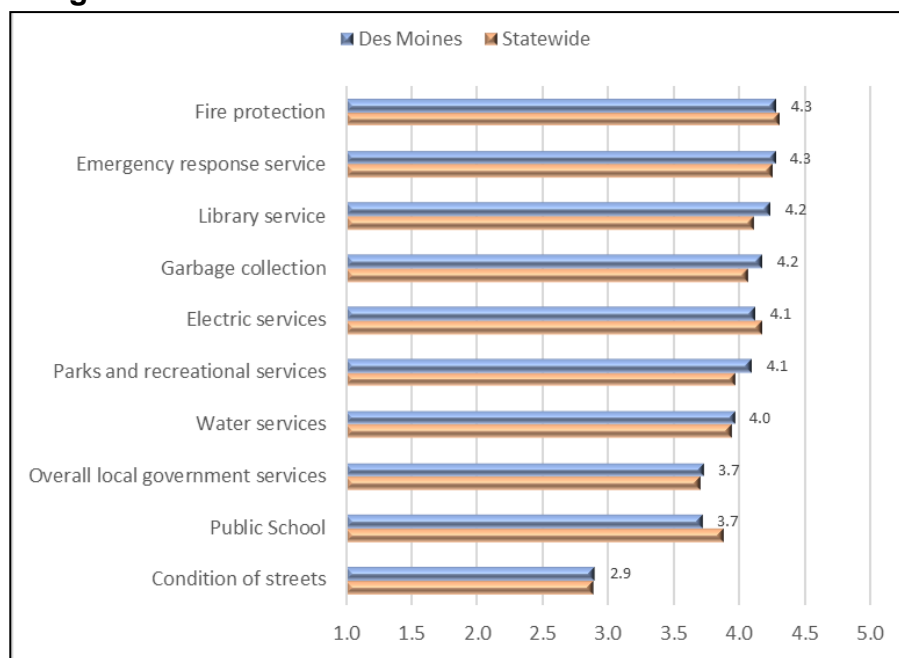
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including the City of Mediapolis in Des Moines County.<sup>1</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor and 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective to 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Des Moines County respondents perceived all local public services as good/very good except for "condition of streets." All values are higher or equal to statewide averages. Graph 4.2: Ratings of Local Public Services shows the ratings, with "fire protection" and "emergency response service" rated the highest.

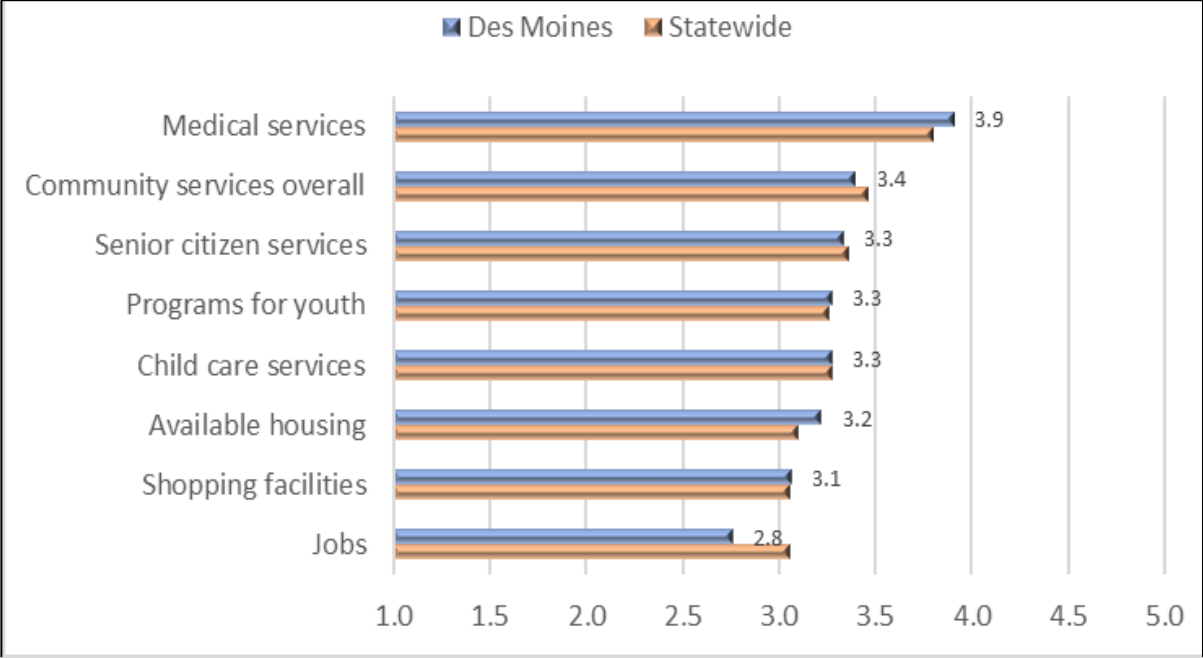
**Graph 4.2: Ratings of Local Public Services**



<sup>1</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.

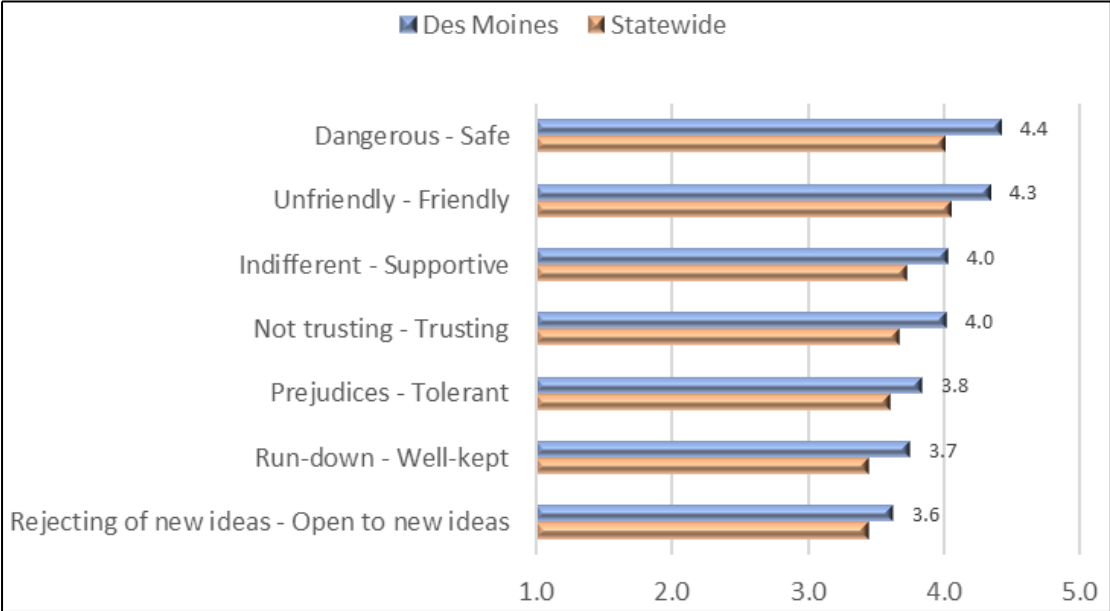
Non-governmental services were not rated as highly when compared to governmental services. Graph 4.3: Ratings of Local Non-Governmental Services shows that respondents rated “medical services” and “senior citizen services” highest; “provision of jobs” had the lowest score.

**Graph 4.3: Ratings of Local Non-Governmental Services**



Graph 4.4: Adjectives Describing the Community shows that the communities where Des Moines County respondents live were generally perceived to be nice places to live. Their ratings were all high compared to the statewide data.

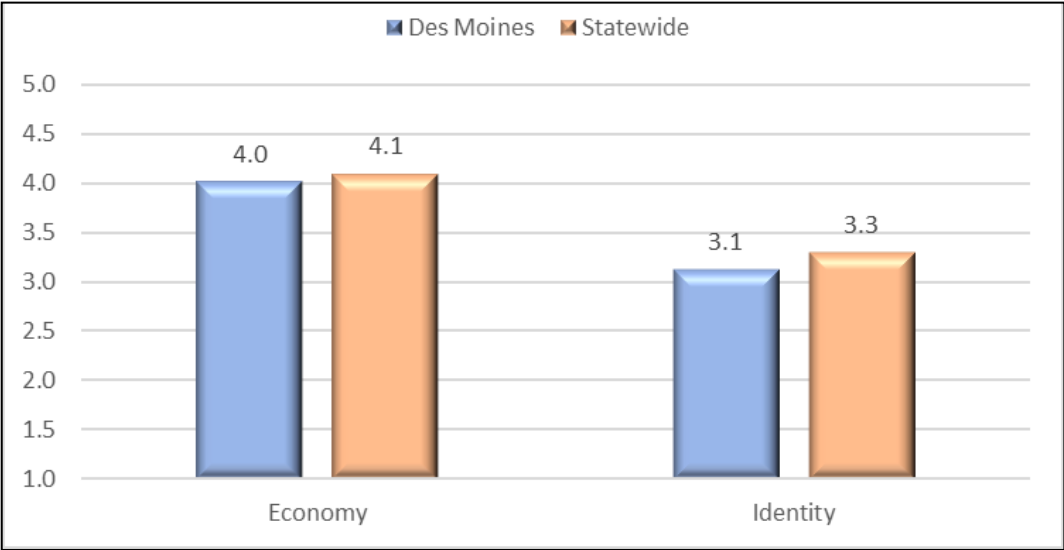
**Graph 4.4: Adjectives Describing the Community**



**Perceived Local Impacts of Burlington Generating Station**

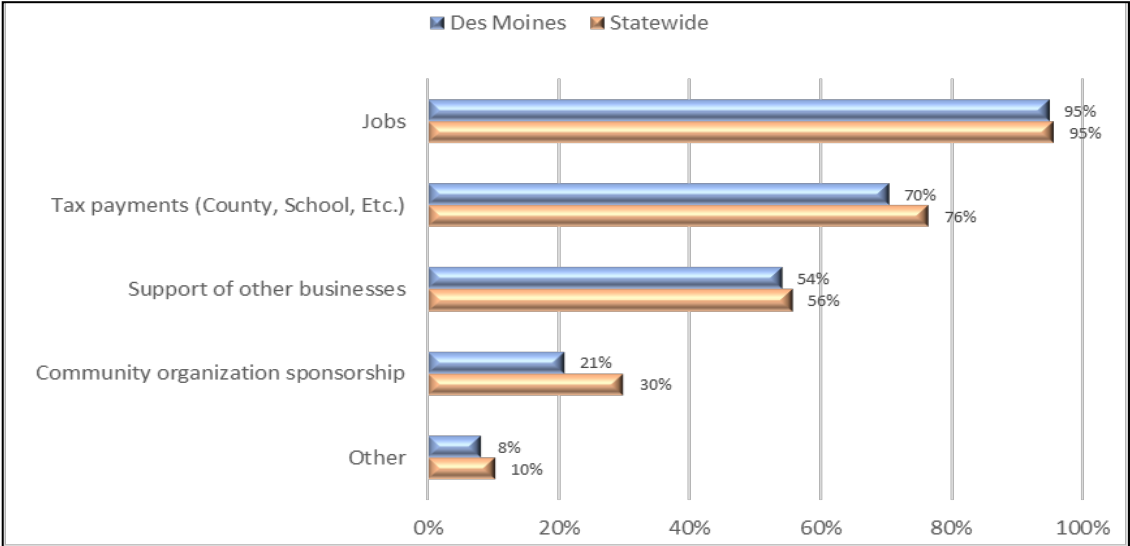
On a scale of 1 – 5 (1 being not at all important to 5 as extremely important), respondents in Des Moines County saw the Burlington Generating as very important to their area’s economy and important to local identity. These results were similar to statewide averages from this project. See Graph 4.5: Local Importance of the Generating Station for more details.

**Graph 4.5: Local Importance of the Generating Station**



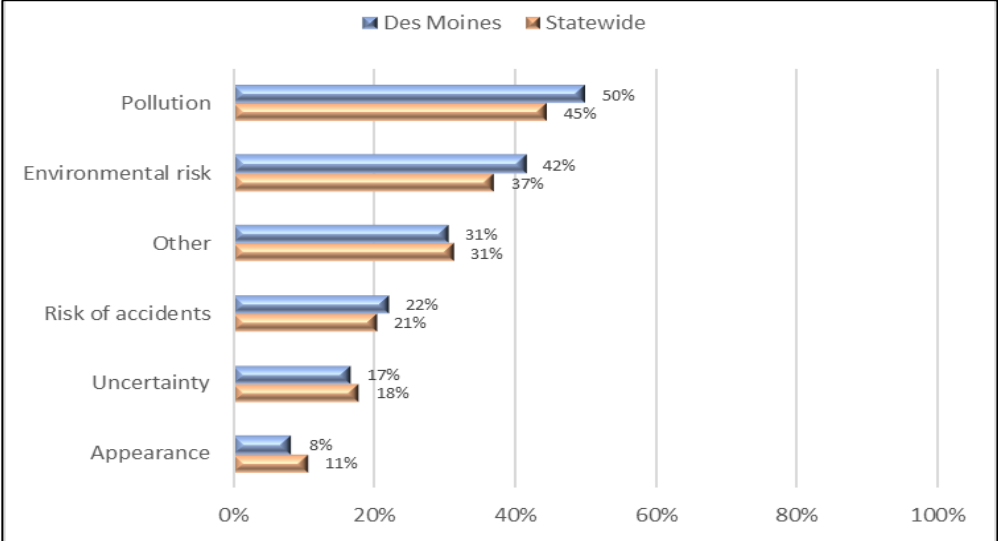
Compared to the statewide data, Des Moines County respondents were less likely to cite benefits from the power plant in their community. Per Graph 4.6: Benefits of the Generating Station, “job provision” was the most commonly cited benefit, followed by “tax payments to the county”, “school” and “other local governments.”

**Graph 4.6: Benefits of the Generating Station**



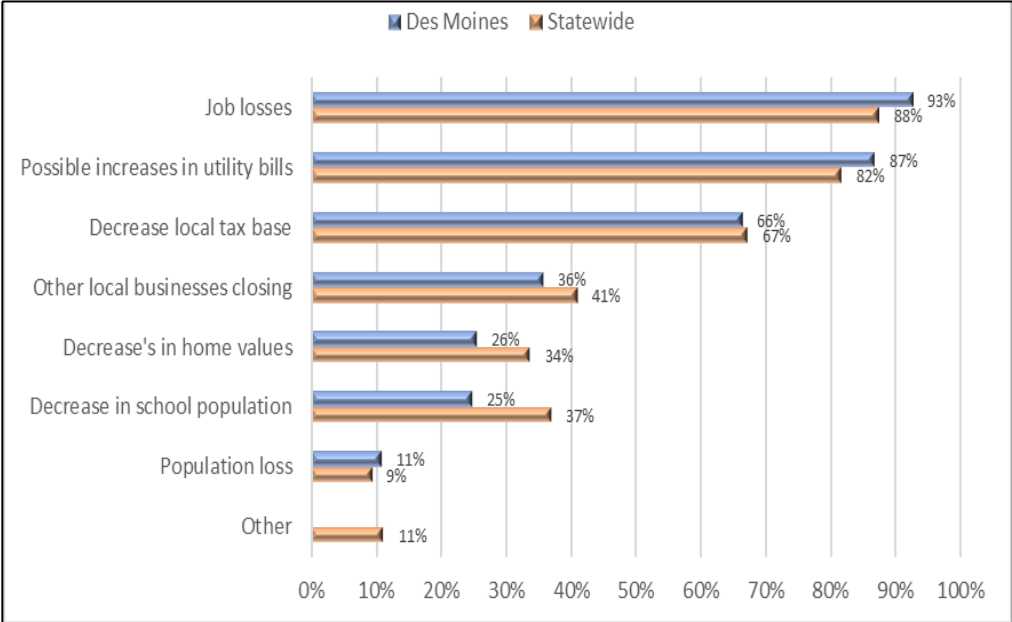
Residents were more likely to perceive negative local effects due the presence of Burlington Generating Station compared to statewide averages. Graph 4.7: Negative Effects of the Generating Station show that respondents in Des Moines County were more likely to indicate “pollution” or “environmental risk.”

**Graph 4.7: Negative Effects of the Generating Station**



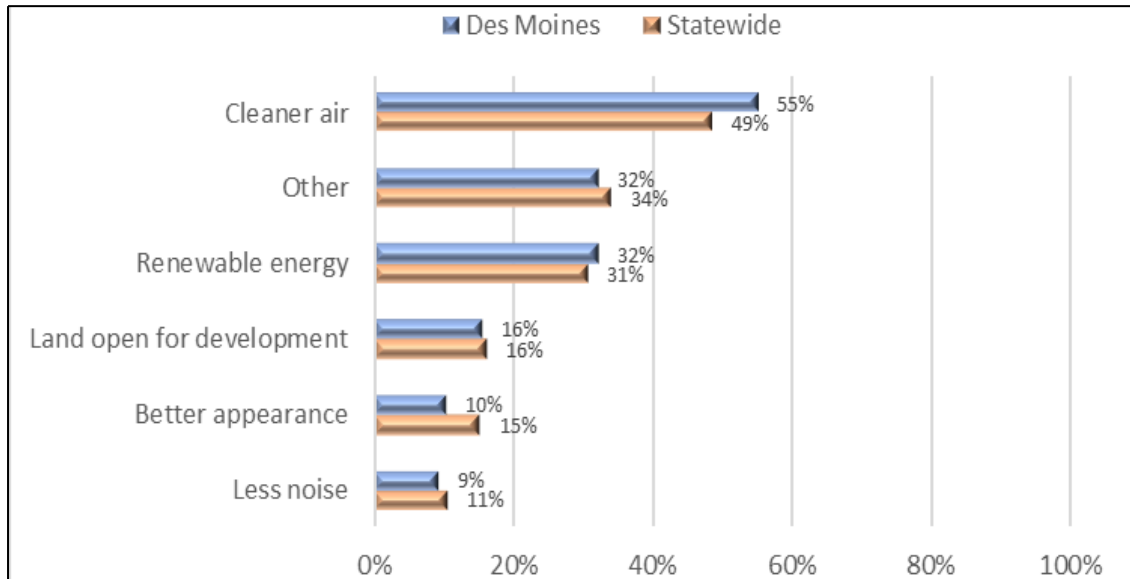
If the Burlington Generating Station were to close, concerns of Des Moines County respondents were higher compared to statewide averages on three issues: “job losses”, “possible increases in utility bills”, and “population loss”. On the other hand, they were less concerned about the following: a “decrease in local tax base”, “other local business closing”, “decreases in home values”, and “decreases in school population”. Graph 4.8: Concerns about Closure provides details.

**Graph 4.8: Concerns about Closure**



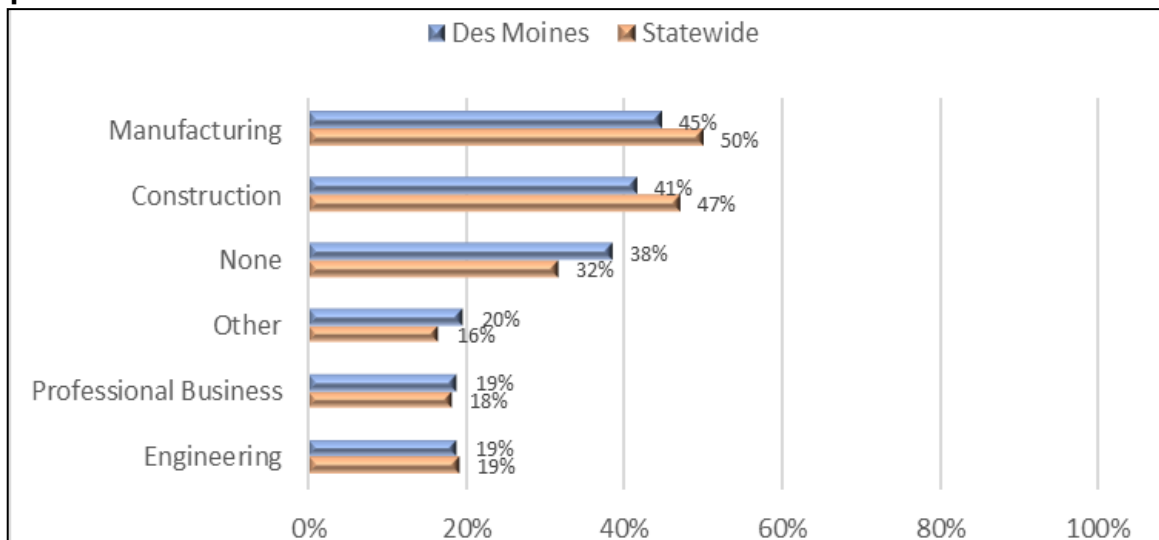
If the Burlington Generating Station were to close, respondents were more likely to cite “cleaner air” and “renewable energy” as potential positive effects compared to the statewide data. Residents of Des Moines County were likely to expect “better appearance” or “less noise”, reflected in the data in Graph 4.9: Positive Effects of Closure.

**Graph 4.9: Positive Effects of Closure**



Residents of Des Moines County were overall less likely to believe that there would be local jobs available to Burlington Generating Station workers. At **38%**, more than a third of Des Moines County respondents believed that there would be no local jobs available for the employees of the Burlington Generating Station if they were to lose their jobs. Graph 4.10: Other Jobs Available for Power Plant Workers provides details.

**Graph 4.10: Other Jobs Available for Power Plant Workers**





## Focus Groups and Key Informant Interviews

We held a small focus group and spoke individually with a total of five key informants in Des Moines County. The interview participants included elected officials, an economic development staff person, local Council of Government staff, and a private company which serves the power plant. Following our interview script (see **Appendix 2**), we asked about 1) Benefits of the Burlington Generating Station for the local area; 2) Drawbacks or any negative effects the plant might have; and 3) Their thoughts about the future of the plant.

### Benefits

The economic benefits were the first to be mentioned in our focus group and interviews. **“Obviously, employment is the biggest advantage, it’s an industry.”** In addition to employment there was a lot of discussion of some of the local industries that support the plant **“There are a lot of different service providers that support the plant. [...] I think that the impact would have to be substantial. It’s a big operation and it’s complicated.”**

Interview participants involved in economic development spoke about the participation of plant employees in local economic development efforts. **“Alliant is active in the local economic development board “Grow Greater Burlington.” They are so important... I suspect that if the plant is no longer in operation that [Alliant] won’t go away, [...] but having that close relationship with them has been very important.”** One specific example cited was the development of a certified site, **“They were a key partner in getting a certified site in getting the energy infrastructure and sharing the costs of studies and everything that had to be done out there.”**

Employees of the plant have been active in local chamber activities, **“We’ve had great participation from some of the employees out there in leadership programs and plant manager meetings. We’ve already experienced some of that loss with some of the employees leaving.”**

The participants also mentioned the value of Alliant Energy’s charitable giving. **“They are great local funders. You see their logo just about everywhere when you’re participating in community events.”**

Another benefit to having the power plant that participants mentioned was the availability and reliability of locally produced electricity. **“I assume that we are getting power from there. We might not have an equivalent power supply. We have a number of industries that require a lot of power. They may have chosen to be here to be close to a power generating station.”**

### Drawbacks

The participants mentioned few drawbacks to having the plant located in the county. One participant speculated that there may be environmental impacts. **“There has to be an environmental aspect to it. There are hundreds of tons of coal stored on site.”**

In reference to emissions, the general consensus was that with the plant on the Mississippi river and the prevailing winds coming from the West that any pollutants would not impact the county. **“If you look at the greater region, there are several towns over there [in Illinois] that are on the receiving end of the exhaust. I know they’re all compliant and have the latest scrubber equipment [...] but I think there is a social cost to coal with the storage, handling, and the burning of it.”**

One participant stated that the location of the plant reduced any potential negative effects. **“There are no drawbacks. It’s on the river. You’ve got to go looking for it.”** Another participant who mentioned that he spent a lot of time on the river saw no issue with the plant’s appearance or noise, **“It’s a fixture there, it doesn’t [start up] that often but when they do you notice it.”**

### **Future**

Alliant Energy has announced that the Burlington Generating Station will be converted to natural gas in 2021.<sup>2</sup> Those who spoke with us were generally aware of the scheduled conversion, **“I have not been told specifically, but word on the street is that it is slated for conversion. The word on the street is that that is going to cost jobs because it is less labor intense.”** Those we spoke with were not involved in any way with the transition of workers who may lose their jobs to new positions. **“For retraining and relocating staff, I think that a lot of that has been handled internally.”**

At least one participant saw advantages to conversion, **“If they actually do transition this to gas I think that would be positive in terms of burning a less toxic substance.”** At the same time there were worries about natural gas supply constraints in the area. The transmission line to Southeast Iowa is currently near capacity and that has created some issues. **“Some projects in Southeast Iowa have not been able to move forward because of limits on the availability of natural gas. We’re missing out on projects or potential expansion because of the natural gas situation.”**

When considering the possibility of closure one elected official noted, **“I would hate to see it go. It generates a lot of power and a lot of the noises I hear about the things that are better to replace are a little airy.”** Another participant worried about the effects on the local rail industry, **“I know that a key attribute in southeast Iowa is the presence of rail. It could be a big hit to BNSF [Railway] and all the jobs that they provide.”**

Generally, participants were hopeful that the plant would remain in some form. **“I hope that they retain a presence here. On the overall balance it is a positive thing for southeast Iowa. I hope that they use it as a gas peak plant.”** However there have been some conversations about the value of the site even without the power plant. **“There have been some discussions for what the site could become if the plant closes altogether. It’s a pretty unique site with barge access and rail access.”**

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<sup>2</sup> See news release: “Sun shines bright in Alliant Energy’s Iowa Clean Energy Blueprint.” (October 29, 2020) <https://www.alliantenergy.com/AlliantEnergyNews/NewsReleases/NewsRelease102920>

# Linn County (Prairie Creek Generating Station)

## Plant Characteristics

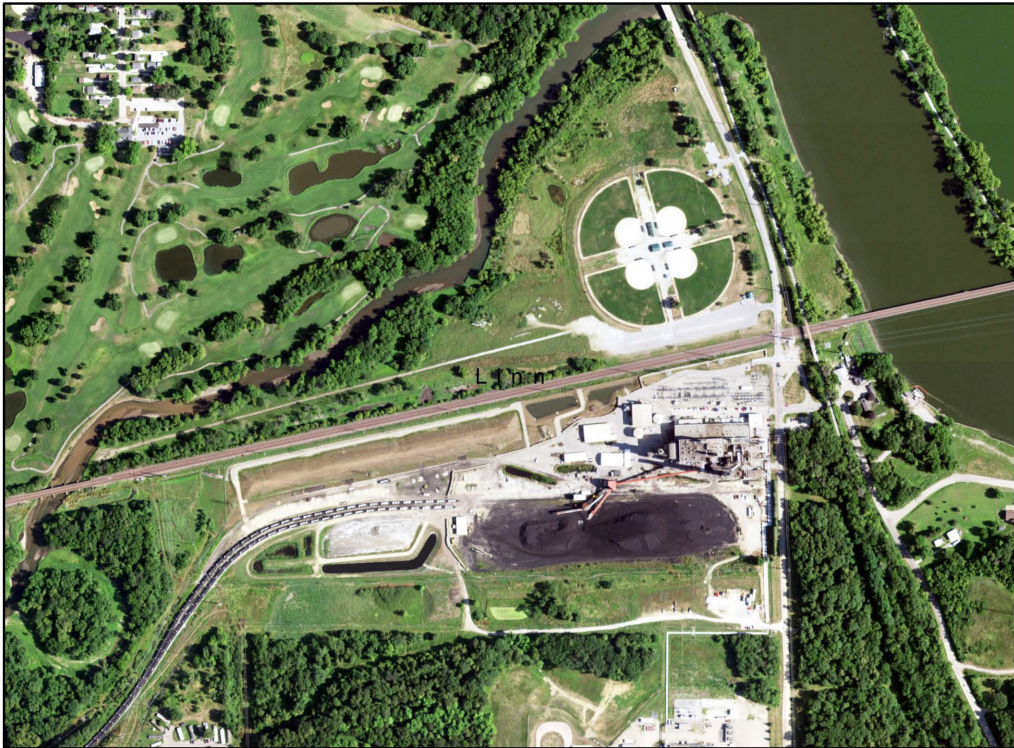
**Owner:** Interstate Power and Light (Alliant Energy) 100%

**Plant Nameplate Capacity:** 213.4 MW (megawatts)

**Number of Employees (2020):** 51

The Prairie Creek Generating Station is located along the Cedar River in the City of Cedar Rapids in Linn County. Figure 5.1 displays an aerial view of the station. This image was taken July 31, 2019, as part of the National Agriculture Imagery Program (NAIP) through the United States Department of Agriculture Farm Agency.

**Figure 5.1: Aerial Photograph of the Prairie Creek Generating Station**



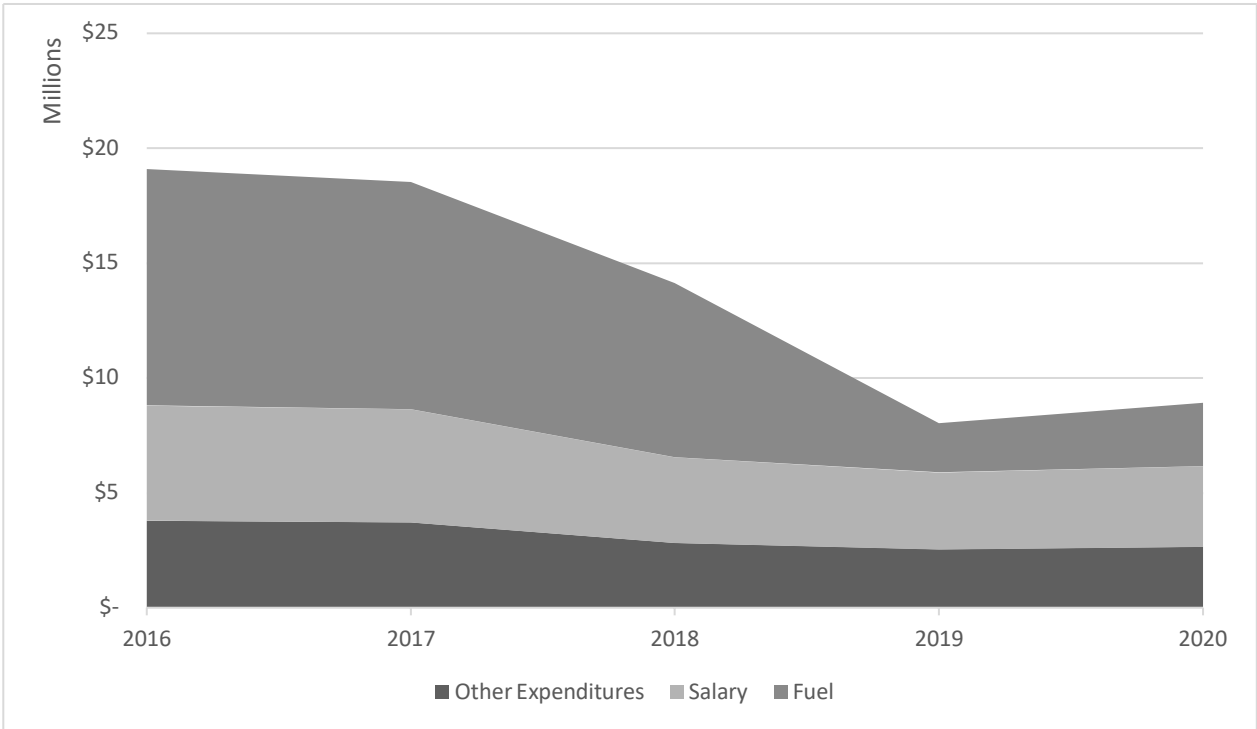
### Plant Expenditures and Employment

The Prairie Creek Generating Station was the most difficult plant to analyze economically. In addition to electricity, the plant generates steam for industrial use. Only a percentage of the plant’s expenses are reported on the FERC form 1. The expenses for industrial steam production are not reported. Although **51** employees were reported at the plant in 2020 it is likely that their salary expenses are split between the electric utility and steam production sides of the operation in reporting. We estimate the percentage of salary expenses attributable to the utility to be equal to 57% of non-fuel expenses – the average across all other plants included in this study. From 2016 to 2020 there was a **17.8%** decrease in reported staffing (from 62 to 51) and a **53.2%** reduction in reported expenditures on electricity production. See Table 5.1: Basic Operating Expenses and Graph 5.1: Total Power Plant Expenditures for details.

**Table 5.1: Basic Operating Expenses**

	2016	2017	2018	2019	2020
<b>Employees</b>	62	61	58	54	51
<b>Fuel Expenses</b>	\$10,294,842	\$9,881,989	\$7,575,422	\$2,122,791	\$2,767,249
<b>Total Expenses</b>	\$19,088,208	\$18,522,208.	\$14,119,123	\$8,012,888	\$8,924,679

**Graph 5.1: Total Power Plant Expenditures**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the Prairie Creek Generating Station was responsible for **\$16,090,925** in local economic activity in 2020, as presented in Table 5.2: Local Impact on Industry Output in 2020 (2021 Dollars). This figure does not include the value of electric sales from the plant. These dollar figures are reported in this analysis to reflect the values adjusted for 2021 inflation. Indirect impacts of the plant include all local sales to the power plant itself and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” in Table 5.2 shows the relative importance of the power plant to that local sector. For example, the Prairie Creek Generating Station supports **0.09%** of all activity in the Transportation and Warehousing Sector in Linn County.

Based on calculations using the reported total output figures in Table 5.2, a significant portion of the local impacts of the plant, **38%**, are in the Utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Real Estate and Rental, and Finance and Insurance.

Overall, IMPLAN calculates that the electrical generation function of the Prairie Creek Generating Station supports **0.05%** of economic activity in Linn County. That is in addition to any sales of the power plant itself. This is the smallest percentage of any county included in this study.

**Table 5.2: Local Impact on Industry Output in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$418	\$2,164	\$2,582	0.00%
Mining	\$278,202	\$1,044	\$279,246	0.38%
Utilities	\$6,068,613	\$49,488	\$6,118,102	0.33%
Construction	\$48,944	\$34,581	\$83,526	0.01%
Manufacturing	\$57,614	\$29,941	\$87,555	0.00%
Wholesale Trade	\$391,324	\$178,112	\$569,437	0.03%
Retail Trade	\$107,608	\$399,916	\$507,524	0.04%
Transportation and Warehousing	\$1,176,212	\$90,840	\$1,267,052	0.09%
Information	\$398,921	\$211,183	\$610,104	0.03%
Finance and Insurance	\$545,951	\$517,989	\$1,063,941	0.03%
Real Estate and Rental	\$448,632	\$763,899	\$1,212,531	0.04%
Prof, Scientific, and Tech Services	\$822,732	\$134,598	\$957,330	0.06%
Management of Companies	\$36,960	\$17,440	\$54,400	0.02%
Administrative and Waste Services	\$814,764	\$109,210	\$923,974	0.12%
Educational Services	\$7,489	\$64,655	\$72,144	0.04%
Health and Social Services	\$47	\$669,768	\$669,814	0.03%
Arts, Entertainment, and Recreation	\$20,598	\$64,998	\$85,597	0.04%
Accommodation and Food Services	\$156,646	\$211,293	\$367,939	0.05%
Other Services	\$61,746	\$217,062	\$278,807	0.04%
Government & non-NAICs	\$852,912	\$26,410	\$879,322	0.07%
<b>Total</b>	<b>\$12,296,334</b>	<b>\$3,794,591</b>	<b>\$16,090,925</b>	<b>0.05%</b>

## Employment Impacts

According to the IMPLAN model, the Prairie Creek Generating Station supports the equivalent of **114.54** jobs in Linn County, as shown in Table 5.3: Local Employment Impacts in 2020. The direct employment numbers represent the **51** individuals reported as employed by Alliant Energy on the FERC Form 1. For the indirect and induced jobs, the totals indicate the sum of all jobs across the sectors in that industry. A majority of jobs supported by the plant (**55%**) are in the Utility sector. This includes those directly employed by the plant as well as those indirectly supported – mostly in transmission and distribution.

For more information on how these numbers are calculated, see pg. 5.

**Table 5.3: Local Employment Impacts in 2020**

Industry	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.01	0.02	0.03
Mining	0.00	0.73	0.00	0.73
Utilities	51.00	6.26	0.05	57.31
Construction	0.00	0.23	0.17	0.40
Manufacturing	0.00	0.12	0.07	0.20
Wholesale Trade	0.00	0.85	0.50	1.36
Retail Trade	0.00	1.10	4.86	5.96
Transportation and Warehousing	0.00	4.94	0.82	5.76
Information	0.00	0.86	0.48	1.34
Finance and Insurance	0.00	1.86	1.75	3.61
Real Estate and Rental	0.00	1.85	1.10	2.95
Prof, Scientific, and Tech Services	0.00	4.30	0.81	5.11
Management of Companies	0.00	0.19	0.09	0.28
Administrative and Waste Services	0.00	9.28	1.27	10.55
Educational Services	0.00	0.12	1.16	1.28
Health and Social Services	0.00	0.00	5.71	5.71
Arts, Entertainment, and Recreation	0.00	0.34	1.03	1.37
Accommodation and Food Services	0.00	2.49	3.16	5.66
Other Services	0.00	0.57	2.43	3.00
Government & non-NAICs	0.00	1.79	0.15	1.93
<b>Total</b>	<b>51.00</b>	<b>37.89</b>	<b>25.65</b>	<b>114.54</b>

## Employee Compensation

The Prairie Creek Generating Station supports **\$7,294,860** in local employee compensation, as is shown in Table 5.4: Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **51** Prairie Creek Generating Station jobs represent more than half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$4,586,297**, or nearly **63%** of total employee compensation supported by the plant comes from the Utility industry.

Because of the reporting issues with Prairie Creek due to industrial steam production, we are assuming that only a portion of employee compensation is attributable to the production of electricity. We estimate that, including steam production, total compensation for plant employees is likely greater than **\$6,000,000**.

**Table 5.4: Local Employee Compensation in 2020 (2021 Dollars)**

Industry	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$76	\$325	\$400
Mining	\$0	\$1,554	\$170	\$1,724
Utilities	\$3,583,219	\$994,963	\$8,115	\$4,586,297
Construction	\$0	\$12,364	\$8,826	\$21,190
Manufacturing	\$0	\$9,636	\$5,003	\$14,639
Wholesale Trade	\$0	\$74,616	\$43,716	\$118,332
Retail Trade	\$0	\$29,080	\$134,499	\$163,579
Transportation and Warehousing	\$0	\$322,718	\$33,853	\$356,571
Information	\$0	\$78,355	\$38,846	\$117,202
Finance and Insurance	\$0	\$134,413	\$111,167	\$245,580
Real Estate and Rental	\$0	\$45,977	\$24,828	\$70,805
Prof, Scientific, and Tech Services	\$0	\$311,517	\$52,374	\$363,891
Management of Companies	\$0	\$17,122	\$8,079	\$25,201
Administrative and Waste Services	\$0	\$356,243	\$49,007	\$405,250
Educational Services	\$0	\$3,356	\$33,449	\$36,805
Health and Social Services	\$0	\$21	\$349,490	\$349,512
Arts, Entertainment, and Recreation	\$0	\$3,542	\$15,506	\$19,048
Accommodation and Food Services	\$0	\$51,535	\$63,932	\$115,467
Other Services	\$0	\$26,304	\$82,679	\$108,983
Government & non-NAICs	\$0	\$161,505	\$12,881	\$174,386
<b>Total</b>	<b>\$3,583,219</b>	<b>\$2,634,897</b>	<b>\$1,076,744</b>	<b>\$7,294,860</b>



**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 5.5: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property taxes to local governments in the future.

School funding is even more complex. Although **0.65%** of the 2020-2021 revenues to the College Community School District came from Utility Replacement Tax, even a total loss of this revenue would not result in a large decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue.

The relative value of the Prairie Creek Generating Station to the various taxing authorities is lower in Linn County when compared to the more rural counties included in this study. In addition to the figures shown in Table 5.5, **\$45,739** was paid to Kirkwood Community College and **\$11,929.44** to the Linn County Extension Office.

**Table 5.5 – Value of FYE 2021 Utility Replacement Tax**

	Linn County	College Community School District	City of Cedar Rapids	Other*	Total
Replacement Funds	\$232,987	\$604,155	\$569,559	\$57,669	\$1,464,370
Percent of FYE 21 Revenues	0.16%	0.65%	0.08%	N/A	

\* Other may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

## Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

Linn County had the lowest response rate of any county included in the study. This is likely because the power plant is less prominent in the community than some located in more rural counties. 88 Linn residents returned the survey for a response rate of **8.8%**.

County	Responses	Response Rate
Linn County (Prairie Creek Power plant)	88	8.8%
Overall	879	12.6%

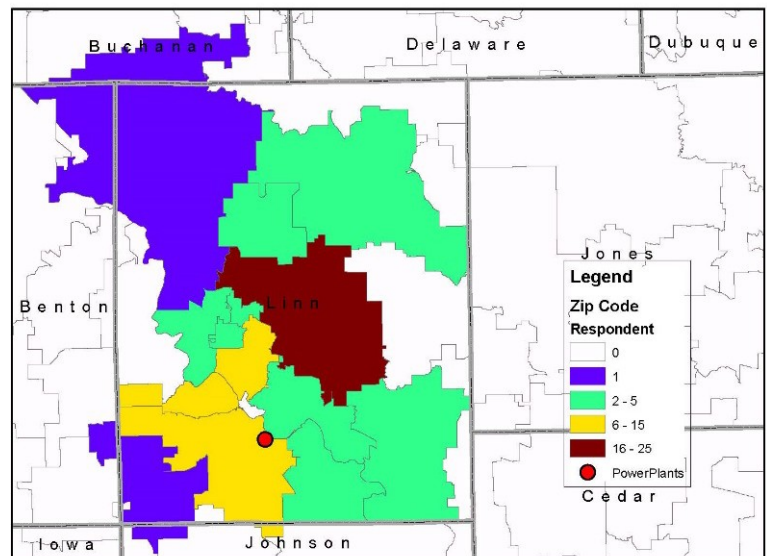
### The Respondents

Out of 88 Linn County respondents, all 88 reported the zip codes where they live. Eighteen zip codes were represented of which one-quarter (**27%**) came from zip code 52302, 16% from 52402, and the rest were distributed from other zip codes. Table 5.7: Linn County Zip Codes shows the percentage of respondents by zip code and Figure 5.2: Respondents by Zip Code shows the location of respondents by zip code. There were a few respondents who could potentially reside in nearby Buchanan, Benton, and Johnson counties. For this report, all respondents will be referred as “Linn County respondents.”

**Table 5.7: Linn County Zip Codes**

Zip code	Number	Percent
52302	23	26.7%
52402	14	16.3%
52405	13	15.1%
52404	8	9.3%
52403	4	4.7%
52411	4	4.7%
52227	3	3.5%
52233	3	3.5%
52328	3	3.5%
52202	2	2.3%
52214	2	2.3%
52314	2	2.3%
52213	1	1.2%
52228	1	1.2%
52341	1	1.2%
52352	1	1.2%
52553	1	1.2%
Total	86	100.0%

**Figure 5.2: Respondents by Zip Code**



Almost half of the Linn County respondents reported being 65 or older, this is older than the general population, but is quite similar to our statewide average for this survey. All the age levels were represented, except for 18-24 years of age. Average household size was reported as 2.0 individuals per household, slightly lower than the statewide average of 2.3. See Table 5.8: Linn County Reported Ages for details.

**Table 5.8: Linn County Reported Ages**

Age	Number	Percent
25-34	5	5.8%
35-44	12	14.0%
45-54	11	12.8%
55-64	17	19.8%
65+	41	47.7%
Total	86	100.0%

All of the income brackets were represented with the highest percentage at the \$50,000 to \$74,999 income level and lowest percentage at the two extreme ends of the spectrum (under \$15,000 and \$200,000 or more). See Table 5.9: Linn County Reported Household Income.

**Table 5.9: Linn County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	2	2.4%
\$15,000 to \$24,999	7	8.4%
\$25,000 to \$34,999	8	9.6%
\$35,000 to \$49,999	5	6.0%
\$50,000 to \$74,999	19	22.9%
\$75,000 to \$99,999	15	18.1%
\$100,000 to \$149,999	16	19.3%
\$150,000 to \$199,999	8	9.6%
\$200,000 or more	3	3.6%
Total	83	100.0%

## Community Characteristics

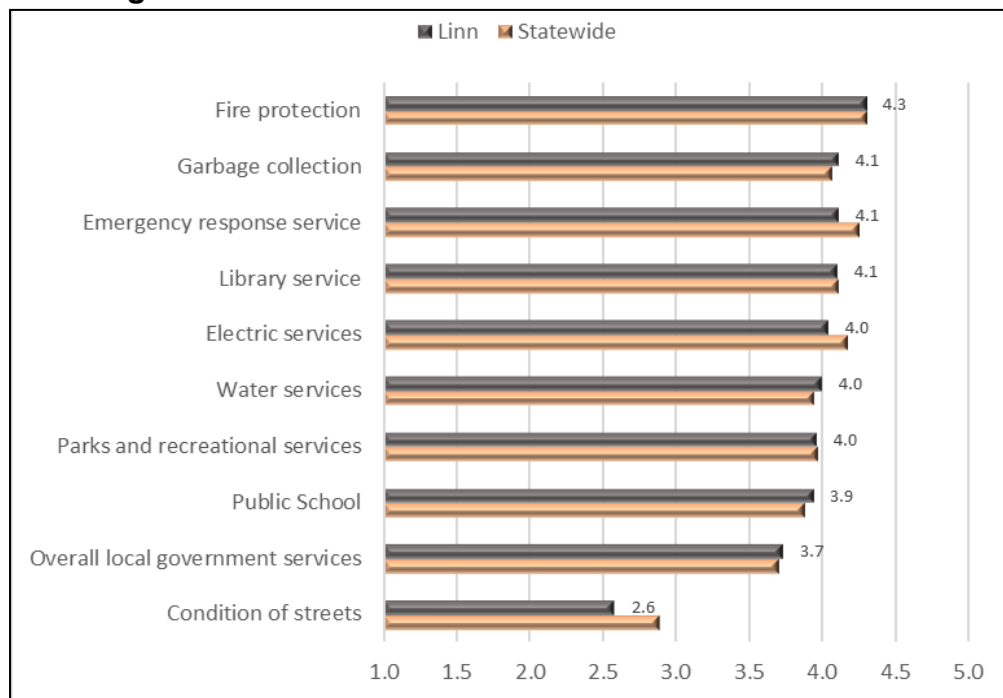
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including Center Point in Rural Linn County.<sup>1</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor and 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective and 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Linn County respondents perceived all local public services as good/very good except for "condition of streets". All the values are higher or similar to the statewide averages. Graph 5.2: Ratings of Local Public Services displays the details.

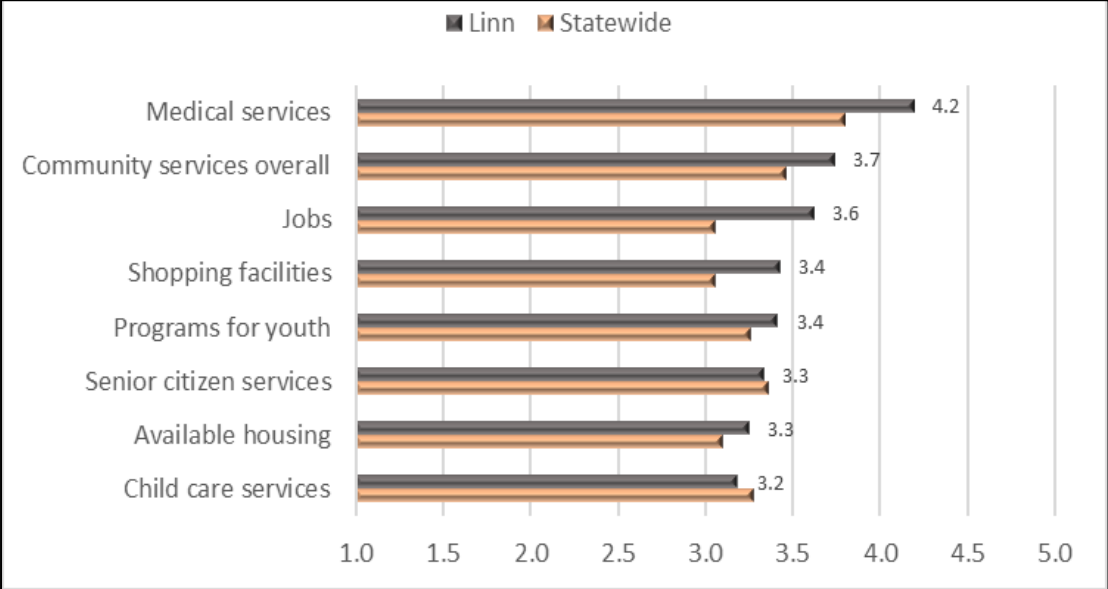
**Graph 5.2: Ratings of Local Public Services**



<sup>1</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Survey project.

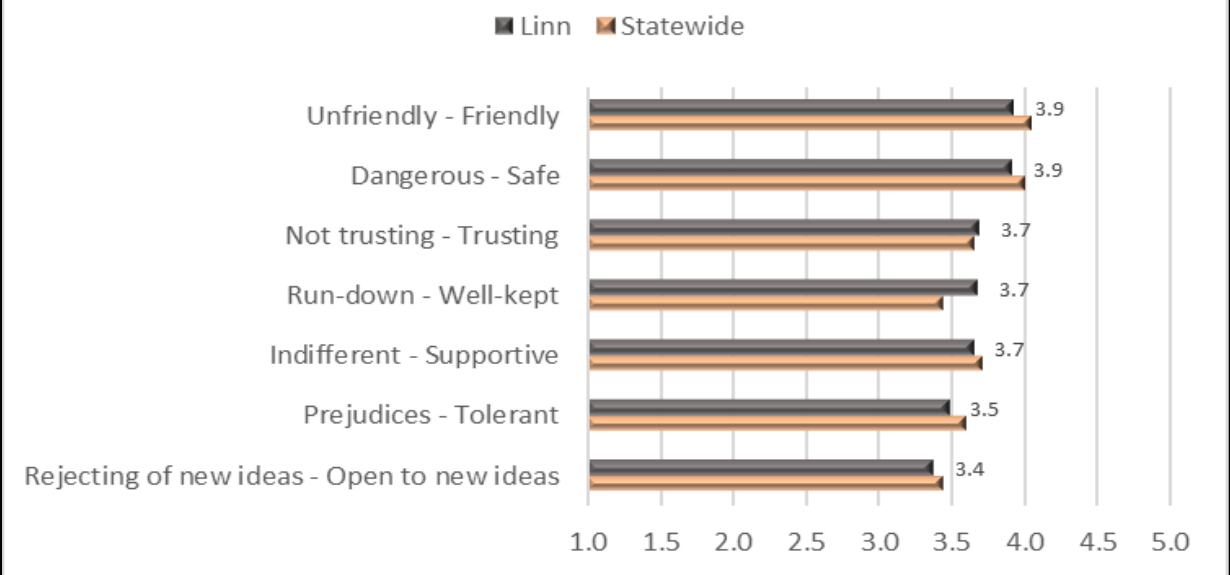
Non-governmental services were on the whole rated higher than the statewide averages. Graph 5.3: Ratings of Local Non-Governmental Services shows that respondents rated “medical services” and “jobs” highest. “Available housing” and “childcare services” received the lowest scores.

**Graph 5.3: Ratings of Local Non-Governmental Services**



Graph 5.4 shows that Linn County respondents were overall slightly less positive in the adjectives they chose to describe their community when compared with statewide averages. The highest value was 3.9 (for friendly and safe) and the lowest value was 3.4 (open to new ideas).

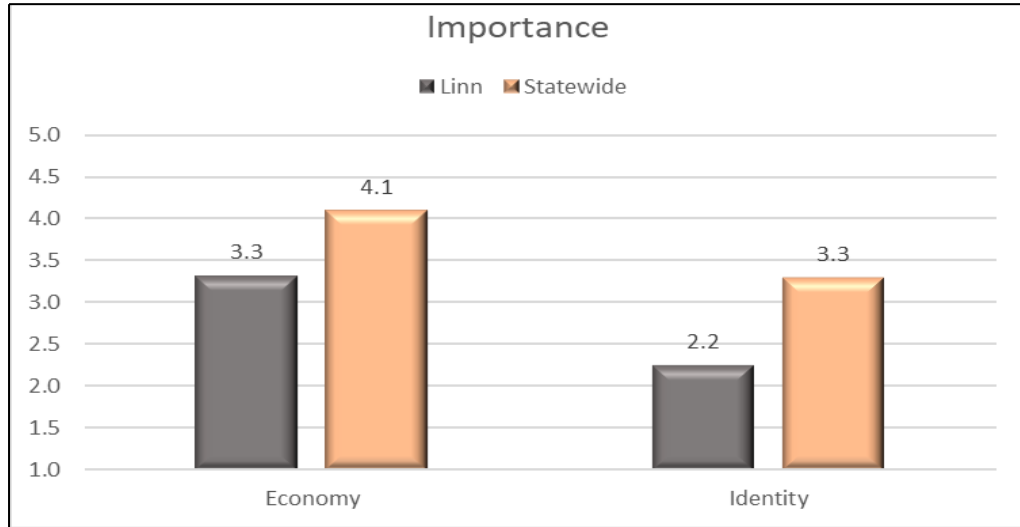
**Graph 5.4: Adjectives Describing the Community**



### Perceived Local Impacts of Prairie Creek Generating Station

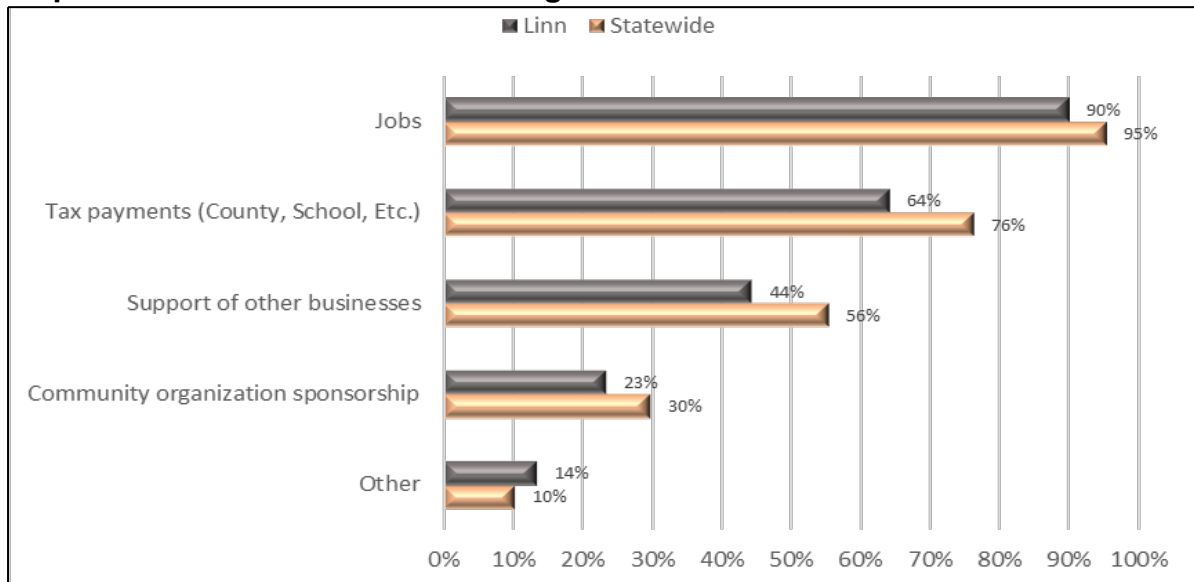
On a scale of 1 – 5 (1 being not at all important to 5 as extremely important), respondents in Linn County saw the Prairie Creek power plant as being less important to their area’s economy and identity relative to state averages. See Graph 5.5: Local Importance of the Generating Station for details.

**Graph 5.5: Local Importance of the Generating Station**



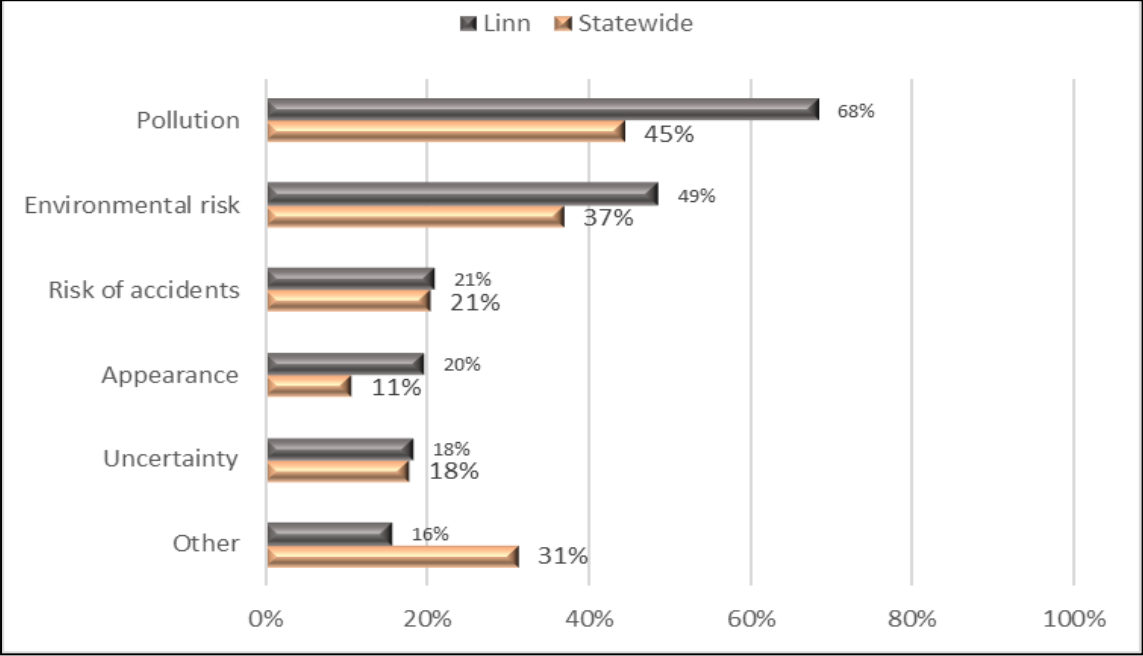
Compared to the statewide data, Linn County respondents were less likely to cite benefits provided by the power plant. Still a majority saw jobs and tax payments as important benefits to their community. See Graph 5.6: Benefits of the Generating Station for details.

**Graph 5.6: Benefits of the Generating Station**



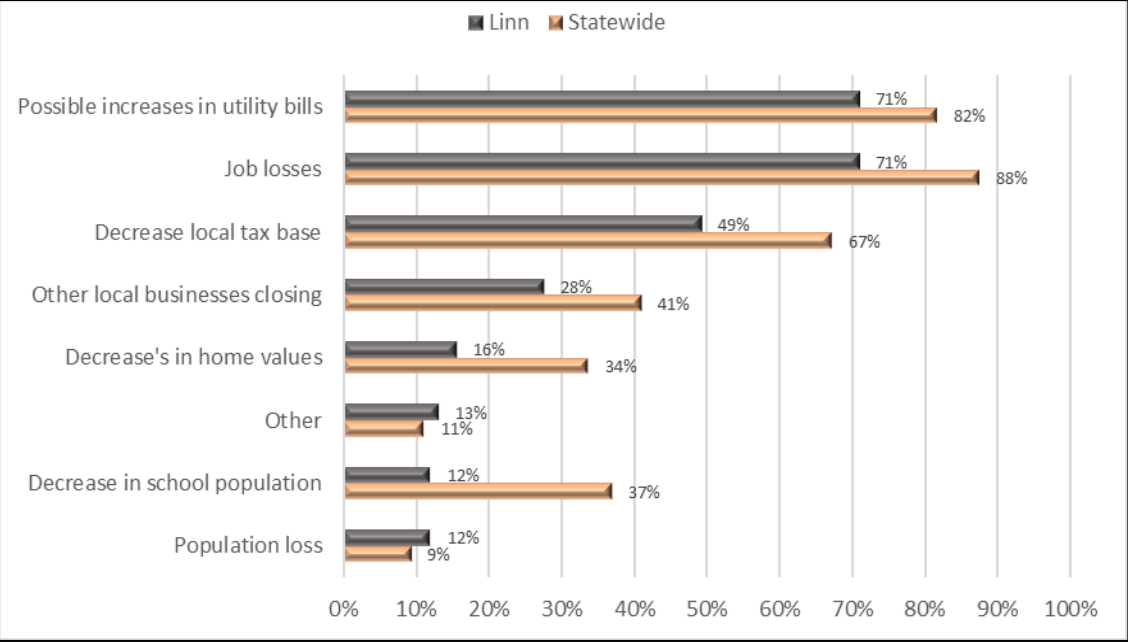
Respondents in Linn County were more likely to perceive negative effects of the presence of the Prairie Creek power plant compared to the statewide averages. Graph 5.7: Negative Effects of the Generating Station shows that respondents were most likely to cite “pollution” or “environmental risk” as negative effects.

**Graph 5.7: Negative Effects of the Generating Station**



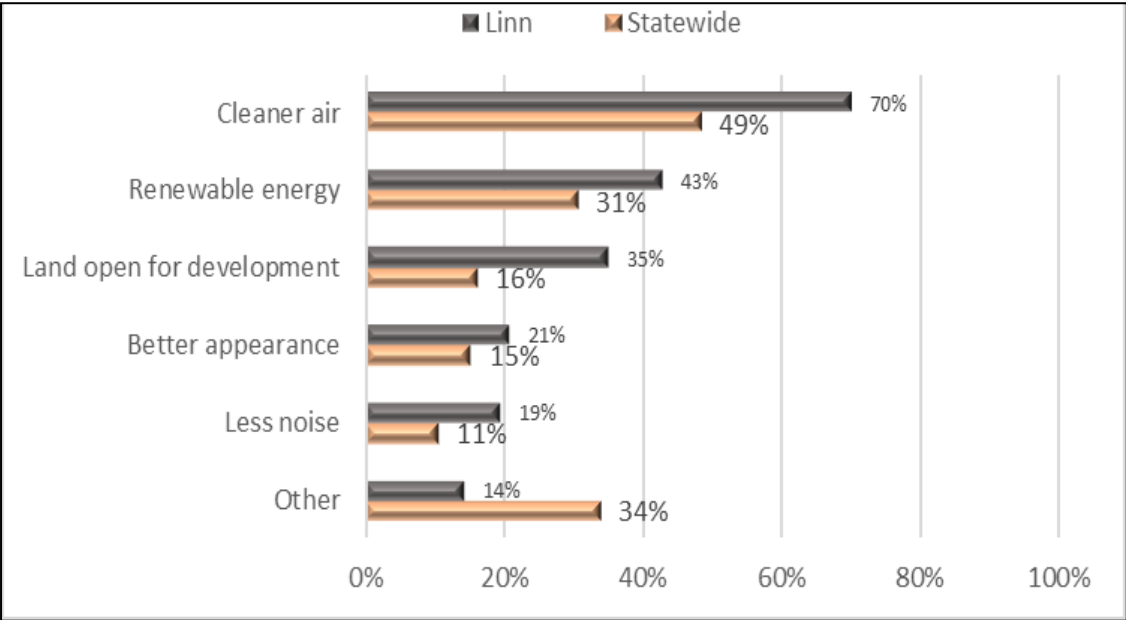
Graph 5.8: Concerns about closure shows Linn County respondents were generally less concerned about what would happen if the Prairie Creek plant were to close compared to the statewide averages.

**Graph 5.8: Concerns about Closure**



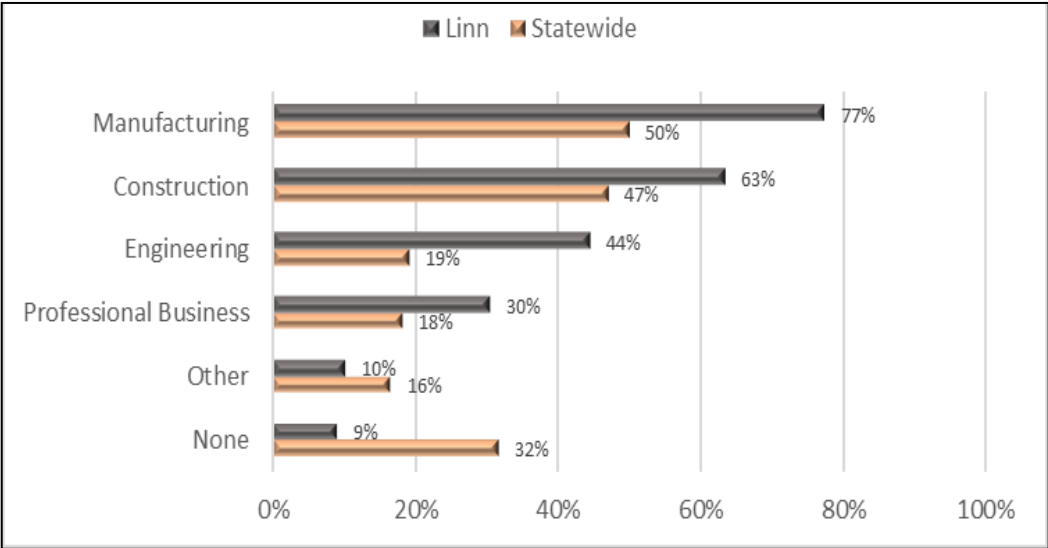
If the Prairie Creek Generating Station were to close, respondents cited “cleaner air” and “renewable energy” as potential positive effects. Overall residents of Linn County were more likely to see positive effects of closure relative to statewide averages per Graph 5.9: Positive Effects of Closure.

**Graph 5.9: Positive Effects of Closure**



Residents of Linn County were overall more likely to believe that there would be local jobs available to Prairie Creek Generating Station workers. Only 9% of Linn County respondents believed that there would be no local jobs available for the employees of the Prairie Creek Generating Station if they were to lose their job. Graph 5.10: Other Jobs Available for Power Plant Workers provides details.

**Graph 5.10: Other Jobs Available for Power Plant Workers**





## Focus Groups and Key Informant Interviews

We spoke individually with five key informants in Linn County. The interview participants included an economic development staff person, local government staff, and an elected official. Following our interview script (see **Appendix 2**) we asked interviewees their views on 1) Benefits of the Prairie Creek Generating Station for the local area; 2) Drawbacks or any negative effects the plant might have; and 3) Thoughts about the future of the plant.

### Benefits

Unlike some of the other more prominent plants included in this study, even some key informants were less certain about the plant's precise location. **"I know that it exists... isn't it downtown?"**

Those we spoke with in Linn County focused on the reliability of electric power for industry as the major benefit of the Prairie Creek Generating Station, **"Coal power plants have always been a reliable source of base load energy. In Cedar Rapids you have a lot of heavy industry that is reliant on that base load."** One former economic developer shared, **"These companies would not continue to operate or locate in Cedar Rapids without generally low-cost reliable power."**

In addition to electricity, Prairie Creek generates steam for industrial use. **"With Prairie Creek there is also a steam generating facility that serves International Paper and other companies in the area."**

Jobs were also cited as a benefit to the local economy, **"It does support jobs. And many of those jobs are well above the average pay for Cedar Rapids."**

Several of the individuals we spoke with mentioned other businesses that serve the plant. **"It's right by the Union Pacific lines. [...] Union Pacific does employ a number of people, so there is an indirect benefit. And there are all the different contractors that service and maintain the plant."**

Utility Replacement Tax payments are generally lower in Linn County relative to total budgets, but when we shared the values with participants they agreed that they were significant **"That funding is a whole lot of programming that can go back to meet community needs."**

Charitable giving was also a very important benefit mentioned. **"They do give a lot back to their community. They've given \$100,000s to HACAP [the Hawkeye Area Community Action Program]."**

## **Drawbacks**

When asked about negatives, pollution was the primary concern, **“The perception is that it is dirty and has negative effects on the land.”** Another wondered how sustainable coal as a fuel source would be over the long-term. **“It’s not renewable. I know there is a lot of coal, but it can be controversial”**

Otherwise, the plant’s location in an industrial area was considered appropriate.

## **Future**

Of the individuals we spoke with, two were aware that the plant has partially been converted to be fueled by natural gas, **“Plans are as that plant ages to convert from coal to natural gas. “**

Overall participants were confident that the plant would be around for the foreseeable future **“There are good reasons to keep the plant there. I’d imagine they would want to keep it there for another 30, 40, 50 years. It’s not at the end of its life. If they want to convert it to gas, so be it.”**

One participant wondered how changes in energy production in the county might affect the plant. **“The big buzz right now in Linn County is Solar, so I think the future is moving towards more renewable energy sources, so I don’t know how long coal will be sustainable.”**

There was an interest in conversion to renewable energy: **“I can’t speak to the emissions, but no matter how much you scrub it coal is a dirty fuel. I think people’s attitudes towards coal are pretty clear. If there is a better and cheaper alternative, let’s do that.”** The consensus however was that to maintain reliable electricity, the Prairie Creek Generating Station is important. **“If it were to go away they would have to build a new plant somewhere in the county.”** Reliability was the principal concern. **“The wind doesn’t blow every day the sun doesn’t shine every day, but natural gas you can depend on.”**

Another concern was that any changes might affect local rates, **“Some people are barely able to afford their bills as it is, and they’re looking for an increase.”**

## Louisa and Muscatine Counties (Louisa Generating Station)

### Plant Characteristics

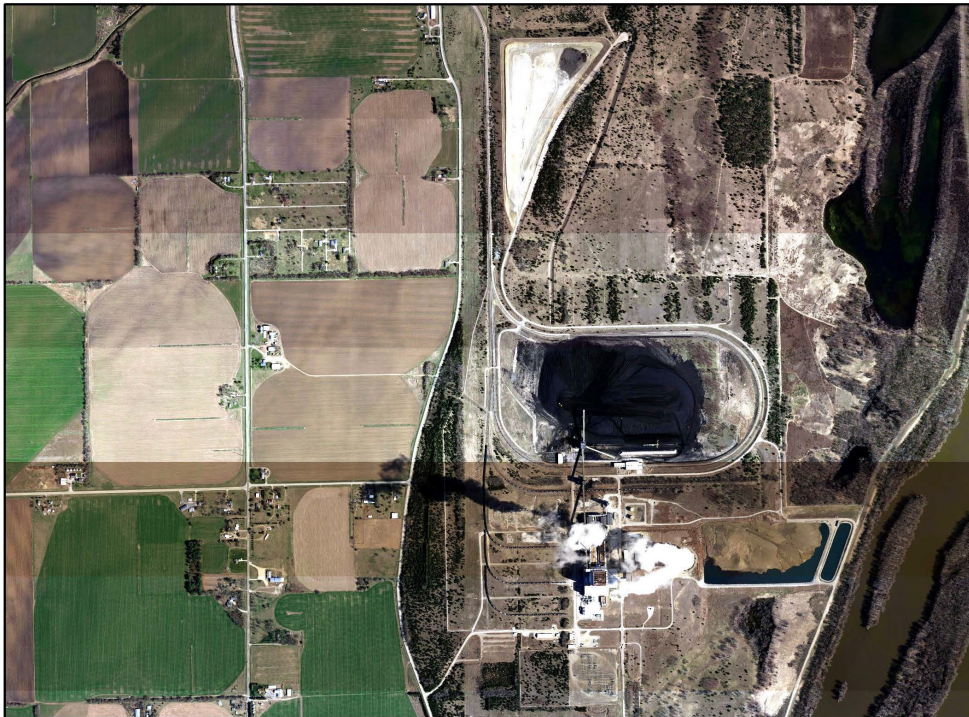
**Owners:** MidAmerican Energy 88%, Central Iowa Power Cooperative 4.6%, Interstate Power and Light (Alliant) 4%, City of Waverly, Iowa 1.1%, City of Harlan, Iowa 0.8%, City of Tipton, Iowa 0.5%, City of Eldridge, Iowa 0.5%, City of Geneseo, Illinois 0.5%

**Plant Nameplate Capacity:** 811.9 MW (megawatts)

**Number of Employees (2020):** 95

The Louisa Generating Station is located along the Mississippi River in rural Louisa County just south of Muscatine County. The plant is approximately nine miles south of the City of Muscatine and three miles southeast of the City of Fruitland. Figure 6.1 displays an aerial view of the station. This image was taken April 12, 2016 as part of a statewide imagery project funded by State of Iowa.

**Figure 6.1: Aerial Photograph of the Louisa Generating Station**



## Plant Expenditures and Employment

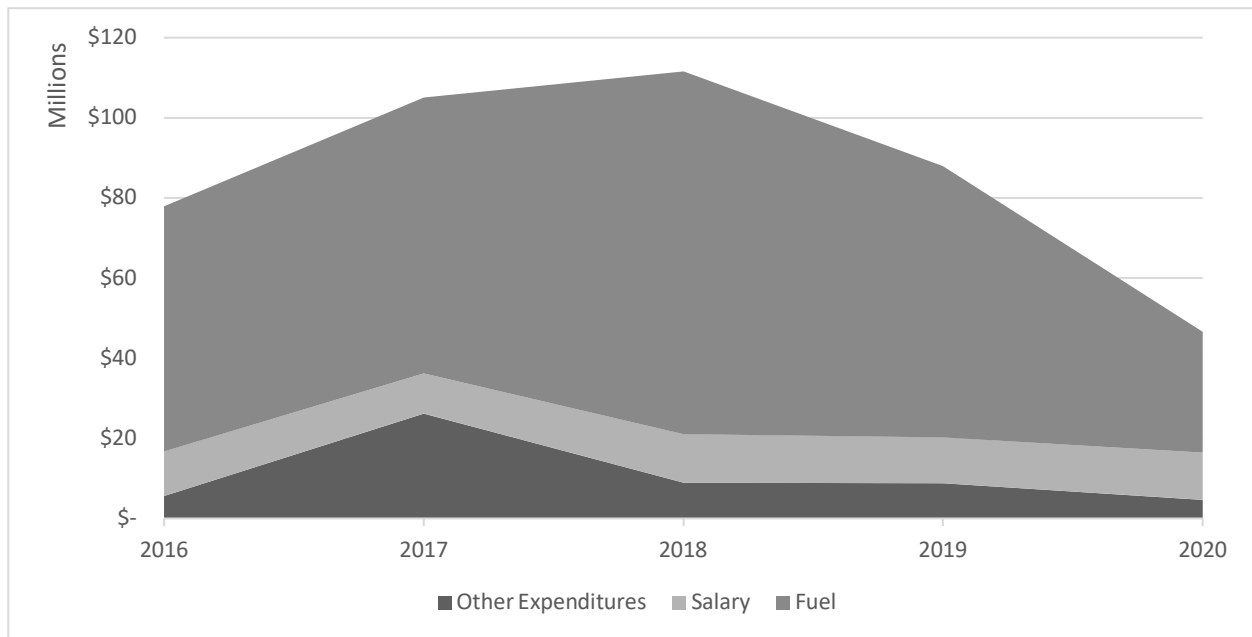
The Louisa Generating Station is the only power plant in this report that we have analyzed in a two-county region. This is due to the plant's location on the border of Louisa and Muscatine Counties. Muscatine is the closest population center to the plant and more local impacts would occur in Muscatine County than in Louisa itself. The Louisa plant is the only one to have seen an increase in total number of employees over the study period. From 2016 to 2020 there was a **5.6%** increase in staffing (from 90 to 95) and a **40%** reduction in total expenditures.

**Table 6.1: Basic Operating Expenses**

	2016	2017	2018	2019	2020
<b>Employees</b>	90	80	97	91	95
<b>Fuel Expenses</b>	\$61,183,224	\$68,856,399	\$90,552,482	\$67,798,877	\$30,200,701
<b>Total Expenses</b>	\$77,953,270	\$105,040,053	\$111,561,505	\$88,035,867	\$46,643,491

The dollar figures in Table 6.1, above, reflect the numbers reported in Alliant Energy's "Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report" from 2016 to 2020.

**Graph 6.1: Total Power Plant Expenditures**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the Louisa Generating Station was responsible for **\$41,291,236** in local economic activity in 2020, as presented in Table 6.2: Local Impact on Industry Spending in 2020 (2021 Dollars). Electricity sales from the plant itself are not included in that figure. These dollar figures are reported in this analysis to reflect the values adjusted for 2021 inflation. Indirect impacts of the plant include all local sales to the power plant and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” shows the relative importance of the power plant to that Sector. For example, the Louisa Generating Station supports **2.01%** of all activity in the Transportation and Warehousing Sector in Louisa and Muscatine Counties.

Based on calculations using the reported total output figures in Table 6.2, a significant portion of the local impacts of the plant, **38%**, are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Finance and Insurance, and Mining.

The inclusion of the Mining sector is due to how proprietors are accounted for in the IMPLAN system. All proprietor data are place-of-residence-based. That is, a well or mine owner who lives in Iowa but whose activities take place in another state will show up in the IMPLAN data as a local proprietor with local sales. Therefore, it is possible to have income from mining, or oil and gas extraction in a county where these activities are not physically taking place. Even if the activities are not local, the income is received by residents Louisa and Muscatine Counties and counts as a local economic impact.

Overall, IMPLAN calculates that the Louisa power plant supports **0.48%** of economic activity in Louisa and Muscatine Counties in addition to the revenues of the plant itself.

**Table 6.2: Local Impact on Industry Spending in 2020 (2021 Dollars)**

Industry	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$2,828	\$22,329	\$25,158	0.01%
Mining	\$4,765,208	\$6,796	\$4,772,004	14.53%
Utilities	\$15,475,624	\$119,075	\$15,594,699	5.52%
Construction	\$104,159	\$77,130	\$181,289	0.10%
Manufacturing	\$279,787	\$66,409	\$346,196	0.01%
Wholesale Trade	\$714,238	\$173,190	\$887,428	0.41%
Retail Trade	\$275,970	\$851,587	\$1,127,557	0.63%
Transportation and Warehousing	\$3,976,757	\$159,419	\$4,136,176	2.01%
Information	\$373,563	\$187,902	\$561,465	0.87%
Finance and Insurance	\$1,106,294	\$482,681	\$1,588,975	0.90%
Real Estate and Rental	\$716,045	\$1,786,254	\$2,502,299	0.65%
Prof, Scientific, and Tech Services	\$2,509,494	\$209,756	\$2,719,249	1.19%
Management of Companies	\$768,866	\$118,466	\$887,331	0.44%
Administrative and Waste Services	\$2,850,282	\$158,753	\$3,009,035	1.68%
Educational Services	\$2,283	\$40,018	\$42,301	0.61%
Health and Social Services	\$8	\$1,163,482	\$1,163,490	0.52%
Arts, Entertainment, and Recreation	\$18,499	\$85,787	\$104,286	0.63%
Accommodation and Food Services	\$307,349	\$461,298	\$768,647	0.71%
Other Services	\$175,983	\$585,137	\$761,119	0.51%
Government & non-NAICs	\$73,105	\$39,424	\$112,529	0.10%
<b>Total</b>	<b>\$34,496,343</b>	<b>\$6,794,893</b>	<b>\$41,291,236</b>	<b>0.48%</b>

## Employment Impacts

According to the IMPLAN model, the Louisa Generating Station supports the equivalent of **288.8** jobs in Louisa and Muscatine Counties, as shown in Table 6.3: Local Employment Impacts in 2020. The direct employment numbers represent the **95** individuals reported as employed by MidAmerican and Alliant Energy on the FERC Form 1 with estimates added for the minority owners. For the indirect and induced jobs, the totals indicate the sum of all jobs across the industries in that sector. A significant portion of jobs supported by the plant, **40%**, are in the Utility sector. This includes those directly employed by the plant as well as those indirectly supported – mostly in transmission and distribution.

For more information on how these numbers are calculated, see pg. 5.

**Table 6.3: Local Employment Impacts in 2020**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.02	0.12	0.14
Mining	0.00	11.80	0.02	11.82
Utilities	95.00	20.45	0.18	115.62
Construction	0.00	0.56	0.44	1.00
Manufacturing	0.00	0.38	0.17	0.54
Wholesale Trade	0.00	1.71	0.50	2.21
Retail Trade	0.00	3.05	11.20	14.26
Transportation and Warehousing	0.00	17.66	1.50	19.17
Information	0.00	0.95	0.51	1.46
Finance and Insurance	0.00	4.05	1.95	6.00
Real Estate and Rental	0.00	4.08	2.26	6.34
Prof, Scientific, and Tech Services	0.00	16.07	1.43	17.50
Management of Companies	0.00	3.10	0.48	3.58
Administrative and Waste Services	0.00	33.16	1.83	34.99
Educational Services	0.00	0.02	0.57	0.59
Health and Social Services	0.00	0.00	12.70	12.70
Arts, Entertainment, and Recreation	0.00	0.29	1.29	1.58
Accommodation and Food Services	0.00	5.68	7.46	13.14
Other Services	0.00	1.91	7.78	9.68
Government & non-NAICs	0.00	15.96	0.51	16.47
<b>Total</b>	<b>95.00</b>	<b>140.91</b>	<b>52.88</b>	<b>288.80</b>

## Employee Compensation

The Louisa Generating Station supports **\$23,399,358** in local employee compensation, as is shown in Table 6.4: Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **95** Louisa Generating Station jobs represent more than half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$14,970,877**, or more than **64%** of total employee compensation supported by the plant is paid to employees in the Utility sector.

**Table 6.4: Local Employee Compensation in 2020 (2021 Dollars)**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$229	\$1,514	\$1,743
Mining	\$0	\$8,225	\$440	\$8,665
Utilities	\$12,068,143	\$2,879,962	\$22,771	\$14,970,877
Construction	\$0	\$18,002	\$13,635	\$31,637
Manufacturing	\$0	\$37,714	\$10,551	\$48,264
Wholesale Trade	\$0	\$116,776	\$36,012	\$152,788
Retail Trade	\$0	\$68,121	\$270,864	\$338,986
Transportation and Warehousing	\$0	\$1,227,179	\$63,165	\$1,290,344
Information	\$0	\$43,231	\$18,688	\$61,918
Finance and Insurance	\$0	\$206,774	\$80,420	\$287,194
Real Estate and Rental	\$0	\$44,883	\$26,811	\$71,694
Prof, Scientific, and Tech Services	\$0	\$1,049,749	\$72,642	\$1,122,391
Management of Companies	\$0	\$428,811	\$66,070	\$494,881
Administrative and Waste Services	\$0	\$1,233,877	\$70,153	\$1,304,030
Educational Services	\$0	\$1,183	\$26,762	\$27,945
Health and Social Services	\$0	\$2	\$550,106	\$550,108
Arts, Entertainment, and Recreation	\$0	\$1,496	\$16,993	\$18,489
Accommodation and Food Services	\$0	\$80,416	\$116,002	\$196,418
Other Services	\$0	\$57,297	\$191,675	\$248,972
Government & non-NAICs	\$0	\$2,133,071	\$38,943	\$2,172,013
<b>Total</b>	<b>\$12,068,143</b>	<b>\$9,636,997</b>	<b>\$1,694,218</b>	<b>\$23,399,358</b>



**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 6.5: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property taxes in the future.

Although **2.71%** of the 2020-2021 revenues to the Louisa-Muscatine School District came from Utility Replacement Tax, even a total loss of this revenue would not result in a large decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue.

A significant portion of Port Louisa Township’s full budget is funded by the utility replacement tax generated by the power plant. In addition to the figures shown in Table 6.5, **\$29,137** was paid to the Eastern Iowa Community College and **\$10,607** to the Louisa County Extension Office.

**Table 6.5: Value of FYE 2021 Utility Replacement Tax**

	Louisa County	Louisa-Muscatine School District	Port Louisa Township	Other*	Total
Replacement Funds	\$364,524	\$381,719	\$25,181	\$39,839	\$811,263
Percent of FYE 21 Revenues	2.25%	2.71%	43.55%		

\* Other may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

## Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

Louisa county had the second highest response rate of any county included in the study.

158 Louisa County residents returned the survey for a response rate of **15.8%**.

County	Responses	Response Rate
Louisa and Muscatine Counties	158	15.8%
Overall	879	12.6%

### The Respondents

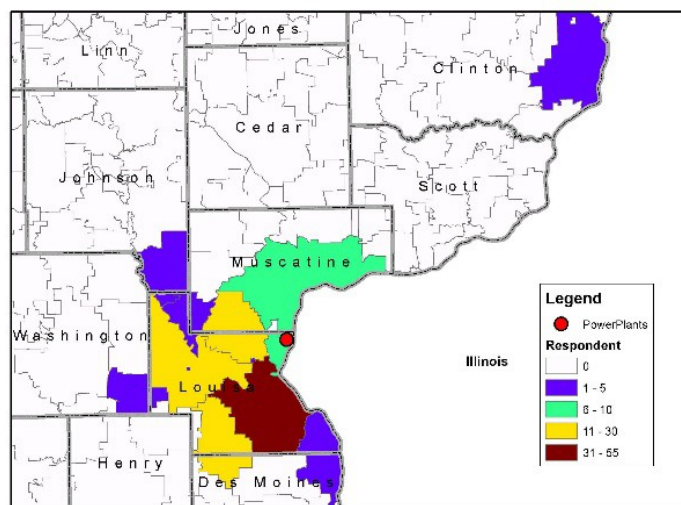
Out of 158 Louisa County respondents, 154 reported the zip codes where they live. Fourteen zip codes were represented of which more than one-third came from zip code 52653. The rest originated from other zip codes. Table 6.7: Louisa County Zip Codes shows the percentage of respondents by zip code and Figure 6.2: Respondents by Zip Code shows the location of respondents.

There were a few respondents who could potentially reside in nearby counties such as Muscatine, Johnson, Clinton, Washington, and Des Moines counties. For this report, all respondents will be referred as “Louisa County respondents.”

**Table 6.7: Louisa County Zip Codes**

Zip code	Number	Percent
52653	55	35.7%
52738	30	19.5%
52640	22	14.3%
52754	21	13.6%
52761	7	4.5%
52739	5	3.2%
52752	4	2.6%
52646	3	1.9%
52737	2	1.3%
52755	2	1.3%
52621	1	0.6%
52693	1	0.6%
52732	1	0.6%
Total	154	100.0%

**Figure 6.2: Respondents by Zip Code**



**More than 50%** of the Louisa County respondents reported being 65 or older. That is higher than the state overall, but on par with our statewide averages in this survey. All age levels were represented. Average household size is similar to statewide averages at 2.3. See Table 6.8: Louisa County Reported Ages for details.

**Table 6.8: Louisa County Reported Ages**

Age	Number	Percent
25-34	4	2.6%
35-44	19	12.2%
45-54	18	11.5%
55-64	36	23.1%
65+	79	50.6%
Total	156	100.0%

Income levels of Louisa County respondents were well distributed from \$35,000 up to \$100,000 income levels, with the highest percentage on the \$50,000 to \$74,999 income level. See Table 6.9: Louisa County Reported Household Income for more details.

**Table 6.9: Louisa County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	3	2.1%
\$15,000 to \$24,999	11	7.6%
\$25,000 to \$34,999	10	6.9%
\$35,000 to \$49,999	19	13.1%
\$50,000 to \$74,999	42	29.0%
\$75,000 to \$99,999	22	15.2%
\$100,000 to \$149,999	26	17.9%
\$150,000 to \$199,999	4	2.8%
\$200,000 or more	8	5.5%
Total	145	100.0%

## Community Characteristics

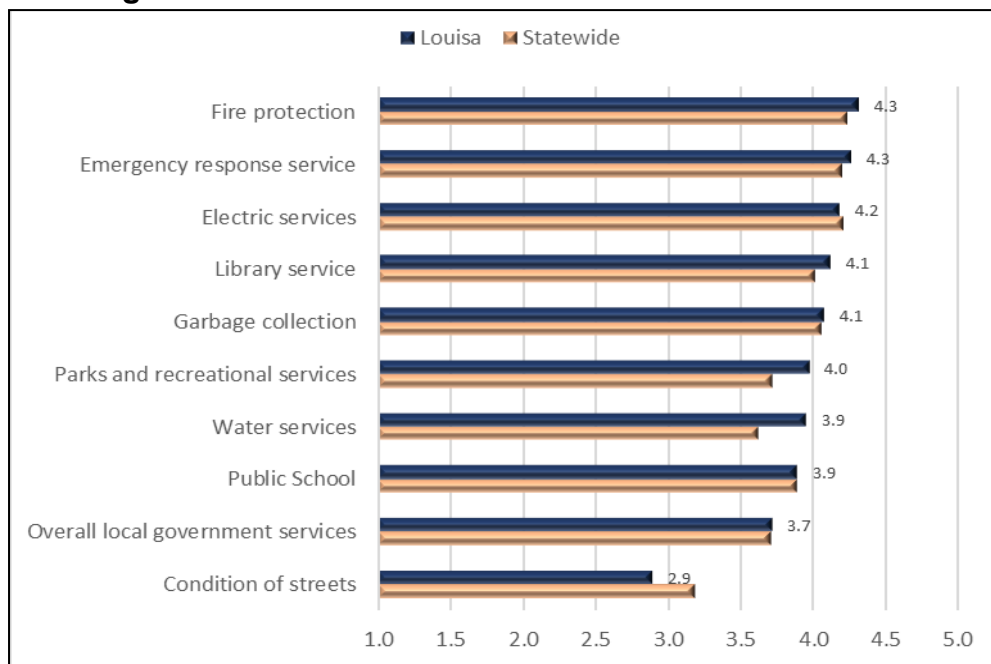
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including the cities of Fruitland and Columbus Junction near the power plant.<sup>1</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor and 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective to 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Louisa County respondents perceived all the local public services as good/very good except for "condition of streets". All the values are higher or equal to statewide averages. Graph 6.2: Ratings of Local Public Services shows the ratings, with "fire protection" and "emergency response service" rated the highest.

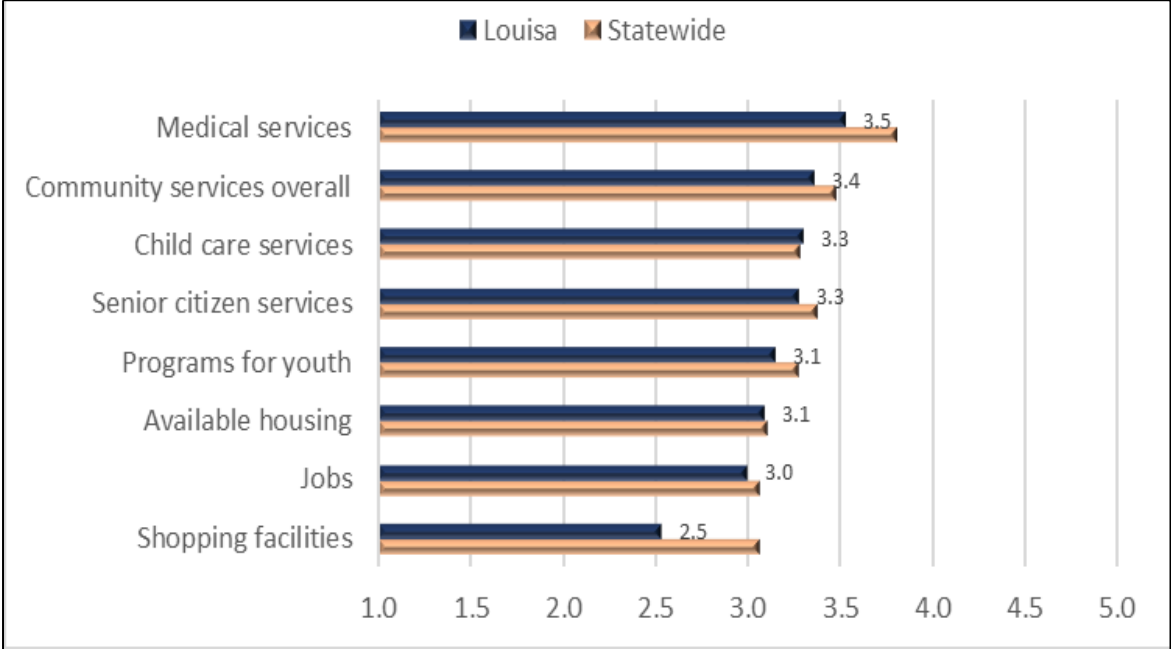
**Graph 6.2: Ratings of Local Public Services**



<sup>1</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.

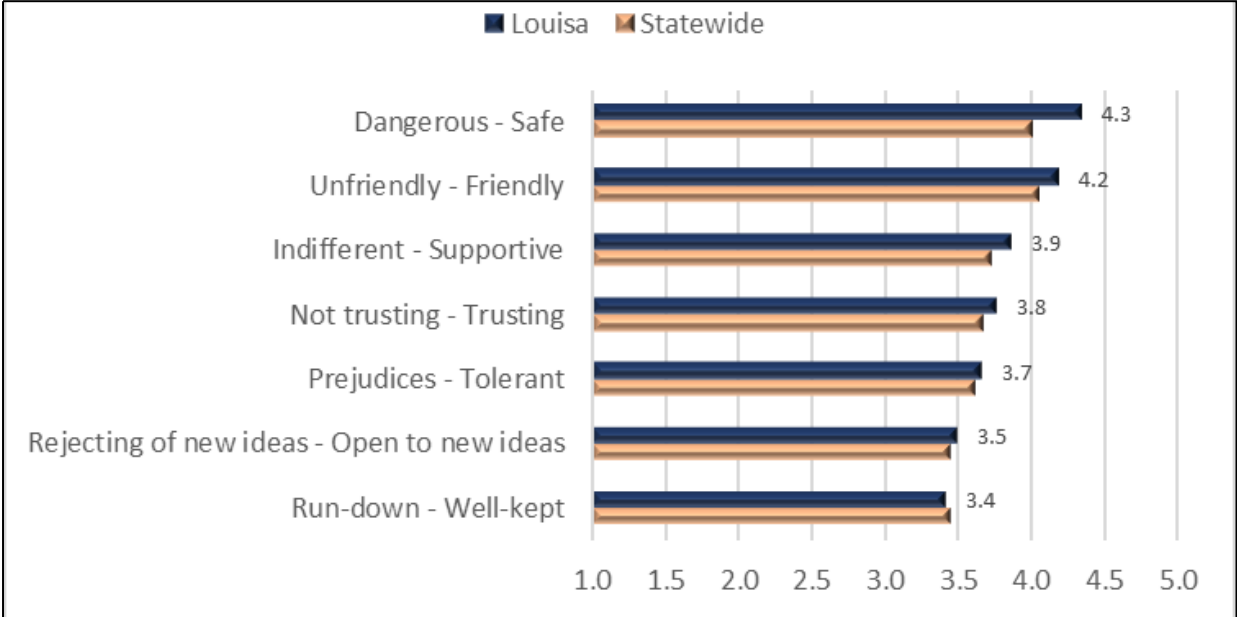
Non-governmental services were not rated as highly when compared to governmental services. Graph 6.3: Ratings of Local Non-Governmental Services shows that respondents rated “medical services” and “senior services” highest. “Availability of jobs” and “quality of shopping facilities” got the lowest score

**Graph 6.3: Ratings of Local Non-Governmental Services**



Graph 6.4: Adjectives Describing the Community shows that the communities where Louisa County respondents live were perceived to be nice places to live. Their ratings were all high compared to the statewide data except for “Run-down – Well-kept.”

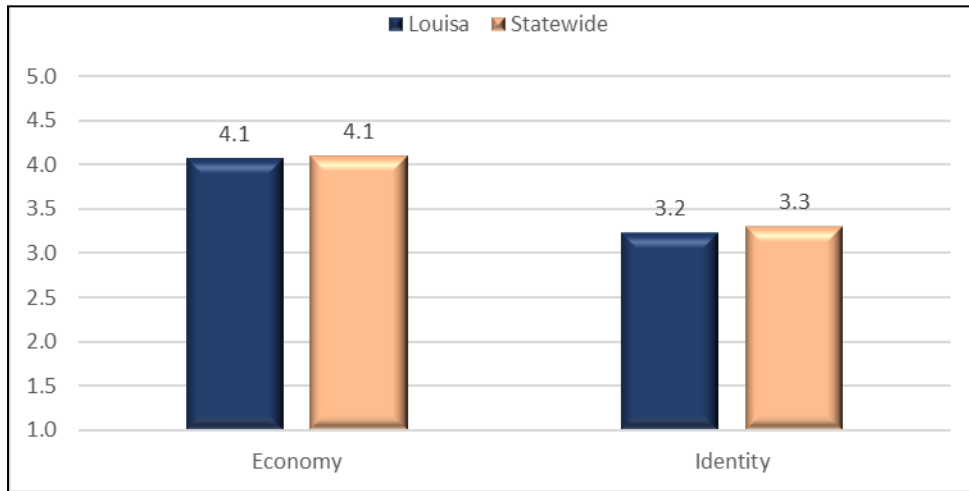
**Graph 6.4 – Adjectives Describing the Community**



### Perceived Local Impacts of Louisa Generating Station

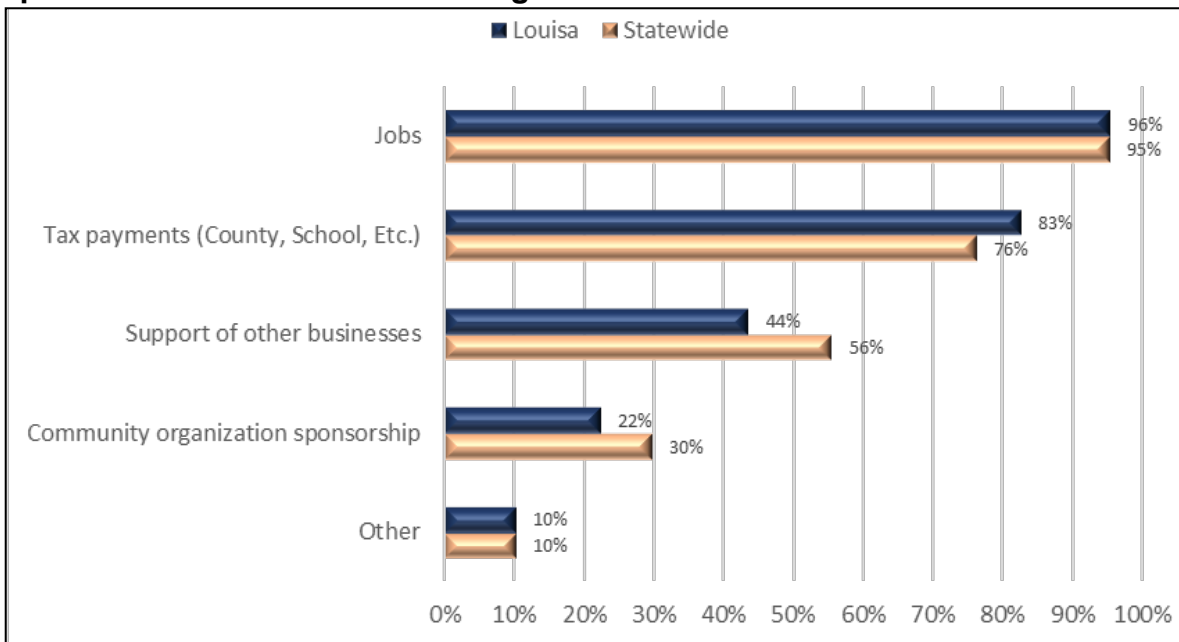
On a scale of 1 – 5 (1 being not at all important to 5 as extremely important), respondents in Louisa Counties saw the Louisa Generating Station as very important to their local economy and important to local identity. Their ratings were quite similar to state averages. See Graph 6.5: Local Importance of the Generating Station for more details.

**Graph 6.5: Local Importance of the Generating Station**



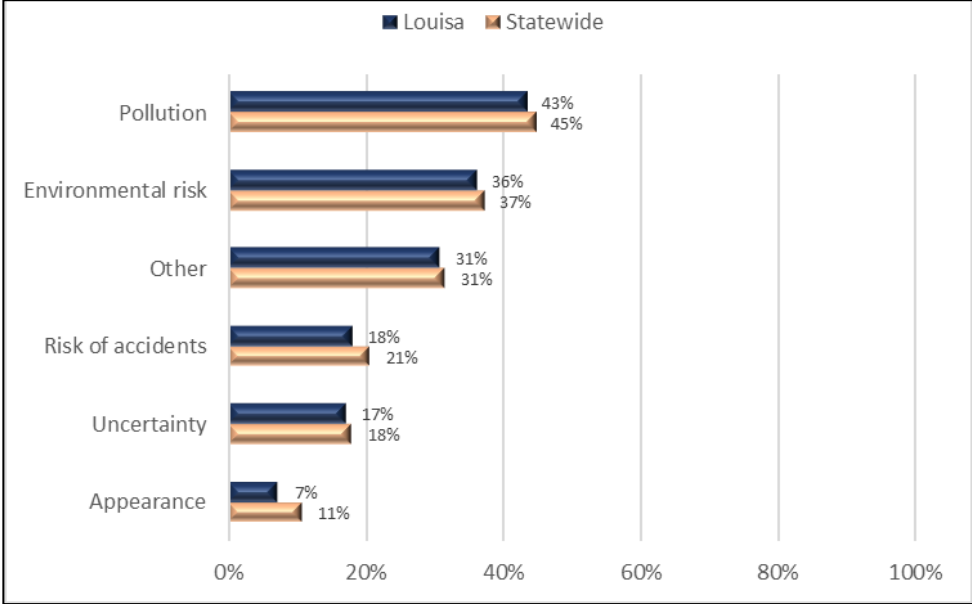
Compared to the statewide data, Louisa County respondents were more likely to see benefits from having the power plant in their community in terms of “providing jobs” and “tax payments”. However, they were less likely to cite “support of other business” or “community organization sponsorship” as a benefit. See Graph 6.6: Benefits of the Generating Station for details.

**Graph 6.6: Benefits of the Generating Station**



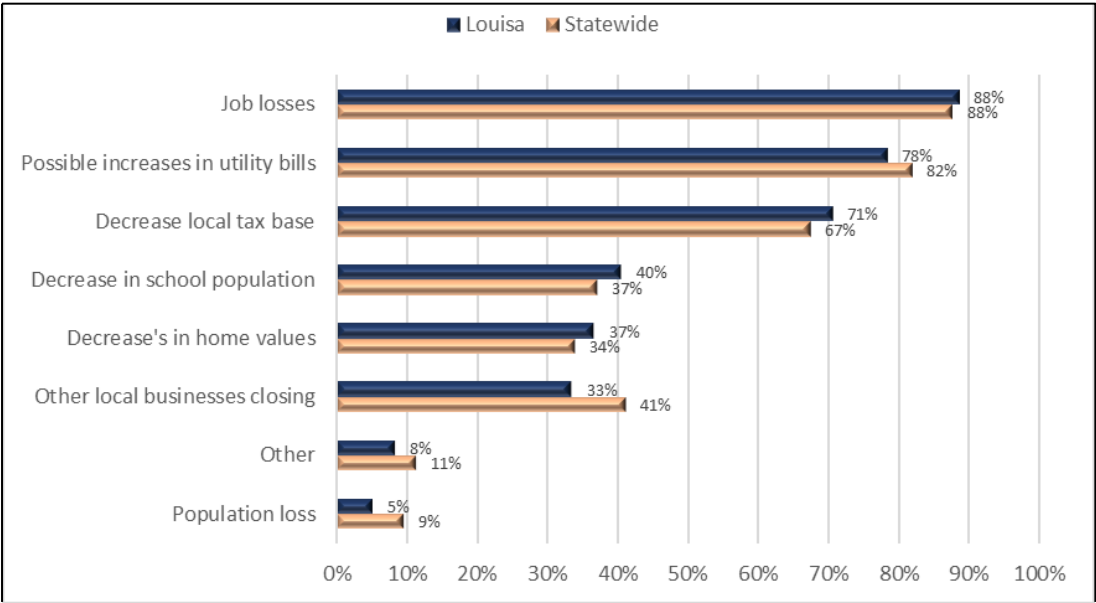
Residents in Louisa County were less likely to perceive negative local effects due the presence of the Louisa Generating Station compared to statewide averages. Graph 6.7: Negative Effects of the Generating Station shows that respondents were most likely to cite “pollution” or “environmental risk” as negative effects.

**Graph 6.7: Negative Effects of the Generating Station**



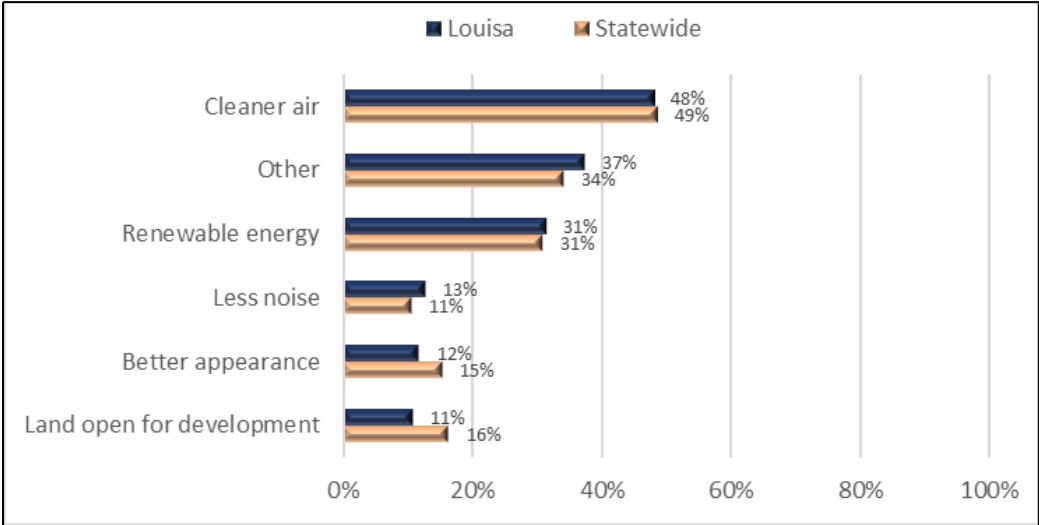
If the Louisa Generating Station were to close, concerns of Louisa County respondents were higher compared to the statewide averages in several areas “job losses”, “decrease in local tax base”, “decrease in school population”, and “decrease in home values”. However, concerns about “possible increases in utility bills”, “other business closing”, and “population loss” were lower compared to statewide data.

**Graph 6.8: Concerns about Closure**



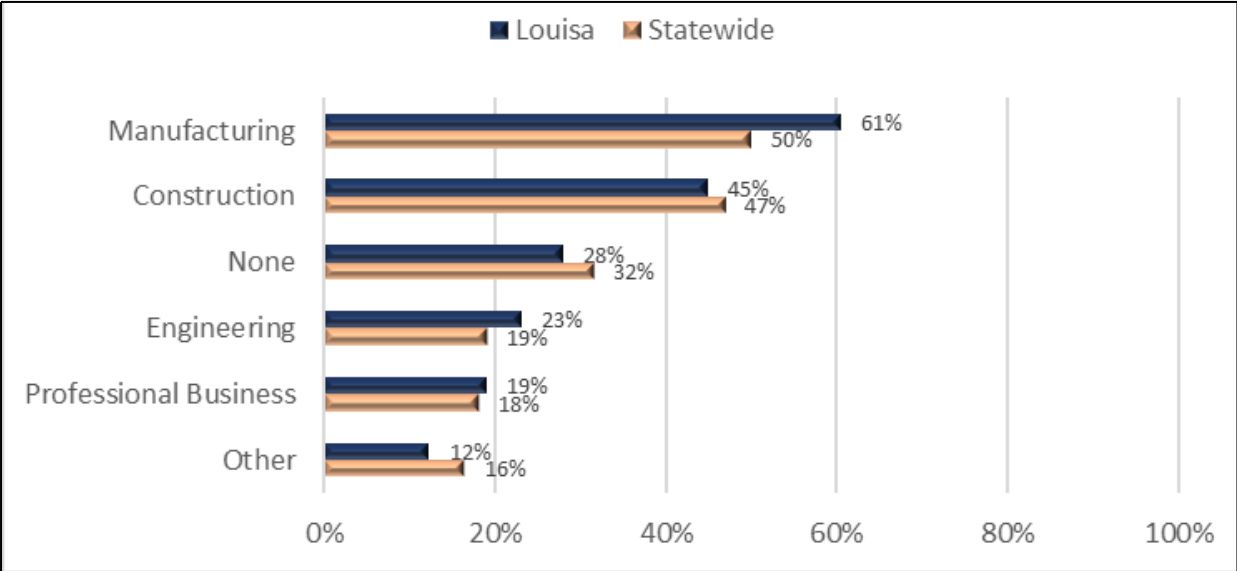
If the Louisa Generating Station were to close, respondents cited “cleaner air” and “renewable energy” as potential positive effects. Overall residents of Louisa County were less likely to see positive effects of closure relative to statewide averages per Graph 6.9: Positive Effects of Closure. The exceptions to this are “less noise” and “renewable energy.”

**Graph 6.9: Positive Effects of Closure**



Residents of Louisa County were overall more likely to believe that there would be local jobs available to Louisa Generating Station workers. Only **28%** of Louisa County respondents believed that there would be no local jobs available for the employees of the Louisa Generating Station if they were to lose their job. Graph 6.10: Other Jobs Available for Power Plant Workers provides details.

**Graph 6.10: Other Jobs Available for Power Plant Workers**





## Focus Groups and Key Informant Interviews

We held a small focus group with a total of six key informants in Louisa County. The interview participants included current and former elected officials, an economic development representative, and a local community foundation. Following our interview script (**Appendix 2**) we asked about 1) Benefits of the Louisa Generating Station for the local area, 2) Drawbacks or any negative effects the plant might have, and 3) Their thoughts about the future of the plant.

### Benefits

The first response in our focus group to the benefits of the power plant was **“Clearly the [Utility Replacement Tax]. That’s some money for us that we wouldn’t want to go without.”** Although one elected official mentioned that, **“They are not running at full capacity so the tax numbers have dropped down quite a bit in recent years.”**

The focus group participants were also aware of significant amounts of local spending in the two-county area. **“They spend a lot of money locally for repairs and contractors coming in.”** Additionally, **“A lot of their plant maintenance and cleaning services come from local companies.”** Train traffic was a particularly notable local industry that relies heavily on the power plant. **“There are local companies that shuttle the drivers. There is a service out of Burlington that picks up the engineers and helps them change staff. So, there are local companies that benefit from it.”** The use of trains and barges was seen as a benefit to other industries that may use those services. **“A lot of our other industries rely on barge and train transit, so I worry that if there is less demand for that... I worry that those services would be discontinued.”**

Another benefit cited was the use of byproducts of production. **“They sell their fly ash to all of the concrete plants in the area and Louisa Generating Station is one of the largest sources of that for the area.”**

One of the participants mentioned local giving as a benefit. **“Alliant contributes to the Louisa Development Group, it’s not millions of dollars but we operate on a small budget so it’s significant.”**

Reliability was also important. **“It’s a reliable source of power. You’ve got a stockpile of coal there.”**

For at least some residents, the generating station is a significant local landmark, **“They’ve been an icon. When you come down Easley’s Hill you see that stack and you know where you’re at in the world. You can see it from most parts in the county. It’s been around since the late 70s.** However, another participant said that in the southern part of the county, **“I could ask people where it is and they would have no idea. They would probably say that it is in Muscatine County”**

Participants also mentioned that the plant provides training opportunities: **“They do a lot of training for the fire department out there.”**

## Negatives

The participants in our focus group saw few negatives associated with the plant. **“I’ve been here nine years, and I haven’t heard anything negative about pollution.”** Another shared, **“I see the white emissions as I drive by and I appreciate that it’s not black.”** A third participant mentioned speaking with residents who lived near the plant **“I spoke with some of the neighbors, and they had no complaints. Nobody said ‘move them out!’ and I’ve never heard any of that ever.”**

A school employee mentioned the drawbacks of increased train traffic **“We wouldn’t have as many school bus delays if the coal trains weren’t coming in. Some of those coal trains go pretty slow.”**

From an economic development perspective, one participant mentioned issues with river access due to the plant’s location **“One negative is that there is only one tract of land off to the side for international barge traffic. There is only a 20-acre tract that is available for us to get access to river traffic.”**

## Future

The general consensus among the participants in the focus group was that the plant was going to be closed eventually. **“It’s going to close eventually at least with the current federal administration. They’re pushing to close the coal plants.”** The general agreement was that environmental regulations were the primary cause of energy transition. **“I believe government regulation is going to close coal plants.”** Another participant added, **“Coal is competing against other energy sources that are government subsidized and coal is not [...] if the government is going to help with some energy types then there is a business decision that is going to be made.”**

The focus group participants in Louisa County were for the most part open to new energy sources. One former elected official shared, **“I would love to see a modular nuclear plant on that site. I’d like to see that utility tax continue to come in.”**

Louisa County has been the location of recent solar developments, **“I like the thought of getting more solar arrays in Louisa County. I’ve heard that it could be up to 3,500 acres of solar energy which is always a possibility. That brings more to the county in terms of tax.”**

Some saw the new solar installations as important to complement the existing plant. **“I think solar is the only way that we’re going to keep it here and make that facility a peak station. Then we can know long term that it will be there for many generations.”** There were doubts that solar could completely replace the electricity produced at the Louisa Generating Station. **“We need something to keep the lights on, and I don’t think batteries are there yet.”**

An official with the school district worried about the potential loss of families from the area if the plant were to close. **“With the school you’re always worried about losing**

**families. A school survives on the per child dollars from the state, and it doesn't take many kids leaving because of a parent or grandparent's employment that it affects school finance."**

The potential loss in tax base was also a concern. **"It would be devastating to Louisa County if we lost it completely and no one came in to replace it. You're talking 4-500 residents that we would have to bring in to keep the tax structure in place. We would have to cry, scratch, pull all the way up to Washington DC to stop whatever reason that they would be leaving."**

Another mentioned that the quality of the jobs often kept several families in the county: **"It goes deeper than just the people that are employed there. You might just have one individual in a family working there, but the rest of the family and other relatives stay to be close together. If you lost that job you might lose more than one family."**

# Pottawattamie County (Walter Scott Energy Center)

## Plant Characteristics (Unit #3)

**Owners:** MidAmerican Energy 79.1%, Central Iowa Power Cooperative 11.5%, Cedar Falls Utilities 2.88%, Corn Belt Power Cooperative 3.58%, Atlantic Municipal Utilities 2.38%

**Plant Nameplate Capacity:** 725.8 MW (megawatts)

**Number of Employees (2020):** 76

## Plant Characteristics (Unit #4)

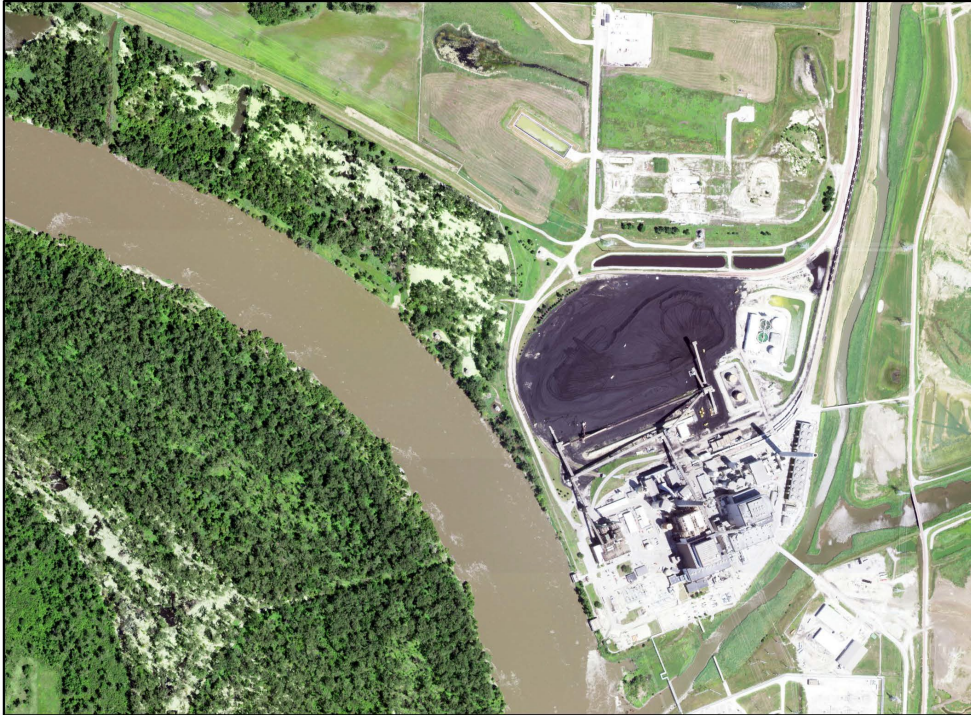
**Owners:** MidAmerican Energy 60.67% Lincoln Electric Systems 12.66% Municipal Energy Agency of Nebraska 6.92% Central Iowa Power Cooperative 9.55% Cedar Falls Utilities 1.73% Corn Belt Power Cooperative 4.88%

**Plant Nameplate Capacity:** 922.5 MW (megawatts)

**Number of Employees (2020):** 76

The Walter Scott Energy Center is located along the Missouri River in the City of Council Bluffs. Figure 7.1 displays an aerial view of the Energy Center. This image was taken July 29, 2019, as part of the National Agriculture Imagery Program (NAIP) through the United States Department of Agriculture Farm Agency

**Figure 7.1: Aerial Photograph of the Walter Scott Energy Center**



## Plant Expenditures and Employment

The Walter Scott Energy Center includes two units that are reported separately on MidAmerican’s FERC Form 1. For the purposes of economic impact reporting we have combined the impacts of the two units. Both Unit #3 and Unit #4 have seen reductions in staffing of **19.1%** from **94** to **76** and in total expenditures by **31%** and **33%** respectively.

Tables 7.1 and 7.2: Basic Operating Expenses for Unit #3 and Unit #4 show this decline over the past five years. The dollar figures below are based on MidAmerican Energy’s “Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report” from 2016 to 2020. All dollar figures are shown as reported on the FERC Form 1. For both units, we assumed that the other minority owners had expenses and employment as well, proportionate to their ownership stake.

**Table 7.1: Basic Operating Expenses (Unit #3)**

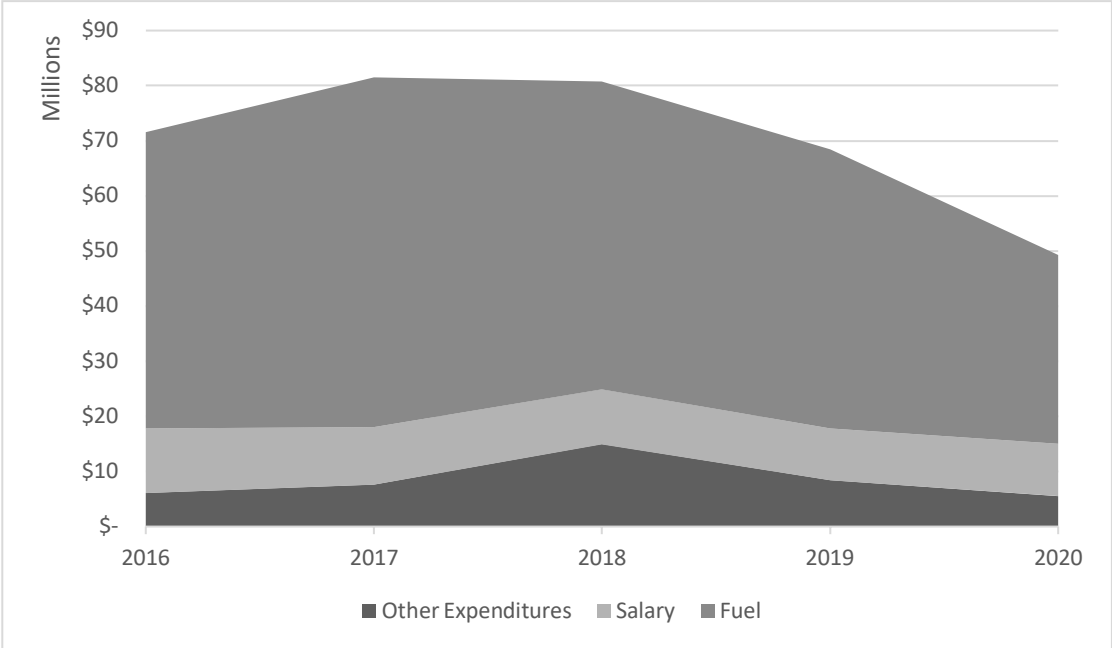
	2016	2017	2018	2019	2020
<b>Employees</b>	94	83	80	76	76
<b>Fuel Expenses</b>	\$53,693,771	\$63,469,424	\$55,800,526	\$50,550,925	\$34,261,537
<b>Total Expenses</b>	\$71,526,021	\$81,494,171	\$80,719,135	\$68,421,803	\$49,284,183

**Table 7.2: Basic Operating Expenses (Unit #4)**

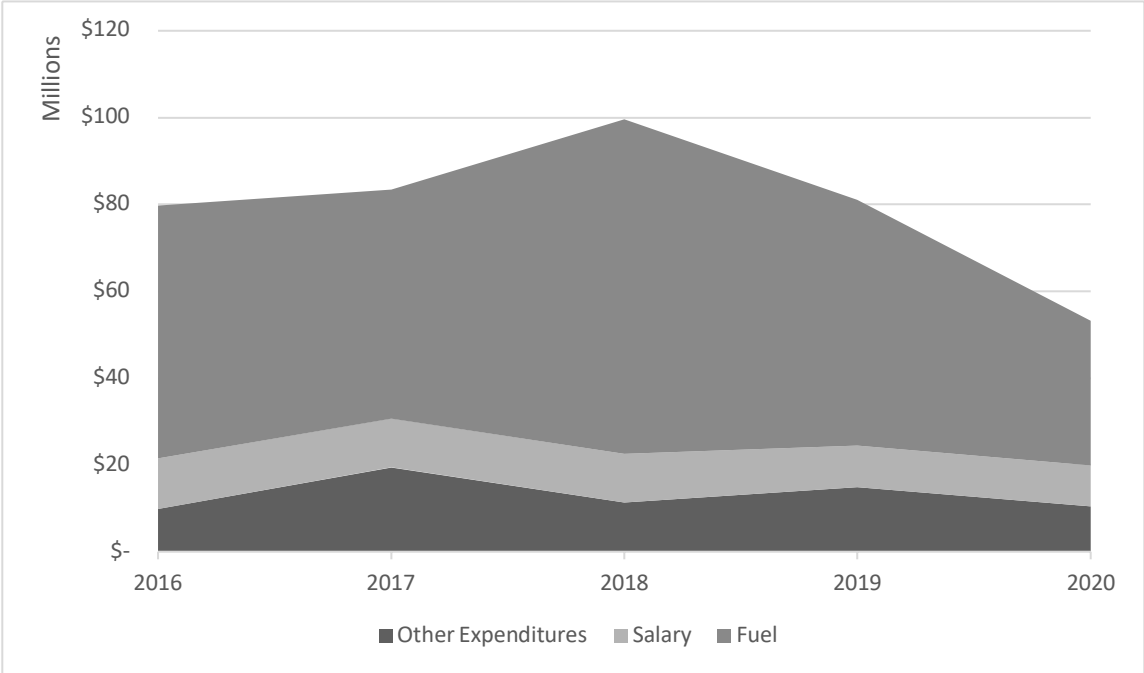
	2016	2017	2018	2019	2020
<b>Employees</b>	94	91	89	76	76
<b>Fuel Expenses</b>	\$58,233,908	\$52,744,216	\$77,115,050	\$56,638,975	\$33,302,794
<b>Total Expenses</b>	\$79,818,853	\$83,465,406	\$99,612,202	\$81,042,558	\$53,183,044

Like all power plants included in this study, the majority of spending is on fuel and salaries at both units, as presented below in Graphs 7.1 and 7.2.

**Graph 7.1: Total Power Plant Expenditures by Category (Unit #3)**



**Graph 7.2: Total Power Plant Expenditures by Category (Unit #4)**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the Walter Scott Energy Center was responsible for **\$110,401,617** in local economic activity in 2020, as presented in Table 7.3: Local Impact on Industry Spending in 2020 (2021 Dollars). This is in addition to the value of electricity sales from the plant. These dollar figures have been inflated to 2021 dollars. Indirect impacts of the plant include all local sales to the power plant itself and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” shows the relative importance of the power plant to that sector. For example, the Walter Scott Energy Center supports **2.09%** of all activity in the Transportation and Warehousing Sector in the county.

Based on calculations using the reported total output figures in Table 7.3, a significant portion of the local impacts of the plant, **49.5%**, are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Finance and Insurance, and Real Estate and Rental.

Overall, IMPLAN calculates that the Walter Scott Energy Center supports **1.13%** of economic activity in Pottawattamie County in addition to the revenues of the plant itself.

**Table 7.3: Local Impact on Industry Output in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$1,918	\$9,463	\$11,381	0.00%
Mining	\$1,421,272	\$6,994	\$1,428,266	2.86%
Utilities	\$54,463,570	\$229,901	\$54,693,472	25.63%
Construction	\$1,080,105	\$151,891	\$1,231,997	0.19%
Manufacturing	\$3,356,054	\$149,607	\$3,505,661	0.12%
Wholesale Trade	\$3,310,496	\$485,913	\$3,796,410	0.58%
Retail Trade	\$773,267	\$1,366,475	\$2,139,743	0.50%
Transportation and Warehousing	\$11,280,351	\$254,431	\$11,534,782	2.09%
Information	\$1,485,342	\$349,843	\$1,835,185	0.95%
Finance and Insurance	\$3,049,569	\$1,009,221	\$4,058,790	0.91%
Real Estate and Rental	\$1,704,164	\$2,677,079	\$4,381,244	0.51%
Prof, Scientific, and Tech Services	\$3,901,314	\$326,638	\$4,227,952	1.70%
Management of Companies	\$126,814	\$31,719	\$158,533	0.59%
Administrative and Waste Services	\$4,609,747	\$251,554	\$4,861,301	3.09%
Educational Services	\$8,910	\$83,795	\$92,705	0.45%
Health and Social Services	\$87	\$2,573,085	\$2,573,171	0.41%
Arts, Entertainment, and Recreation	\$72,244	\$266,351	\$338,595	0.28%
Accommodation and Food Services	\$1,099,445	\$801,061	\$1,900,507	0.43%
Other Services	\$408,905	\$715,289	\$1,124,194	0.38%
Government & non-NAICs	\$6,288,093	\$219,636	\$6,507,729	1.22%
<b>Total</b>	<b>\$98,441,669</b>	<b>\$11,959,948</b>	<b>\$110,401,617</b>	<b>1.13%</b>



## Employment Impacts

According to the model, the Walter Scott Energy Center supports the equivalent of **511.00** jobs in Pottawattamie County, as shown in Table 7.4: Local Employment Impacts in 2020, below. The direct employment numbers represent the **152** individuals reported as employed by the energy companies on the FERC Form 1. For the indirect and induced jobs, the totals indicate the sum of all jobs across the sectors in that industry. About **40%** of the total jobs supported by the plant are in the Utility sector. This includes those directly employed by the plant as well as those indirectly supported by the plant – mostly in transmission and distribution.

For more information on how these numbers are calculated, see pg. 5.

**Table 7.4: Local Employment Impacts in 2020**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.01	0.05	0.06
Mining	0.00	3.75	0.02	3.77
Utilities	152.00	52.36	0.23	204.59
Construction	0.00	5.07	0.75	5.82
Manufacturing	0.00	0.95	0.13	1.07
Wholesale Trade	0.00	6.91	1.63	8.54
Retail Trade	0.00	8.25	17.70	25.95
Transportation and Warehousing	0.00	43.73	2.31	46.04
Information	0.00	3.18	0.88	4.06
Finance and Insurance	0.00	13.77	5.56	19.34
Real Estate and Rental	0.00	9.27	3.96	13.24
Prof, Scientific, and Tech Services	0.00	23.50	2.27	25.78
Management of Companies	0.00	0.63	0.16	0.79
Administrative and Waste Services	0.00	58.73	3.11	61.84
Educational Services	0.00	0.17	2.04	2.21
Health and Social Services	0.00	0.00	22.37	22.37
Arts, Entertainment, and Recreation	0.00	1.26	3.56	4.82
Accommodation and Food Services	0.00	17.48	11.77	29.25
Other Services	0.00	3.60	8.04	11.64
Government & non-NAICs	0.00	18.94	0.89	19.82
<b>Total</b>	<b>152.00</b>	<b>271.57</b>	<b>87.42</b>	<b>511.00</b>

## Employee Compensation

Employee compensation includes the value of both wages and benefits paid to employees. The Walter Scott Energy Center supports **\$39,767,898** in local employee compensation, as is shown below in Table 7.5 Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **152** Walter Scott Energy Center jobs represent nearly half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$26,376,311**, or more than **66%** of total employee compensation supported by the plant is paid to workers in the Utility sector.

**Table 7.5: Local Employee Compensation in 2020 (2021 Dollars)**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$200	\$820	\$1,021
Mining	\$0	\$12,410	\$399	\$12,809
Utilities	\$19,356,121	\$6,989,802	\$30,389	\$26,376,311
Construction	\$0	\$279,631	\$39,748	\$319,379
Manufacturing	\$0	\$79,747	\$7,723	\$87,469
Wholesale Trade	\$0	\$442,200	\$107,291	\$549,490
Retail Trade	\$0	\$219,873	\$470,745	\$690,618
Transportation and Warehousing	\$0	\$3,237,496	\$83,937	\$3,321,432
Information	\$0	\$380,793	\$82,950	\$463,743
Finance and Insurance	\$0	\$542,502	\$131,512	\$674,014
Real Estate and Rental	\$0	\$144,866	\$58,602	\$203,468
Prof, Scientific, and Tech Services	\$0	\$1,106,480	\$100,339	\$1,206,819
Management of Companies	\$0	\$60,213	\$15,061	\$75,274
Administrative and Waste Services	\$0	\$1,637,920	\$94,663	\$1,732,584
Educational Services	\$0	\$2,922	\$41,619	\$44,541
Health and Social Services	\$0	\$40	\$1,301,218	\$1,301,259
Arts, Entertainment, and Recreation	\$0	\$8,715	\$64,255	\$72,971
Accommodation and Food Services	\$0	\$396,910	\$265,965	\$662,875
Other Services	\$0	\$171,831	\$273,671	\$445,501
Government & non-NAICs	\$0	\$1,461,538	\$64,782	\$1,526,319
<b>Total</b>	<b>\$19,356,121</b>	<b>\$17,176,088</b>	<b>\$3,235,689</b>	<b>\$39,767,898</b>

**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 7.6: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property tax rates in the future.

Although **0.82%** of Lewis Central School District’s 2020-2021 revenues came from utility replacement tax, even a total loss of this revenue would not result in a similar decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue.

In addition to the figures shown in Table 7.6, **\$65,887** was paid to Iowa Western Community College and **\$4,582** to the West Pottawattamie County Extension Office.

**Table 7.6: Value of FYE 2021 Utility Replacement Tax**

	Pottawattamie County	Lewis Central School District	City of Council Bluffs	Other*	Total
Replacement Funds	\$411,228	\$611,588	\$927,528	\$87,733	\$2,039,021
Percent of FYE 21 Revenues	0.43%	0.82%	0.52%	N/A	

\* Other may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

## Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

89 Pottawattamie residents returned the survey for a response rate of **8.9%**.

**Table 9.7 – Pottawattamie County Response Rate**

County	Responses	Response Rate
Pottawattamie County (Walter Scott Energy Center)	89	8.9%
Overall	879	12.6%

### The Respondents

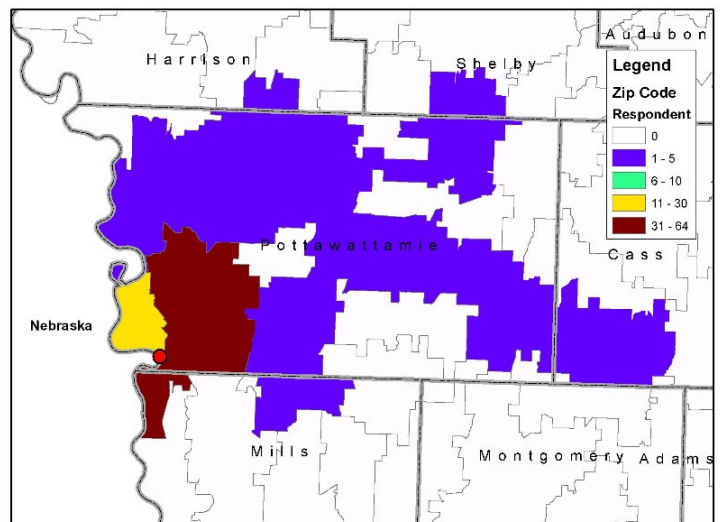
Out of 89 Pottawattamie County respondents 87 reported the zip codes where they live. Fourteen zip codes were represented of which 40% came from zip code 51503, 29% from 51501, and the rest were distributed from other zip codes. Table 7.8: Pottawattamie County Zip Codes shows the percentage of respondents by zip code and Figure 7.3 – Respondents by Zip Code shows the location of respondents.

There were a few respondents who could potentially reside in nearby counties such as Harrison, Shelby, Cass, and Mills counties. For this report, all respondents will be referred to as “Pottawattamie County respondents.”

**Table 7.8: Pottawattamie County Zip Codes**

Zip code	Number	Percent
51503	35	40.2%
51501	25	28.7%
51521	4	4.6%
51510	3	3.4%
51526	3	3.4%
51542	3	3.4%
51560	3	3.4%
51553	2	2.3%
51571	2	2.3%
51575	2	2.3%
51576	2	2.3%
51535	1	1.1%
51559	1	1.1%
57502	1	1.1%
Total	87	100.0%

**Figure 7.3: Respondents by Zip Code**



Almost 72% of Pottawattamie respondents were aged 55 or older. All age levels were represented in the survey, but the sample skewed significantly older than the population as a whole. See Table 7.9: Pottawattamie County Reported Ages for details.

**Table 7.9: Pottawattamie County Reported Ages**

Age	Number	Percent
18-24	1	1.2%
25-34	4	4.7%
35-44	10	11.8%
45-54	9	10.6%
55-64	26	30.6%
65+	35	41.2%
Total	85	100.0%

Income levels of Pottawattamie County respondents were well distributed with the highest percentage at the \$50,000 to \$74,999 income level. All of the income levels were represented with few respondents on the lowest and highest income levels. See Table 7.10: Pottawattamie County Reported Household Income below.

**Table 7.10: Pottawattamie County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	3	3.6%
\$15,000 to \$24,999	7	8.4%
\$25,000 to \$34,999	7	8.4%
\$35,000 to \$49,999	10	12.0%
\$50,000 to \$74,999	19	22.9%
\$75,000 to \$99,999	10	12.0%
\$100,000 to \$149,999	17	20.5%
\$150,000 to \$199,999	7	8.4%
\$200,000 or more	3	3.6%
Total	83	100.0%

## Community Characteristics

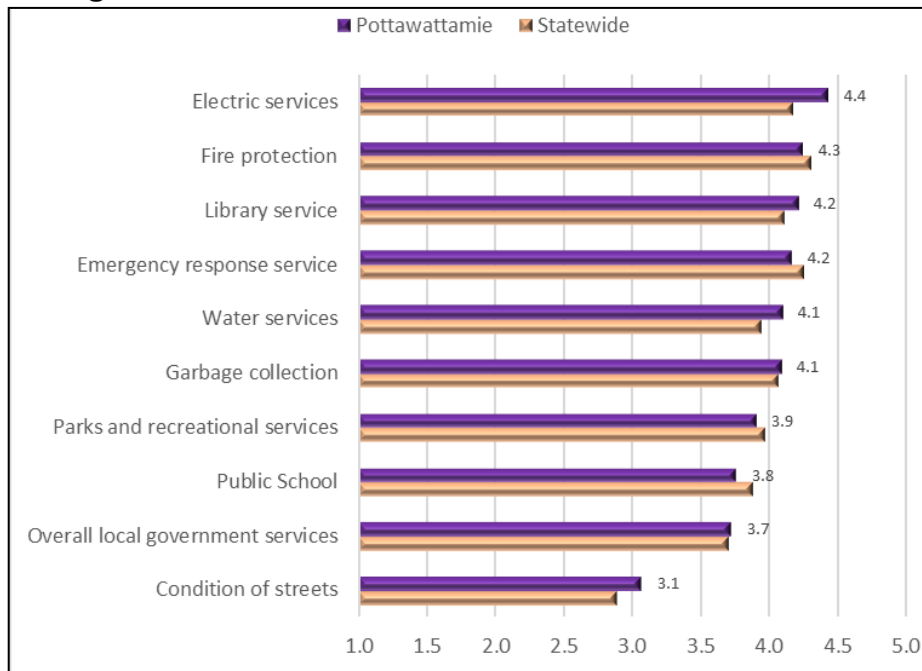
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including the City of Oakland in Pottawattamie County.<sup>1</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor to 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective to 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Pottawattamie respondents perceived all the local public services as good/very good except for "condition of streets". All the values are higher or similar to statewide averages. Graph 7.3: Ratings of Local Public Services, below shows the ratings.

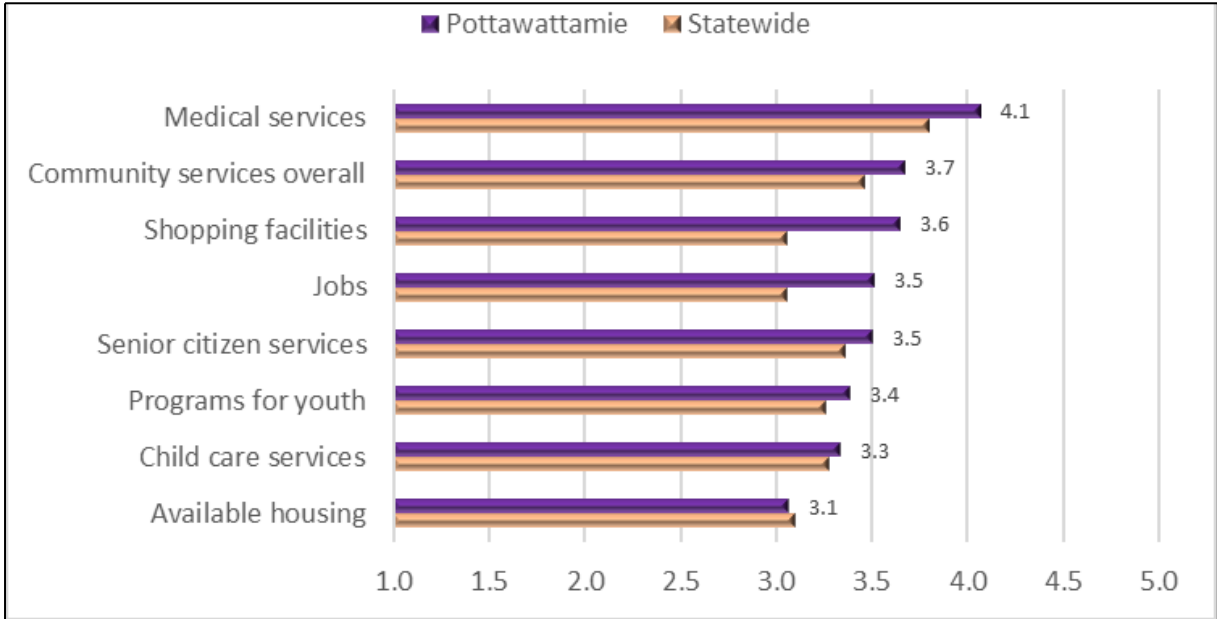
**Graph 7.3: Ratings of Local Public Services**



<sup>1</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.

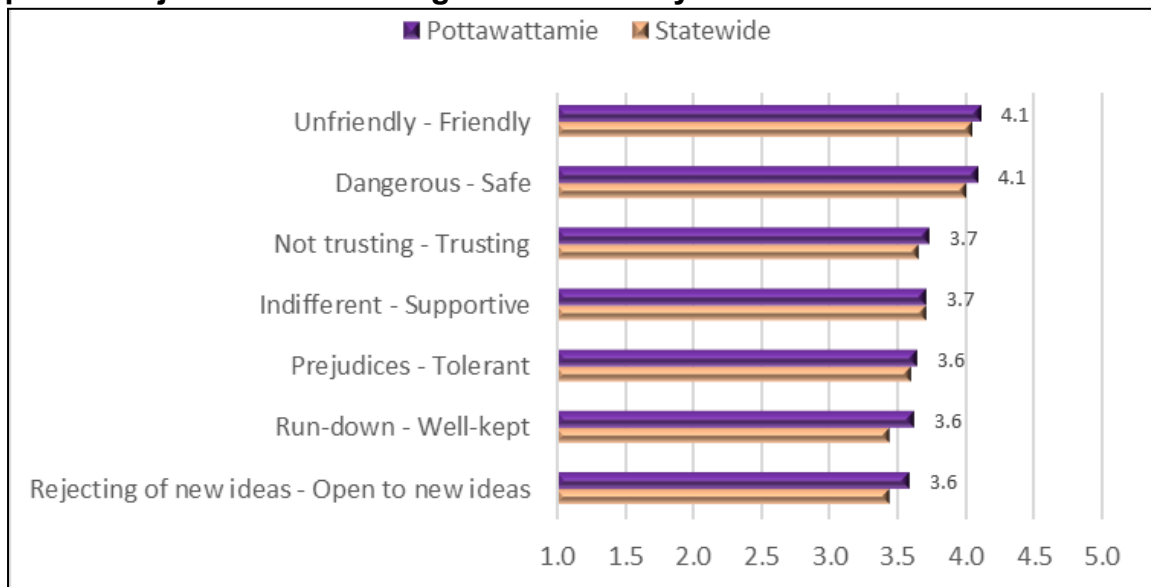
Graph 7.4: Ratings of Local Non-Governmental Services shows that “medical services” got the highest rating while “available housing” got the lowest. Overall Pottawattamie County residents ranked services more highly than the state average.

**Graph 7.4: Ratings of Local Non-Governmental Services**



Graph 7.5 shows that the communities where Pottawattamie County respondents live were perceived to be “safe”, “friendly”, “tolerant”, “supportive”, and “trusting”. Their ratings were all similar or higher than statewide averages.

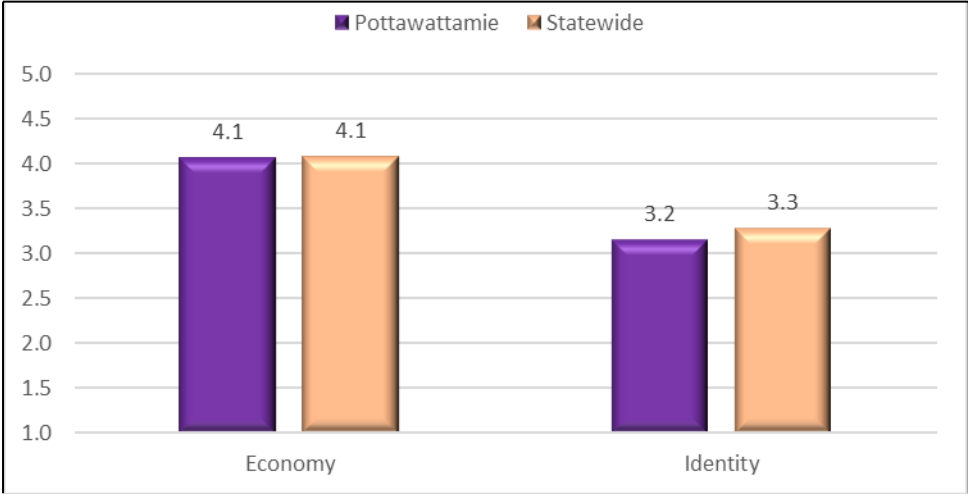
**Graph 7.5: Adjectives Describing the Community**



**Perceived Local Impacts of Walter Scott Energy Center**

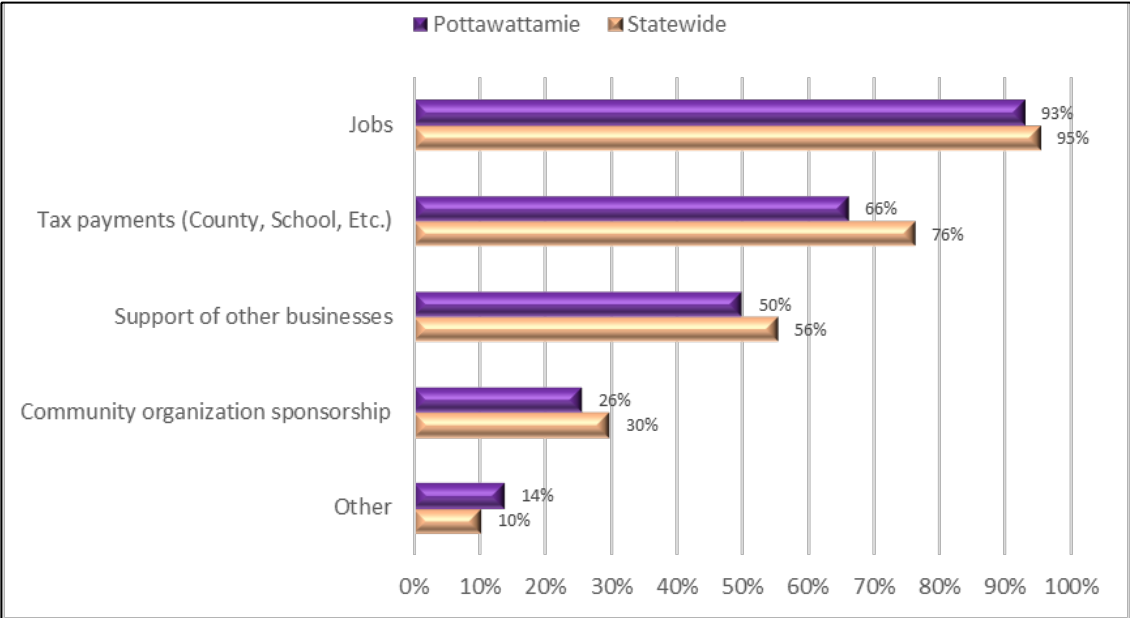
On a scale of 1 – 5 (1 being not at all important to 5 as extremely important), respondents in Pottawattamie County saw Walter Scott Energy Center as being more important to their area’s economy than community identity. Ratings were similar to state averages. See Graph 7.6: Local Importance of the Generating Station below.

**Graph 7.6: Local Importance of the Generating Station**



Compared to the statewide data, Pottawattamie County respondents perceived lower benefits provided by the power plant in their community. Per Graph 7.7, almost all stated “jobs” as the greatest benefit of having the power plant in their community, followed by “tax payments.”

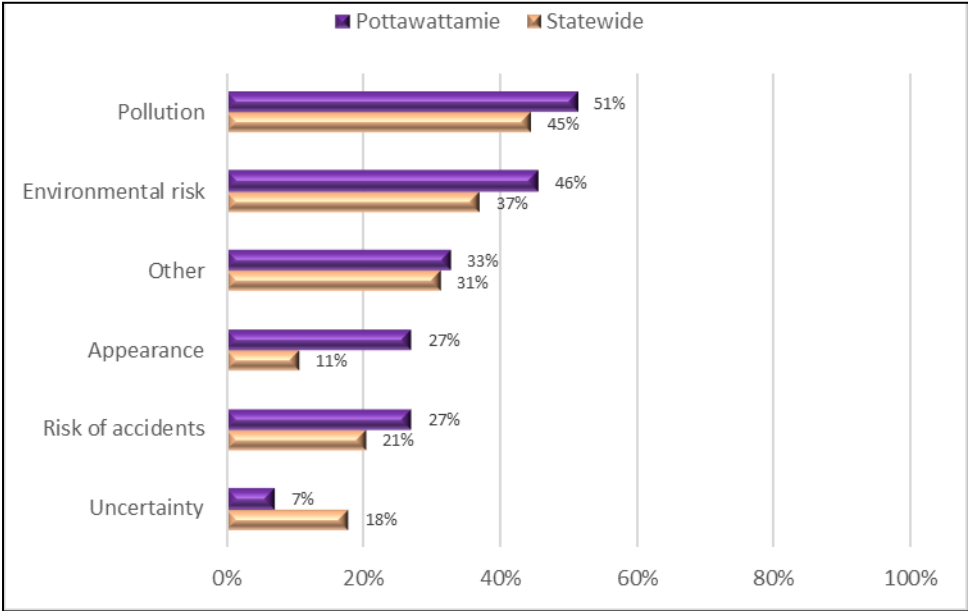
**Graph 7.7: Benefits of the Generating Station**





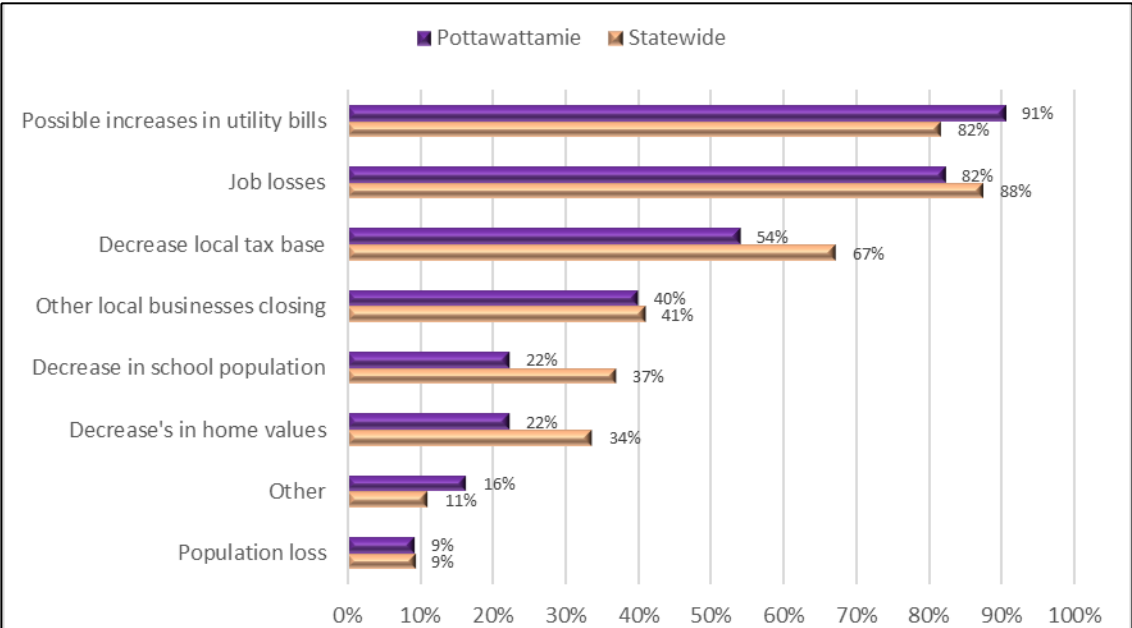
Residents were more likely to perceive negative local effects due the presence of Walter Scott Energy Center. Graph 7.8 Negative Effects of the Generating Station show that a slight majority of respondents selected at least one negative effect. Many who selected 'Other' wrote in that they saw no negative effects.

**Graph 7.8: Negative Effects of the Generating Station**



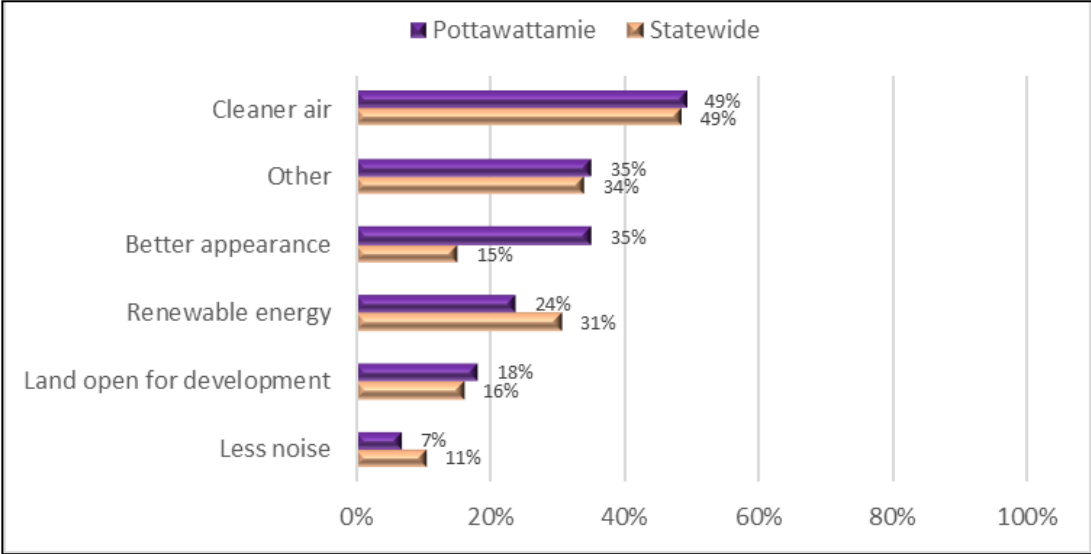
If the Walter Scott Energy Center were to close, Pottawattamie County respondents were most concerned with “job losses”, “possible increases in utility bills”, and a “decrease in local tax base”. Graph 7.9: Concerns about Closure provides details.

**Graph 7.9: Concerns about Closure**



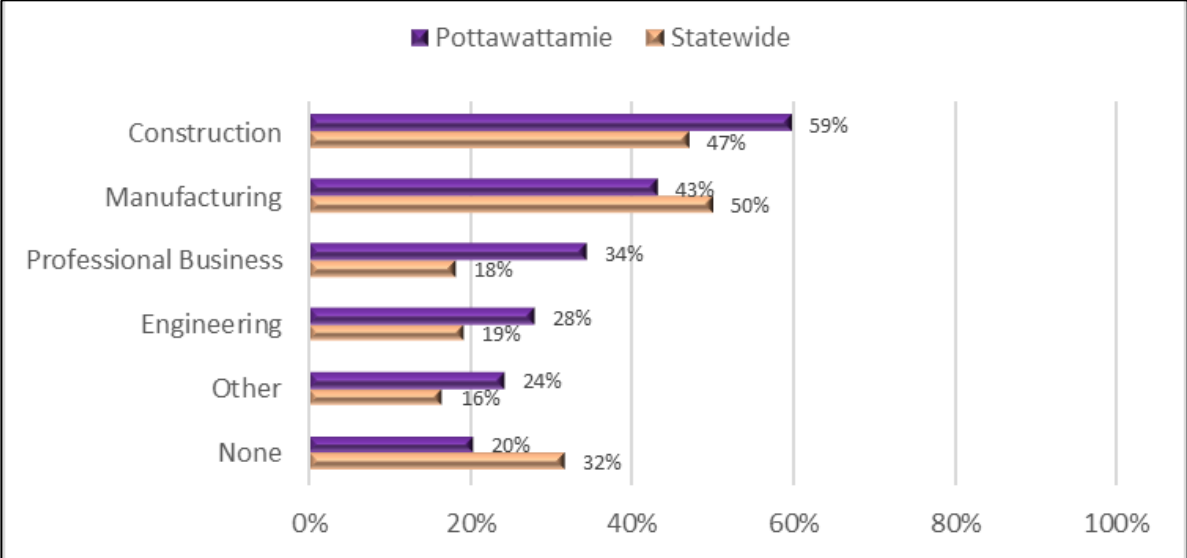
If the Walter Scott Energy Center closes, residents of Pottawattamie County were generally more likely to expect potential positive effects, especially 'better appearance' compared to statewide averages per Graph 7.10: Positive Effects of Closure.

**Graph 7.10: Positive Effects of Closure**



Residents of Pottawattamie County were overall more likely to believe that there would be local jobs available to Walter Scott Energy Center workers. Only **20%** of Pottawattamie County respondents believed that there would be no local jobs available for power plant employees. See Graph 7.11: Other Jobs Available for Power Plant Workers for details.

**Graph 7.11: Other Jobs Available for Power Plant Workers**



## Focus Groups and Key Informant Interviews

We held a focus group with seven key informants in Pottawattamie County. The participants included economic development staff, a representative of a local philanthropic organization, school employees, a representative of the business community, and a MidAmerican Energy employee. Although the presence of an employee of MidAmerican certainly had an influence on the conversation, he saved his comments for after the other participants had spoken. Following our interview script, see **Appendix 2**, we asked the participants their views on 1) benefits of the Walter Scott Energy Center for the local area; 2) drawbacks or any negative effects the plant might have; and 3) thoughts about the future of the plant

### Benefits

Local jobs at the plant were the first benefit mentioned. **“The obvious would be employment.”** Another participant added, **“The wages are really good. I personally know many people that work there and have really good careers.”**

Charitable giving was also a focus, **“They give back to the community in a lot of different capacities, not-for-profits, charities fundraisers. You see MidAmerican employees there consistently.”** A representative of the community foundation shared, **“they reached out to us [to help with] the Covid-19 response.”** Another local initiative that MidAmerican helped fund was, **“Blink, which is a community Wi-Fi network that we have. [...] That’s really helped our lower socio-economic areas.”**

Focus group participants mentioned several other businesses that serve the plant. **“They have a lot of contractors too. Not only the direct employment, but the indirect employment too.”** The representative from MidAmerican added, **“From food service to pipe welders and everything in between. Those are predominantly local firms that we use just because they’re around and they have the expertise and ability to do the work that we need.”**

A major benefit cited by all of our participants was the availability of power to support local industry. **“Direct access to power. Obviously, it’s right there. [...] They’re diversified, as that makes sense for not only the environment, but also the bottom line.”** The MidAmerican Employee shared that a lower percentage of electrical production was coming from coal plants, but **“Those plants help keep the lights on. We’ve moved most of our base load generation over to wind, it is plants like those [that help us provide] reliable and clean electricity.”**

Utility Replacement Tax payments were less of a concern for our participants in Pottawattamie County relative to other counties. When asked about tax dollars the emphasis was on the support for the larger industrial base of the area rather than the money from the Energy Center itself. **“Industry is obviously very important to school districts having MidAmerican, having Google, those large employers. Not only in regards to tax-base but also those folks living and residing in our districts.”**

## Drawbacks

Participants in the focus group mentioned few drawbacks, **“The plant is just west of where I live. It is strategically placed in an industrial area.”**

Others said that negative opinions in the community could be due to misinformation, **“Negative perception and lack of true information about the plant might be a [drawback], but I’ve never heard anything negative about the power plant.”**

The only drawback mentioned was the appearance of the plant from Lake Manawa. **“I think there are new opportunities that might be coming down the pike in the Lake Manawa area. [...] There is land that could be developed in the area [...] Is there a way, from the Manawa shores [...] to somehow make that area more appealing? They’ve done a great job nearby the plant. It’s more [of an issue] from far away.”** Another focus group participant was less concerned, **“Eagle Crossing, a subdivision went in just north of there. That tells me that in general [...] the facility is not ugly to look at, and they don’t mind having that as their view.”**

## Future

All of our participants foresaw the plant being around for the foreseeable future. **“I see it as a long-term resource for the community.”** The general consensus was that how the plant operates may change, but that it would remain operational. **“It’s obviously producing the power that we need. You see shifts in how things are operated and you’d hope those shifts keep that facility on sound footing.”** Another added, **“I have heard nothing about closure, and I certainly hope that that happens never.”**

Participants expressed doubts that other sources would be able to replace the generation capacity and reliability of the plants **“What would we use? What would replace [the electricity]?”** There were concerns about how a closure might affect local electrical users. **“You have to think about the trickle-down effect? What would our industries do that are relying on that power for their manufacturing and data centers?”** Another added, **“It is troubling to think about.”** There was some discussion of renewable sources of electrical generation. **“I don’t know what the alternative would be. I know that Iowa [...] is one of the leaders in wind, but I don’t know what that looks like for us.”**

One participant mentioned that some of the increased demand for renewables was driven by industry, **“As we transition to wind and solar as there are advancements in technology with battery storage those things are really important to companies like Google, like Facebook, like a lot of these companies that want renewable energy that MidAmerican is providing them.”**

When asked what impacts a shutdown would have, a school employee worried about enrollment numbers, **“When a big employer like that goes away that can have really adverse impacts on your student population. Here in Iowa that’s what brings the bread home, how many bodies that you have sitting in seats.”**

Another spoke of how quickly technology has changed in the energy sector, **“Five years ago, solar was not an option. Technology has changed significantly in five years. We would hope that if they were to [transition away from] coal that they would use that land for other purposes, solar being one.”**

Towards the end of the focus group, the representative from MidAmerican shared that, **“We have no plans to shut the plant down for a number of reasons. Chief among them is security. When you flip the light switch on, those lights have to come on. Whether you are a residence or Google and everything in between.”**

The MidAmerican employee also explained some of the changes in how the plant is operating, **“The way that we use those coal plants is evolving as time goes on. A lot of that has been driven by renewables and how much more of our generation mix comes from renewables, primarily wind.”** Addressing the question of reliability for wind power, **“What happens when the wind doesn’t blow? Valid question and one that took a lot of time to answer quite frankly. [...] if it’s not blowing over here where this turbine is, we have a lot of wind turbines scattered all over the place so if it’s not blowing here, it’s probably blowing over there. What that has done is it is allowing us to use our renewables as base load generation. And that is a role that thermal plants have traditionally played across the country. And that role is shifting and kind of turning on its head. We’ll spin those coal plants up, we’ll take them down, spin them up, we’ll take them down. Where it used to be that we would just spin them up and leave them up. We don’t do that anymore because we don’t have to. So, wind is... as a feedstock, wind is free. Coal is not, so if we can spin those wind turbines it makes a lot more economical sense and it makes a lot more environmental sense for us to do so. [...] Coal is still] a key part of our generation portfolio although a decreasing part of our generation portfolio. [...] We’re just going to be shifting the way we use those plants across the board in Council Bluffs and elsewhere to meet market demands, market preferences and to accommodate the increased presence of renewables across our generation portfolio.”**

## Wapello County (Ottumwa Generating Station)

### Plant Characteristics

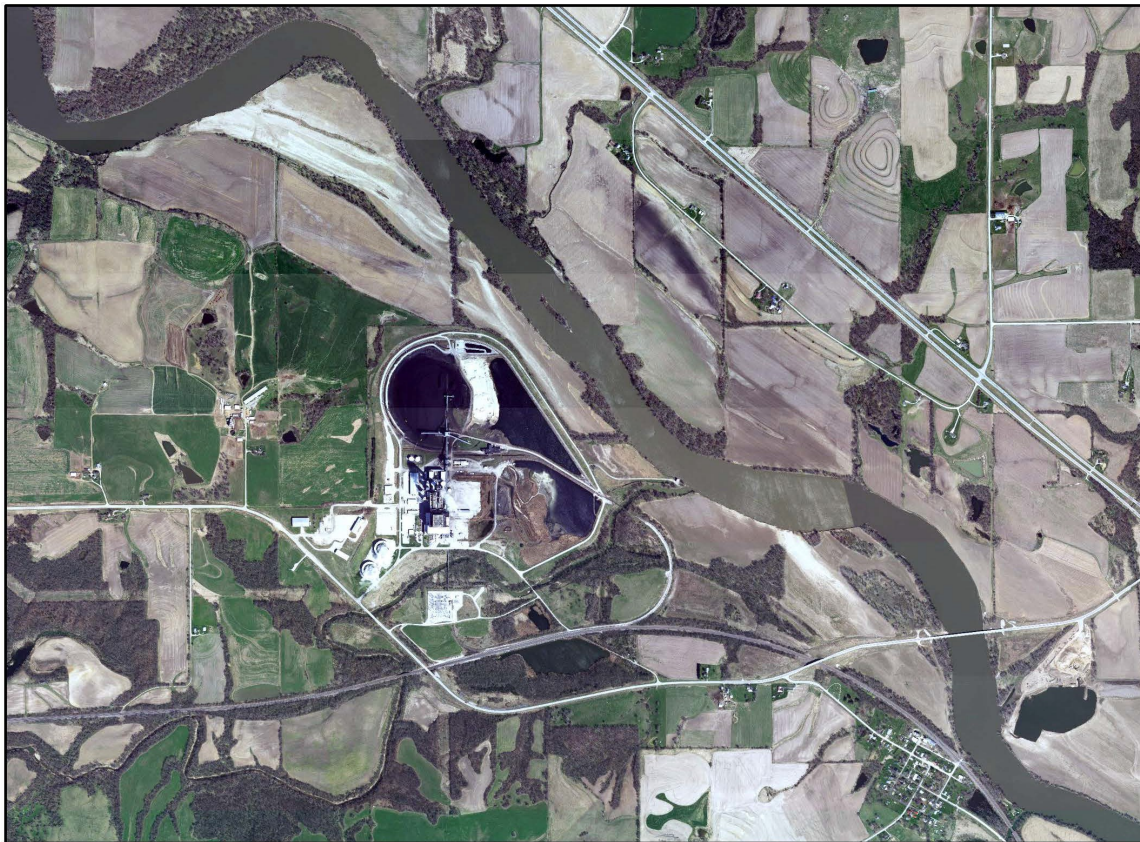
**Owner:** MidAmerican Energy 52% Interstate Power and Light (Alliant Energy) 48%

**Plant Nameplate Capacity:** 725.9 MW (megawatts)

**Number of Employees (2020):** 78

The Ottumwa Generating Station is located along the Des Moines River in rural Wapello County approximately two miles northwest of the City of Chillicothe and ten miles northwest of the City of Ottumwa. Figure 8.1 displays an aerial view of the station. This image was taken April 4, 2016, as part of a statewide imagery project funded by State of Iowa.

**Figure 8.1: Aerial Photograph of the Ottumwa Generating Station**



## Plant Expenditures and Employment

The Ottumwa Generating Station has experienced a reduction in overall expenses and employment over the five years included in this study. From 2016 to 2020 there was a **19.6%** reduction in staffing (from 97 to 78) and a **31.5%** reduction in total expenditures. The reduction in total expenditures is largely due to lower fuel purchases.

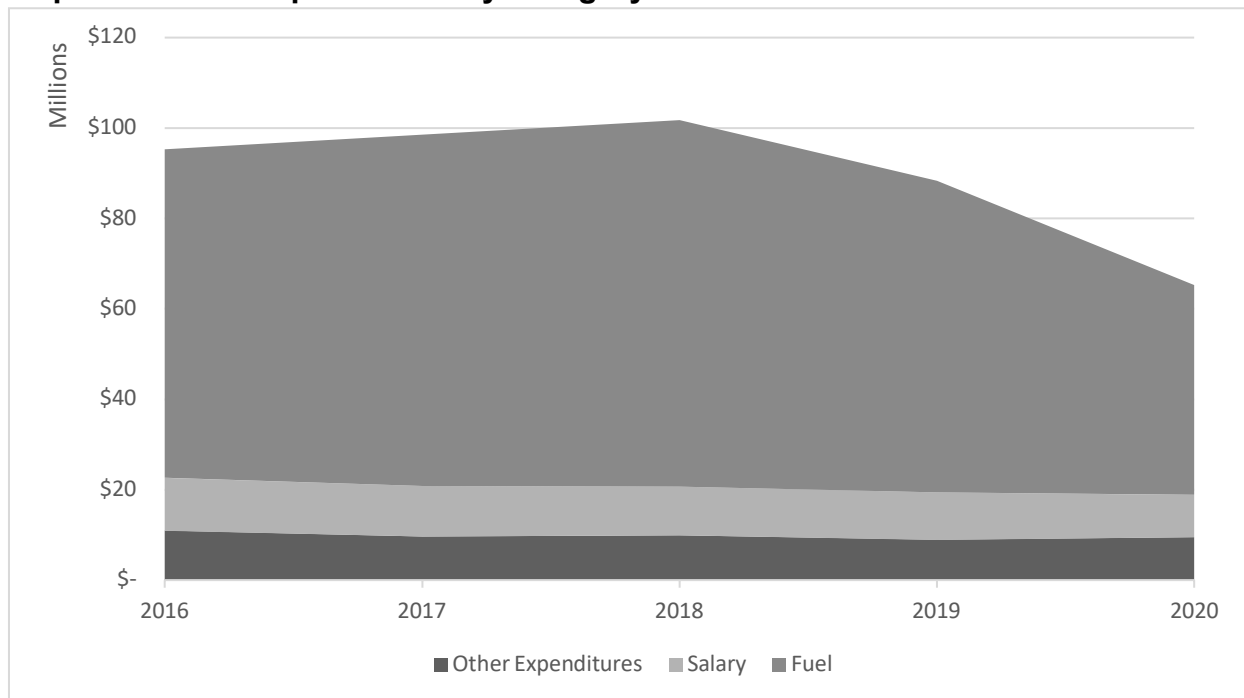
**Table 8.1: Basic Operating Expenses**

	2016	2017	2018	2019	2020
<b>Employees</b>	97	94	90	88	78
<b>Fuel Expenses</b>	\$72,657,234	\$77,691,475	\$81,048,924	\$68,895,327	\$46,345,090
<b>Total Expenses</b>	\$95,288,980	\$98,573,189	\$101,751,415	\$88,361,466	\$65,250,987

Table 8.1: Basic Operating Expenses shows relatively steady expenditures over five years. The dollar figures were drawn from MidAmerican and Alliant Energy’s “Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report” from 2016 to 2020. All dollar figures are shown as reported on the FERC Form 1.

Like all power plants included in this study, the majority of spending is on fuel and salaries at the Ottumwa Generating Station, as presented below in Graph 8.1: Plant Expenditures by Category

**Graph 8.1: Plant Expenditures by Category**



## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that the Ottumwa Generating Station was responsible for **\$43,053,923** in local economic activity in 2020, as presented in the following data in Table 8.2: Local Impact on Industry Output in 2020 (2021 Dollars). This figure does not include electricity sales from the plant. These dollar figures have been inflated to 2021 dollars. Indirect impacts of the plant include all local sales to the power plant itself and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” shows the relative importance of the power plant to that sector. For example, the Ottumwa Generating Station supports **4.88%** of all activity in the Transportation and Warehousing sector in the county.

Based on calculations using the reported total output figures in Table 8.2, a significant portion of the local impacts of the plant, **48%**, are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Finance and Insurance, and Mining.

The inclusion of the Mining sector is due to how proprietors are accounted for in the IMPLAN system. All proprietor data are place-of-residence-based. That is, a well or mine owner who lives in Iowa but whose activities take place in another state will show up in the IMPLAN data as a local proprietor with local sales. Therefore, it is possible to have income from mining, or oil and gas extraction in a county where these activities are not physically taking place. Even if the activities are not local, the income is received by residents of Wapello County and counts as a local economic impact.

Overall, IMPLAN calculates that the Ottumwa Generating Station supports **1.15%** of economic activity in Wapello County in addition to electricity sales.



**Table 8.2: Local Impact on Industry Spending in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$422	\$5,140	\$5,562	0.01%
Mining	\$2,346,106	\$5,958	\$2,352,065	13.59%
Utilities	\$20,408,800	\$178,295	\$20,587,095	8.55%
Construction	\$288,865	\$73,863	\$362,728	0.28%
Manufacturing	\$21,263	\$41,719	\$62,981	0.00%
Wholesale Trade	\$625,161	\$126,703	\$751,863	1.02%
Retail Trade	\$265,161	\$868,724	\$1,133,885	0.67%
Transportation and Warehousing	\$5,668,957	\$176,081	\$5,845,038	4.88%
Information	\$365,271	\$162,824	\$528,095	1.42%
Finance and Insurance	\$1,415,979	\$782,689	\$2,198,667	1.42%
Real Estate and Rental	\$430,845	\$1,237,362	\$1,668,206	0.91%
Prof, Scientific, and Tech Services	\$1,299,145	\$202,526	\$1,501,671	2.12%
Management of Companies	\$151,783	\$44,853	\$196,636	1.05%
Administrative and Waste Services	\$1,160,771	\$133,292	\$1,294,063	1.38%
Educational Services	\$5,264	\$44,281	\$49,545	0.50%
Health and Social Services	\$10	\$1,753,956	\$1,753,967	0.64%
Arts, Entertainment, and Recreation	\$24,036	\$82,165	\$106,200	0.84%
Accommodation and Food Services	\$306,412	\$435,971	\$742,384	0.78%
Other Services	\$172,844	\$424,256	\$597,099	0.69%
Government & non-NAICs	\$1,205,150	\$111,021	\$1,316,171	0.67%
<b>Total</b>	<b>\$36,162,245</b>	<b>\$6,891,679</b>	<b>\$43,053,923</b>	<b>1.15%</b>

## Employment Impacts

According to the IMPLAN model, the Ottumwa Generating Station supports the equivalent of **228.85** jobs in Wapello County, as shown in Table 8.3: Local Employment Impacts in 2020 below. The direct employment numbers represent the **78** individuals reported as employed by the energy companies on the FERC Form 1. For the indirect and induced jobs, the totals indicate the sum of all jobs across the sectors in that industry. A significant portion of jobs supported by the plant are in the Utility sector, at **43%** of the total jobs. This includes those directly employed by the plant as well as those indirectly supported by the plant –mostly in transmission and distribution.

For more information on how these numbers are calculated, see pg. 5.

**Table 8.3: Local Employment Impacts in 2020**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.01	0.07	0.08
Mining	0.00	6.16	0.02	6.18
Utilities	78.00	19.55	0.19	97.75
Construction	0.00	1.34	0.37	1.71
Manufacturing	0.00	0.10	0.10	0.20
Wholesale Trade	0.00	1.42	0.42	1.83
Retail Trade	0.00	2.92	11.09	14.01
Transportation and Warehousing	0.00	19.14	1.65	20.79
Information	0.00	1.15	0.60	1.74
Finance and Insurance	0.00	5.58	3.21	8.79
Real Estate and Rental	0.00	2.51	1.39	3.90
Prof, Scientific, and Tech Services	0.00	9.15	1.60	10.75
Management of Companies	0.00	0.81	0.24	1.05
Administrative and Waste Services	0.00	16.68	1.85	18.52
Educational Services	0.00	0.09	0.92	1.00
Health and Social Services	0.00	0.00	15.95	15.95
Arts, Entertainment, and Recreation	0.00	0.28	1.12	1.40
Accommodation and Food Services	0.00	5.33	6.77	12.10
Other Services	0.00	1.67	4.89	6.55
Government & non-NAICs	0.00	3.96	0.57	4.53
<b>Total</b>	<b>78.00</b>	<b>97.85</b>	<b>53.00</b>	<b>228.85</b>

## Employee Compensation

Employee compensation includes the value of both wages and benefits paid to employees. The Ottumwa Generating Station supports **\$17,624,591** in local employee compensation, as is shown below in Table 8.4: Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **78** Ottumwa Generating Station jobs represent more than half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$12,308,279**, or more than **70%** of total employee compensation supported by the plant, comes from the Utility sector.

**Table 8.4: Local Employee Compensation in 2020 (2021 Dollars)**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$57	\$296	\$353
Mining	\$0	\$4,679	\$199	\$4,878
Utilities	\$9,555,972	\$2,726,620	\$25,687	\$12,308,279
Construction	\$0	\$49,500	\$12,954	\$62,453
Manufacturing	\$0	\$5,657	\$6,134	\$11,790
Wholesale Trade	\$0	\$86,474	\$24,587	\$111,062
Retail Trade	\$0	\$68,665	\$296,697	\$365,361
Transportation and Warehousing	\$0	\$1,528,869	\$63,094	\$1,591,963
Information	\$0	\$51,850	\$25,712	\$77,562
Finance and Insurance	\$0	\$270,151	\$133,825	\$403,976
Real Estate and Rental	\$0	\$28,938	\$15,625	\$44,563
Prof, Scientific, and Tech Services	\$0	\$406,603	\$65,032	\$471,636
Management of Companies	\$0	\$67,795	\$20,034	\$87,829
Administrative and Waste Services	\$0	\$400,434	\$53,217	\$453,651
Educational Services	\$0	\$2,308	\$24,602	\$26,910
Health and Social Services	\$0	\$4	\$847,096	\$847,100
Arts, Entertainment, and Recreation	\$0	\$3,305	\$16,570	\$19,875
Accommodation and Food Services	\$0	\$94,578	\$125,806	\$220,384
Other Services	\$0	\$54,133	\$113,719	\$167,852
Government & non-NAICs	\$0	\$305,342	\$41,772	\$347,114
<b>Total</b>	<b>\$9,555,972</b>	<b>\$6,155,961</b>	<b>\$1,912,658</b>	<b>\$17,624,591</b>

**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 8.5: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including, local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar amounts in property taxes in the future.

School funding is even more complex. Although **2.19%** of the 2020-2021 revenues to the Eddyville-Blakesburg-Fremont School District came from Utility Replacement Tax, even a total loss of this revenue would not result in such a large decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue.

The relative value of the Ottumwa Generating Station to the various taxing authorities is significant in Wapello County. Nearly half of Cass Township’s full budget is funded by the Utility Replacement Tax. In addition to the figures shown in Table 8.5, **\$30,934** was paid to Indian Hills Community College, and **\$6,331** to the Wapello County Extension Office.

**Table 8.5: Value of FYE 2021 Utility Replacement Tax**

	Wapello County	Eddyville-Blakesburg-Fremont School District	Cass Township	Other*	Total
Replacement Funds	\$309,642	\$350,440	\$20,278	\$47,321	\$727,683
Percent of FYE 21 Revenues	1.53%	2.19%	49.04%		

\* Other may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

### Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

Wapello County had the fourth highest response rate of any county included in the study. 109 Wapello residents returned the survey for a response rate of **10.9%**.

**Table 8.6: Wapello County Response Rate**

County	Responses	Response Rate
Wapello County (Ottumwa Generating Station)	109	10.9%
Overall	879	12.6%

### The Respondents

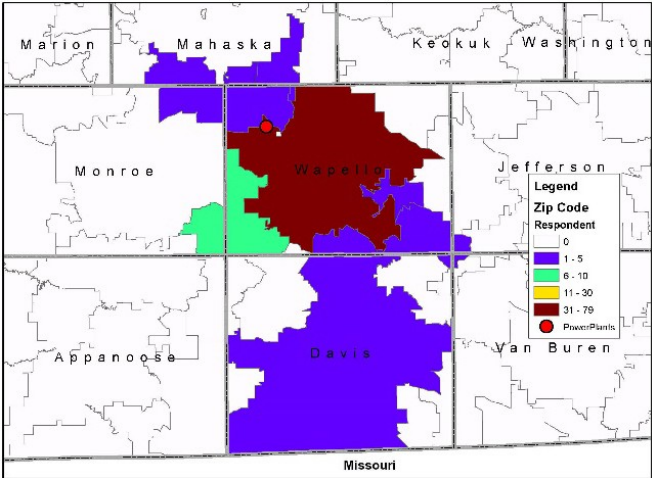
Out of 109 Wapello County respondents, 107 reported the zip codes where they live. Eleven zip codes were represented of which nearly 74% came from zip code 52501, 6% from 52536 and the rest were distributed from other zip codes Table 8.7: Wapello County Zip Codes shows the percentage of respondents by zip code and Figure 8.2: Respondents by Zip Code shows the location of respondents.

There were a few respondents who could potentially reside in nearby counties such as Mahaska, Monroe, Davis, and Jefferson counties. For the purposes of this report, all respondents will be referred to as “Wapello County respondents.”

**Table 8.7: Wapello County Zip Codes**

ZIP Code	Number	Percent
52501	79	73.8%
52536	7	6.5%
52530	5	4.7%
52553	5	4.7%
52554	5	4.7%
52537	2	1.9%
51501	1	0.9%
52505	1	0.9%
52543	1	0.9%
52566	1	0.9%
Total	107	100.0%

**Figure 8.2: Respondents by Zip Code**



**Almost half (45%)** of the Wapello County respondents reported being 65 or older. The sample is older than the actual population, but quite similar to our statewide averages for this survey. All age levels were represented. Average household size is similar to statewide data at 2.3 individuals per household. See Table 8.8: Wapello County Reported Ages for details.

**Table 8.8: Wapello County Reported Ages**

Age	Number	Percent
25-34	12	6.2%
35-44	17	8.8%
45-54	17	8.8%
55-64	46	23.7%
65+	102	52.6%
Total	194	100.0%

Income levels of Wapello County respondents were concentrated from \$35,000 to \$100,000, with the plurality at the \$50,000 to \$74,999 income level. Few of the respondents belong to the lowest and highest income levels. See Table 8.9: Wapello County Reported Household Income for details.

**Table 8.9: Wapello County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	5	5.1%
\$15,000 to \$24,999	5	5.1%
\$25,000 to \$34,999	8	8.1%
\$35,000 to \$49,999	20	20.2%
\$50,000 to \$74,999	26	26.3%
\$75,000 to \$99,999	15	15.2%
\$100,000 to \$149,999	14	14.1%
\$150,000 to \$199,999	5	5.1%
\$200,000 or more	1	1.0%
Total	99	100.0%

## Community Characteristics

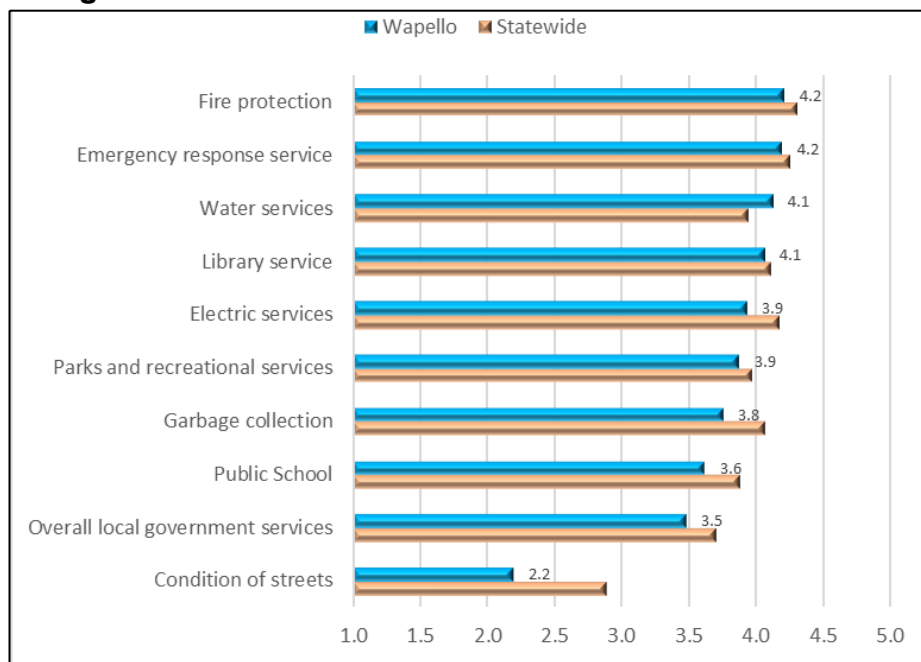
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including the City of Agency in Wapello County.<sup>1</sup> The nearby cities of Albia and University Park are also part of that study. We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor to 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective to 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Wapello County respondents perceived most public services as good or very good. Graph 8.2: Ratings of Local Public Services below shows the ratings, condition of streets got the lowest rating.

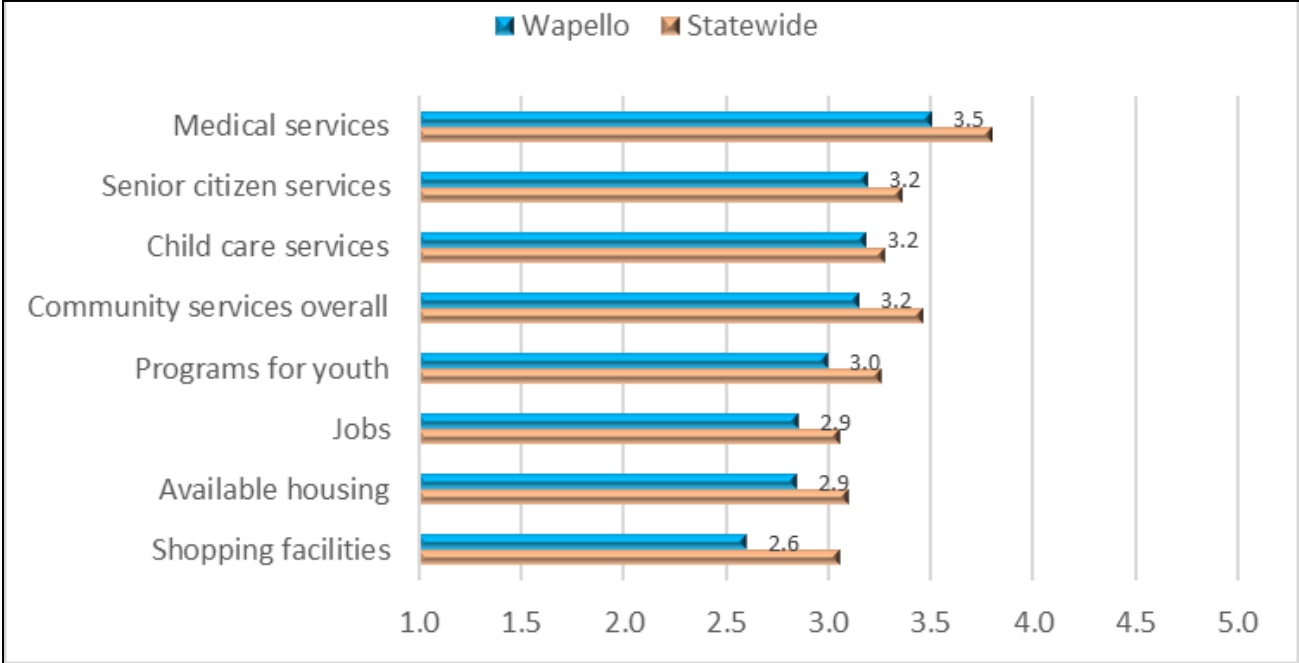
**Graph 8.2: Ratings of Local Public Services**



<sup>1</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.

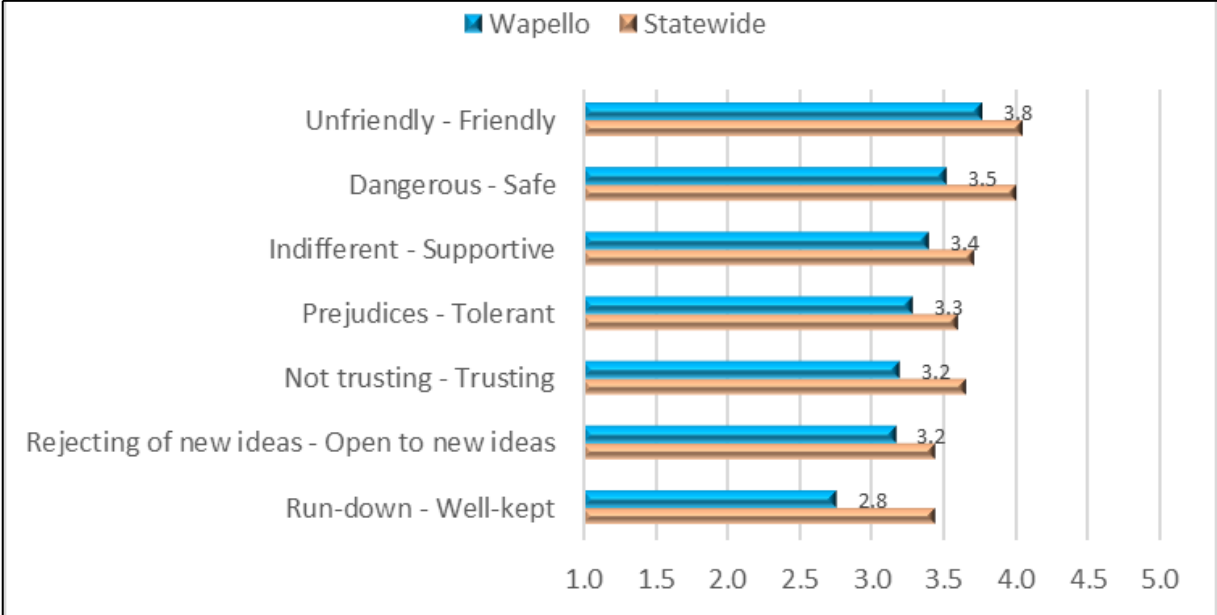
Non-government services were generally not rated as highly. All scored below the state average. Still, most services were rated “good.” See Graph 8.3: Ratings of Local Non-Governmental Services.

**Graph 8.3: Ratings of Local Non-Governmental Services**



Graph 8.4 shows the adjectives that Wapello County respondents used to describe their community. Their ratings were more negative overall compared to the statewide averages.

**Graph 8.4: Adjectives Describing the Community**

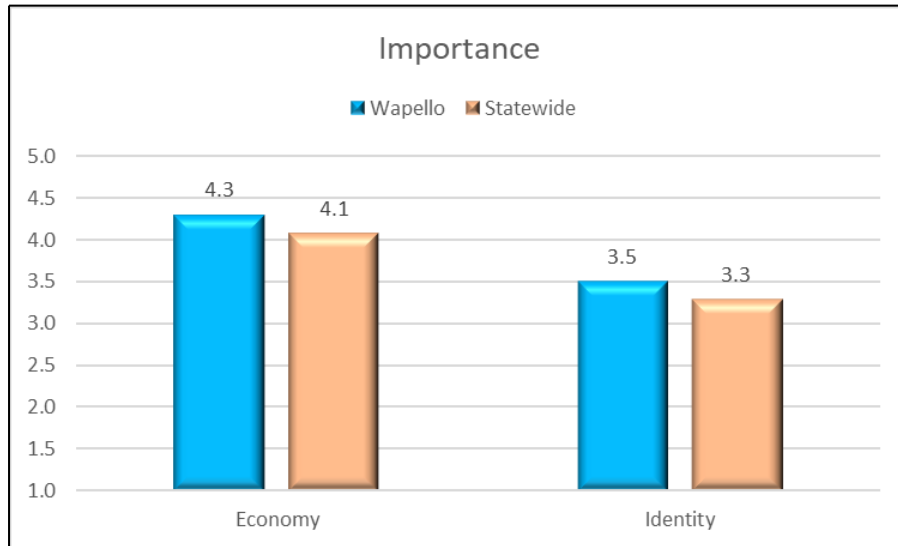




### Perceived Local Impacts of Ottumwa Generating Station

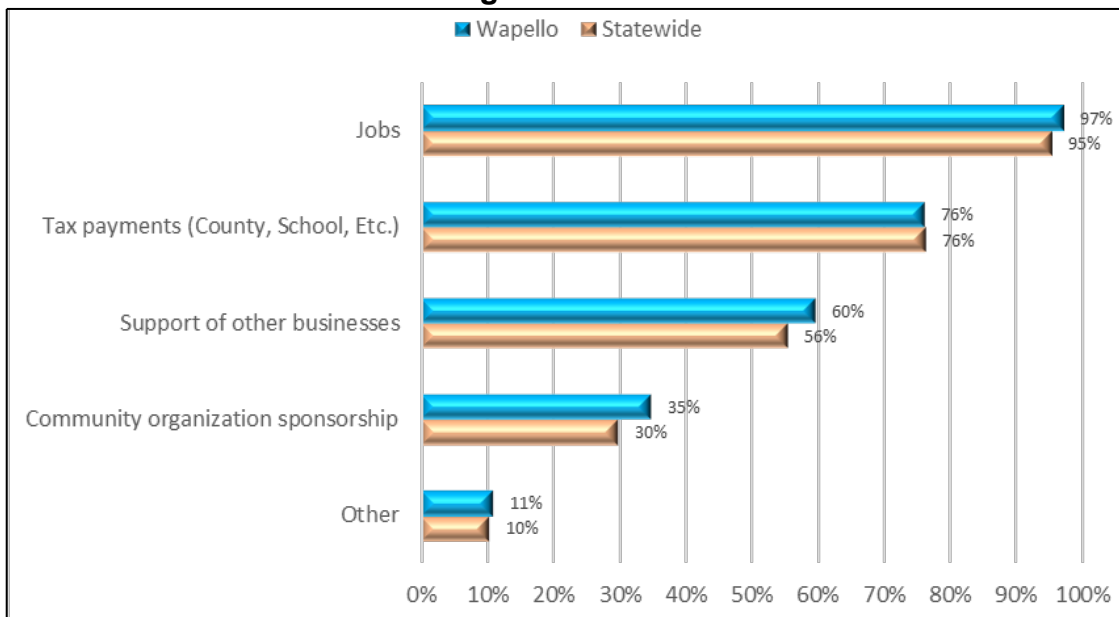
On a scale of 1 – 5 (1 being not at all important to 5 as extremely important), respondents in Wapello County saw Ottumwa Generating Station as being more important to their area’s economy and identity relative to state averages. See Graph 8.5: Local Importance of the Generating Station for more details.

**Graph 8.5: Local Importance of the Generating Station**



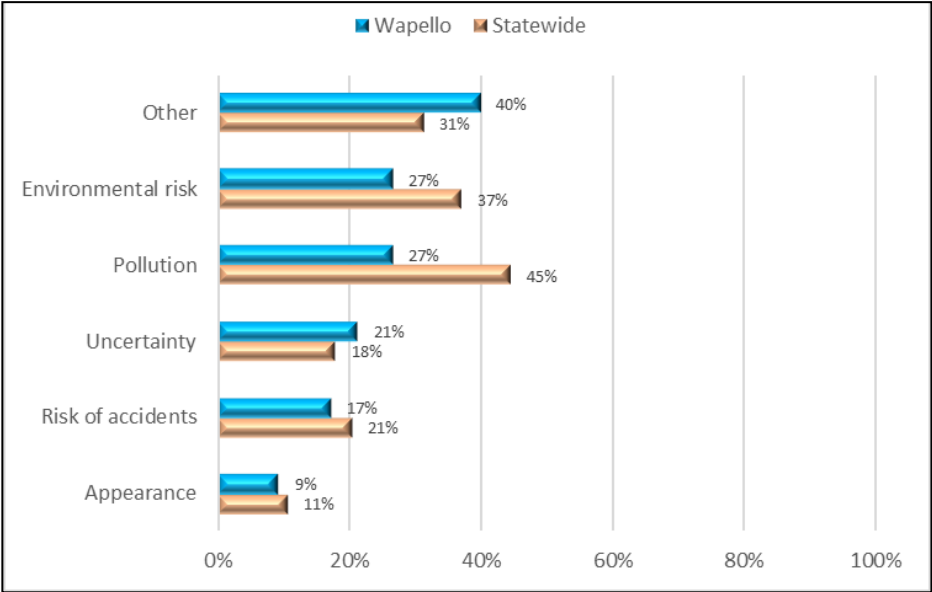
Compared to the statewide data, Wapello County respondents perceived higher benefits from the power plant in their community. Per Graph 8.6: Benefits of the Generating Station, almost all stated “jobs” as the greatest benefit of having the power plant in their community, followed by “tax payment (county, school, etc.)”, and “support to other businesses”.

**Graph 8.6: Benefits of the Generating Station**



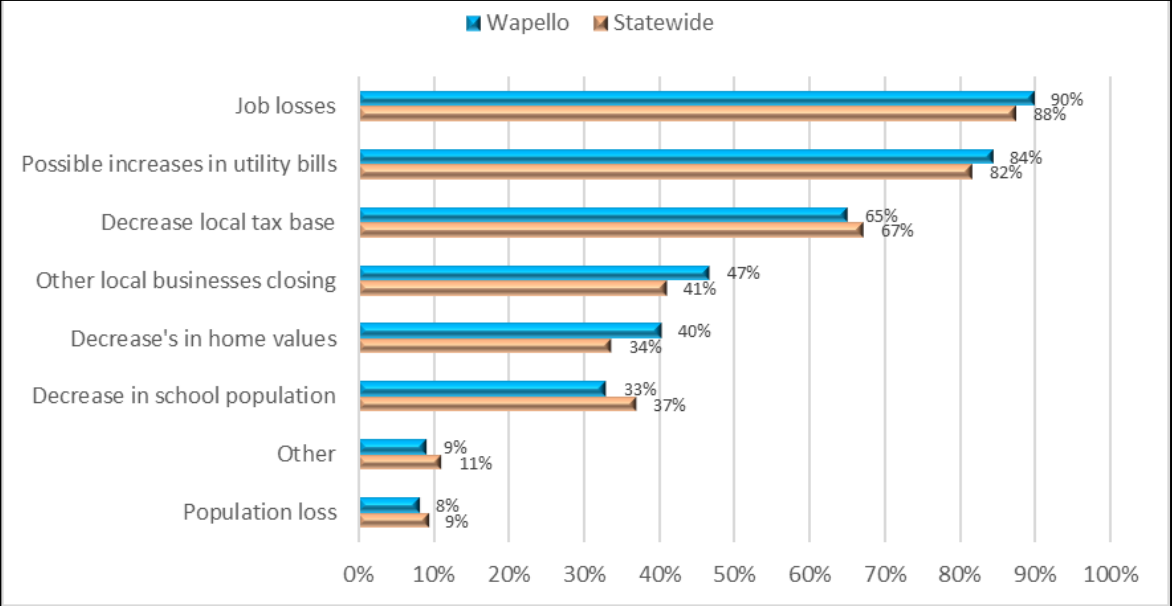
Residents also were less likely to perceive negative local effects due to the presence of the Ottumwa Generating Station compared to statewide averages. Graph 8.7: Negative Effects of the Generating Station show that respondents perceived fewer negative effects of across the board apart from “uncertainty”. Many who responded “other” wrote that they saw no negative effects.

**Graph 8.7: Negative Effects of the Generating Station**



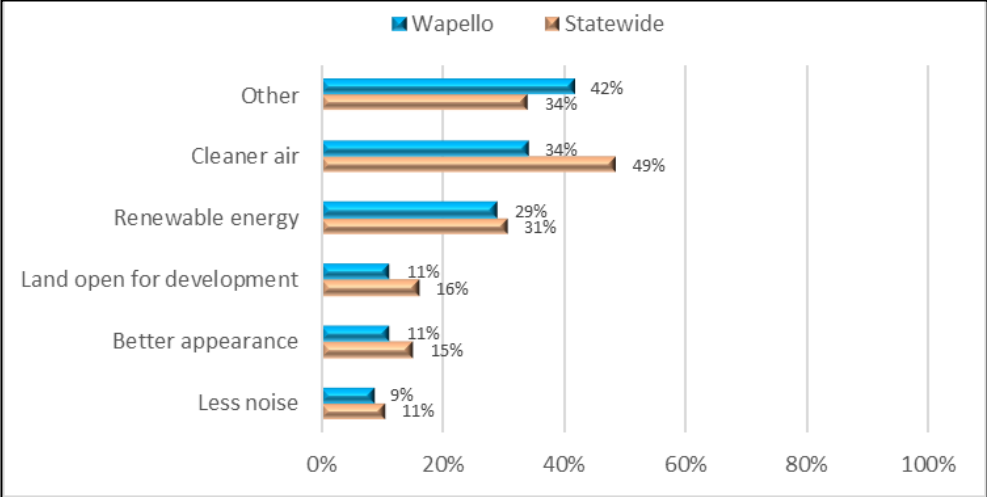
If the Ottumwa Generating Station were to close, concerns of the Wapello County respondents were higher compared to the statewide data in several areas: “job losses”, “possible increases in utility bills”, “other local business closing”, and “decrease in home values”. Graph 8.8: Concerns about Closure provides more details.

**Graph 8.8: Concerns about Closure**



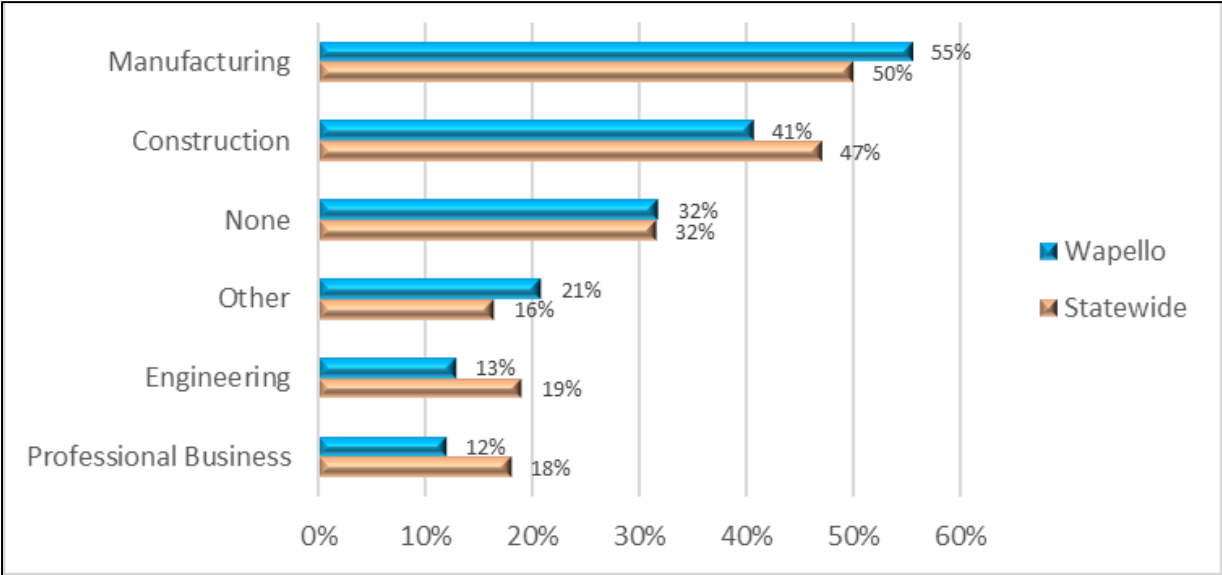
If the Ottumwa Generating Station were to close, residents of Wapello County were less likely to expect potential positive effects compared to the statewide averages per Graph 8.9: Positive Effects of Closure.

**Graph 8.9: Positive Effects of Closure**



Residents of Wapello County were mixed in terms of their beliefs that there would be local jobs available to Ottumwa Generating Station workers. About **32%** of believed that there would be no local jobs available for the employees of the Ottumwa Generating Station. See Graph 8.10: Other Jobs Available for Power Plant Workers for details.

**Graph 8.10: Other Jobs Available for Power Plant Workers**



## Focus Groups and Key Informant Interviews

We held a focus group with six key informants in Wapello County. The participants included economic development staff, a representative of a local philanthropic organization, a school employee, and residents who lived near the plant. Following our interview script (see **Appendix 2**) we asked the participants their views on 1) Benefits of the Ottumwa Generating Station for the local area; 2) Drawbacks or any negative effects the plant might have; and 3) Thoughts about the future of the plant.

### Benefits

The quality of the local jobs at the plant were the first benefit mentioned. One shared salary information that he had received from a former employee **“The lowest paid position there is \$29.49 an hour. That’s the lowest salary. I knew they paid well [...] A former employee told me that if you’re working as a blue-collar worker that is the premier place to work. I see those 100 people, if you didn’t have the power plant, what are you going to have them do?”** Another shared that a family member had worked in the plant, **“My father-in-law is a retiree from that power plant and he has nothing but good to say about it. Those jobs there have supported a lot of the families in this community.”** One school staff member shared the importance of having jobs like that in the county, **“Kids need to know that jobs like that exist in the area. It is a destination.”**

Representatives of the local economic development corporation shared that they have a good relationship with Alliant and that they had funded several local projects, **“From an economic development standpoint Alliant Energy does a lot of projects with us. We have LED lights on the Jefferson Bridge that turn different colors because of the Hometown Rewards program.”**

A resident who lived near the plant shared that they had not experienced any negative effects of the plan. **“They’ve added a new scrubber system. You see that smoke stack? That’s primarily steam. [...] They’ve got peregrine falcons nesting out there. That’s pretty neat. For a power plant they’re pretty environmentally friendly, and I only live two miles from it.”**

Another benefit mentioned was the Utility Replacement Tax received locally. **“They create a much larger tax base for the school district. We have a totally different tax base from other schools our size. Our property tax rates are much lower because of it.”**

They also mentioned that several local companies service the plant regularly. **“I know that [two companies] locally are out there a lot. I live close and their service vehicles are out there [...] all the time. [...] One is construction and the other is a maintenance company.”** Another added **“I think they use local labor whenever they can.”**

## **Drawbacks**

None of the participants mentioned any drawbacks to the plant being located in the area. When prompted a resident commented on how little pollution he believed the plant was giving off. **“You very seldom see anything that would remotely resemble coal dust coming off of it.”**

## **Future**

Participants were very confident that the plant would be a part of Wapello County for the foreseeable future. **“I would expect that the power plant would stay for a very long time. Technology keeps moving us forward in the cleanliness of the coal burning process, and it is by far one of the cheapest ways to fuel the nation. How many windmills does it take to do what that one plant does in one location? I’m expecting that it will always be there in some form or fashion.”**

Others cited recent investments in the plant as a sign of a commitment to keeping the plant open. **“Obviously Alliant four or five years ago spent \$150 million upgrading the plant for the emissions. I would expect that it will continue to be around.”**

Another went further, believing it was more likely that the plant would grow. **“If anything, I could see it expanding. They’ve put so much money into it recently. I could see it expanding with demand. I think the future is bright for it, myself.”**

When asked what their thoughts would be if they heard tomorrow that the plant was going to close, the first thought was for the current employees of the plant, **“If they were to close where are we going to put those people where they would be able to make similar wages?”**

School funding was another concern, **“The financial impact on the school would be that it would automatically raise the taxes on other property in the area.”**

Another major concern raised by a school employee was the possibility of higher electric rates. **“What would new costs be per hour? Consumption of electricity per pupil is rising in schools.”**

In responding to Alliant Energy’s “Iowa Clean Energy Blueprint” that sets a goal of ending the use of coal for energy production by 2040 the participants expressed doubts, **“I couldn’t see a Midwestern state going coal free. I think anything that they are saying now about closing in 20 years is just responding to the current political environment.”**

## Woodbury County (George Neal #3 and #4)

### Plant Characteristics (#3, North)

**Owner:** MidAmerican Energy 72% Interstate Power and Light (Alliant Energy) 28%

**Plant Nameplate Capacity:** 584.1MW (megawatts)

**Number of Employees (2020):** 77

### Plant Characteristics (#4, South)

**Owner:** MidAmerican Energy 40.57%, Interstate Power and Light 25.7%, Corn Belt Power Cooperative 8.7%, Northwestern Public Service Company 8.68%, Northwest Iowa Power Cooperative 4.86%, Algona Municipal Utilities 2.94%, Webster City Municipal Utilities 2.6%, Cedar Falls Utilities 2.5%, the remaining 3.46% is held by other municipal utilities including Bancroft, Coon Rapids, Graettinger, Grundy Center, Laurens, Milford, Spencer.

**Plant Nameplate Capacity:** 695.9MW (megawatts)

**Number of Employees (2020):** 97

George Neal North and South are located along the Missouri River in rural Woodbury County approximately two miles apart from one another. George Neal North is approximately six miles south of the City of Sergeant Bluff and George Neal South is located approximately four miles west of the City of Salix. Figure 9.1 displays an aerial view of both plants. This image was taken August 27, 2019, as part of the National Agriculture Imagery Program (NAIP) through the United States Department of Agriculture Farm Agency

**Figure 9.1: Aerial Photograph of George Neal North and South**



## Plant Expenditures and Employment

The George Neal North and South Generating Stations are reported separately on MidAmerican and Alliant Energy’s FERC Form 1. For the purposes of economic impact reporting we have combined the impacts of the two units. Both plants have experienced declines in staffing over the past five years of **9.4%** (from 85 to 77) for George Neal North and **8.5%** (106 to 97) for George Neal South. They have also reduced total expenditures by **39%** and **51%** respectively.

**Table 9.1: Basic Operating Expenses (Unit #3, North)**

	2016	2017	2018	2019	2020
<b>Employees</b>	85	81	81	82	77
<b>Fuel Expenses</b>	\$32,610,884	\$39,777,990	\$40,618,164	\$29,324,481	\$12,930,235
<b>Total Expenses</b>	\$48,835,125	\$59,828,974	\$72,575,821	\$48,585,518	\$29,639,999

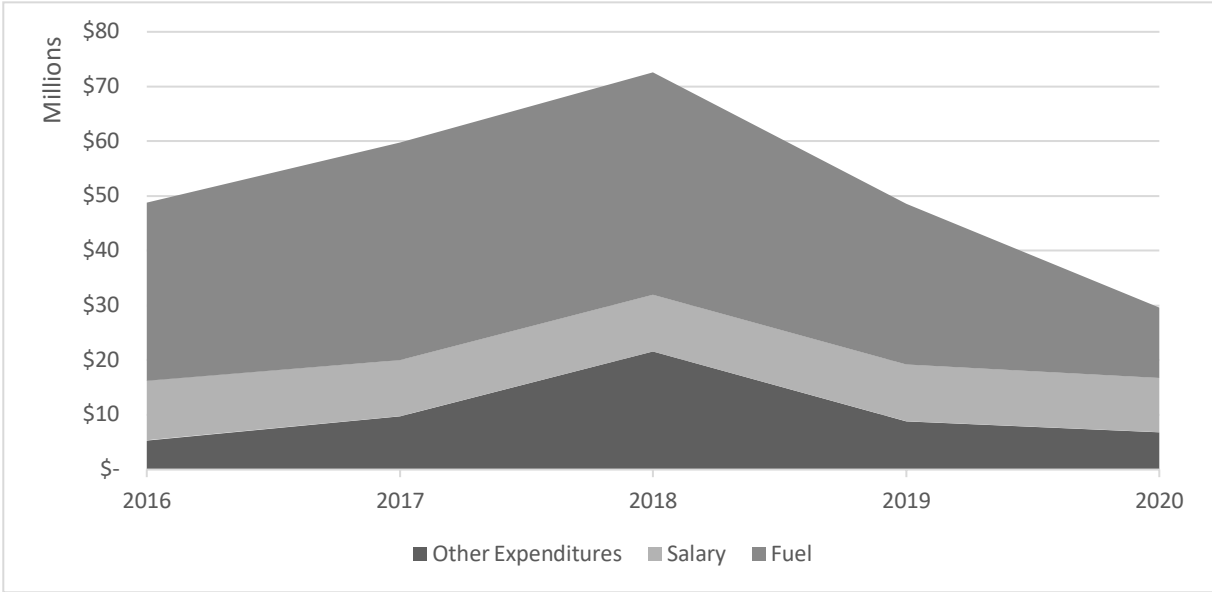
**Table 9.2: Basic Operating Expenses (Unit #4, South)**

	2016	2017	2018	2019	2020
<b>Employees</b>	106	100	103	103	97
<b>Fuel Expenses</b>	\$48,440,171	\$48,567,026	\$54,224,877	\$28,434,828	\$14,313,333
<b>Total Expenses</b>	\$69,948,276	\$69,034,231	\$77,278,900	\$62,142,285	\$34,579,306

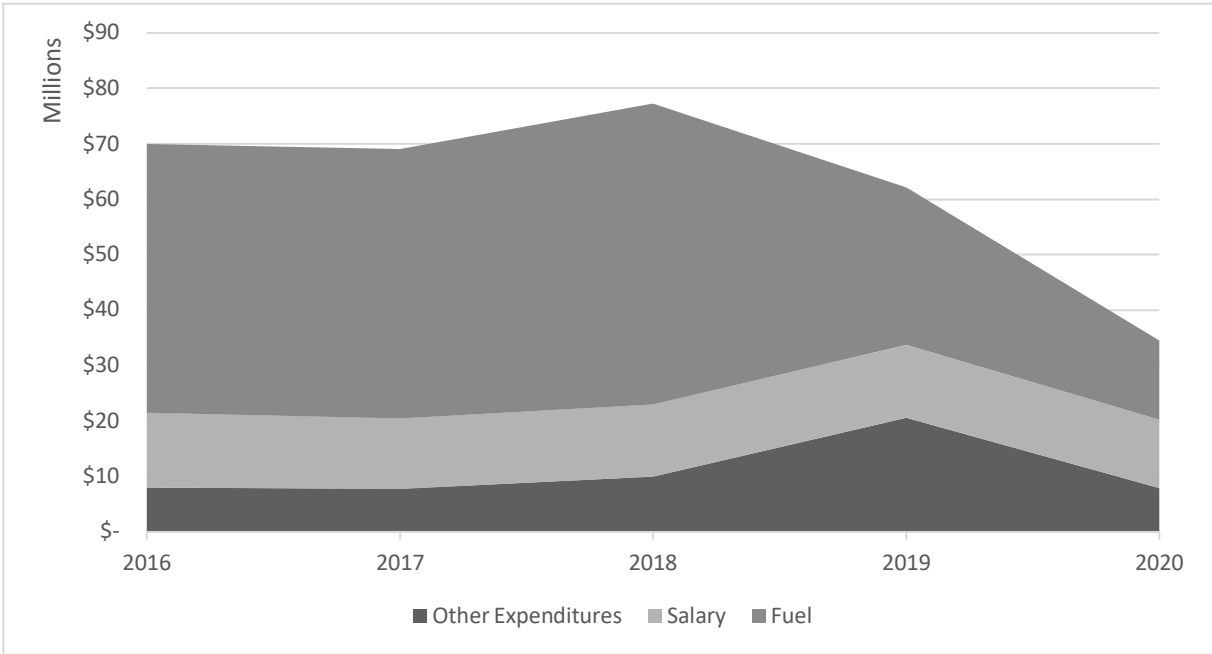
Tables 9.2 and 9.3: Basic Operating Expenses for Unit #3, North and Unit #4, South (respectively) show this decline over the past five years. The dollar figures were drawn from MidAmerican and Alliant Energy’s “Federal Energy Regulatory Commission Form 1 - Electric Utility Annual Report” from 2016 to 2020. All dollar figures are shown as reported on the FERC Form 1. For George Neal South, we assumed that the other minority owners had expenses and employment, proportionate to their ownership stake.

Like all power plants included in this study, the majority of spending is on fuel and salaries at both George Neal North and South, as presented in Graphs 9.1 and 9.2: Plant Expenditures by Category.

**Graph 9.1 – Plant Expenditures by Category (Unit #3, North)**



**Graph 9.2: Plant Expenditures by Category (Unit #4, South)**





## Industry Output

The Economic Impact Analysis for Planning (IMPLAN) model calculates that George Neal North and South was responsible for **\$118,668,533** in local economic activity in 2020, as presented in Table 9.3 Local Impact on Industry Spending in 2020 (2021 Dollars). This figure does not include electricity sales from the George Neal North and South. These dollar figures have been inflated to 2021 dollars. Indirect impacts of the plant include all local sales to the power plant itself and the chain of local sales that those purchases trigger. Induced impacts include all household spending of power plant employees and other local jobs supported by the power plant. For more information on how these figures are calculated, see pg. 5.

The column labeled “Percentage of Total Local Sector” shows the relative importance of the power plant to that sector. For example, George Neal North and South support **3.95%** of all activity in the Transportation and Warehousing sector in the county.

Based on calculations using the reported total output figures in Table 9.3, a significant portion of the local impacts of the plant, **37%**, are in the utility sector. This is largely due to the fact this sector includes the economic activity associated with Electric Power Transmission and Distribution. IMPLAN calculates expenditures and employment in transmission and distribution separately from the power plants themselves. Other significantly affected sectors include Transportation and Warehousing, Mining, and Administrative and Waste Services.

The inclusion of the Mining sector is due to how proprietors are accounted for in the IMPLAN system. All proprietor data are place-of-residence-based. That is, a well or mine owner who lives in Iowa but whose activities take place in another state will show up in the IMPLAN data as a local proprietor with local sales. Therefore, it is possible to have income from mining, or oil and gas extraction in a county where these activities are not physically taking place. Even if the activities are not local, the income is received by residents of Woodbury County and counts as a local economic impact.

Overall, IMPLAN calculates that the George Neal North and South support **0.94%** of economic activity in Woodbury County in addition to the revenues of the plant itself.

**Table 9.3: Local Impact on Industry Output in 2020 (2021 Dollars)**

Sector	Indirect	Induced	Total	Percentage of Total Local Sector
Ag, Forestry, Fishing & Hunting	\$2,087	\$15,671	\$17,758	0.01%
Mining	\$5,452,789	\$9,378	\$5,462,167	37.19%
Utilities	\$43,857,047	\$427,801	\$44,284,848	9.54%
Construction	\$1,133,088	\$271,818	\$1,404,905	0.23%
Manufacturing	\$520,955	\$159,513	\$680,468	0.01%
Wholesale Trade	\$2,666,860	\$1,035,128	\$3,701,988	0.55%
Retail Trade	\$669,185	\$2,729,405	\$3,398,589	0.58%
Transportation and Warehousing	\$16,790,617	\$563,317	\$17,353,934	3.95%
Information	\$1,410,429	\$760,448	\$2,170,878	0.97%
Finance and Insurance	\$3,656,326	\$2,000,431	\$5,656,757	1.17%
Real Estate and Rental	\$1,620,033	\$4,265,785	\$5,885,817	0.71%
Prof, Scientific, and Tech Services	\$4,153,950	\$719,371	\$4,873,321	1.50%
Management of Companies	\$794,241	\$255,833	\$1,050,074	0.97%
Administrative and Waste Services	\$6,433,148	\$672,525	\$7,105,674	2.47%
Educational Services	\$27,859	\$285,032	\$312,891	0.48%
Health and Social Services	\$104	\$4,933,228	\$4,933,332	0.52%
Arts, Entertainment, and Recreation	\$119,489	\$358,635	\$478,124	0.77%
Accommodation and Food Services	\$1,005,880	\$1,394,848	\$2,400,728	0.60%
Other Services	\$532,738	\$1,500,089	\$2,032,827	0.54%
Government & non-NAICs	\$4,963,971	\$499,482	\$5,463,454	0.80%
<b>Total</b>	<b>\$95,810,795</b>	<b>\$22,857,738</b>	<b>\$118,668,533</b>	<b>0.94%</b>

## Employment Impacts

According to the model, George Neal North and South support the equivalent of **653.89** jobs in Woodbury County, as shown in Table 9.4: Local Employment Impacts in 2020. The direct employment numbers represent the **174** individuals reported as employed by the energy companies on the FERC Form 1. For the indirect and induced jobs, the totals indicate the sum of all jobs across the sectors in that industry. About **33%** of the total jobs supported by the plant are in the Utility sector. This includes those directly employed by the plant as well as those indirectly supported by the plant – mostly in transmission and distribution.

For more information on how these numbers are calculated, see pg. 5.

**Table 9.4: Local Employment Impacts in 2020**

Sector	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	0.00	0.01	0.08	0.09
Mining	0.00	14.40	0.03	14.42
Utilities	174.00	42.69	0.43	217.12
Construction	0.00	5.21	1.31	6.51
Manufacturing	0.00	0.97	0.37	1.34
Wholesale Trade	0.00	6.93	3.54	10.46
Retail Trade	0.00	7.02	33.35	40.37
Transportation and Warehousing	0.00	51.00	5.65	56.65
Information	0.00	3.66	2.07	5.73
Finance and Insurance	0.00	13.74	8.27	22.01
Real Estate and Rental	0.00	8.38	6.70	15.08
Prof, Scientific, and Tech Services	0.00	26.02	4.65	30.67
Management of Companies	0.00	3.61	1.16	4.78
Administrative and Waste Services	0.00	83.73	8.62	92.35
Educational Services	0.00	0.39	5.04	5.43
Health and Social Services	0.00	0.00	41.91	41.91
Arts, Entertainment, and Recreation	0.00	2.20	5.02	7.22
Accommodation and Food Services	0.00	16.34	21.16	37.50
Other Services	0.00	5.19	18.29	23.48
Government & non-NAICs	0.00	18.33	2.43	20.76
<b>Total</b>	<b>174.00</b>	<b>309.80</b>	<b>170.09</b>	<b>653.89</b>

## Employee Compensation

Employee compensation includes the value of both wages and benefits paid to employees. George Neal North and South support **\$48,767,508** in local employee compensation, as is shown below in Table 9.5: Local Employee Compensation in 2020 (2021 Dollars). Although more jobs are generally supported outside of the power plants than within them, the **174** jobs at George Neal North and South represent nearly half of the total employee compensation supported. Including the jobs in transmission and distribution, **\$29,323,103**, or more than **60%** of total employee compensation supported by the plant, is paid to employees of the utility industry.

For more information on how these numbers are calculated, see pg. 5.

**Table 9.5: Local Employee Compensation in 2020 (2021 Dollars)**

Industry	Direct	Indirect	Induced	Total
Ag, Forestry, Fishing & Hunting	\$0	\$234	\$1,197	\$1,431
Mining	\$0	\$3,843	\$497	\$4,339
Utilities	\$22,683,676	\$6,574,145	\$65,283	\$29,323,103
Construction	\$0	\$239,941	\$58,208	\$298,149
Manufacturing	\$0	\$86,849	\$23,460	\$110,309
Wholesale Trade	\$0	\$500,356	\$255,679	\$756,034
Retail Trade	\$0	\$175,595	\$908,736	\$1,084,331
Transportation and Warehousing	\$0	\$5,097,292	\$191,111	\$5,288,403
Information	\$0	\$216,966	\$109,420	\$326,386
Finance and Insurance	\$0	\$743,855	\$375,179	\$1,119,034
Real Estate and Rental	\$0	\$135,740	\$78,854	\$214,594
Prof, Scientific, and Tech Services	\$0	\$1,294,694	\$212,717	\$1,507,412
Management of Companies	\$0	\$407,805	\$131,358	\$539,163
Administrative and Waste Services	\$0	\$2,322,835	\$259,656	\$2,582,490
Educational Services	\$0	\$13,409	\$173,373	\$186,783
Health and Social Services	\$0	\$47	\$2,491,358	\$2,491,405
Arts, Entertainment, and Recreation	\$0	\$16,628	\$77,544	\$94,172
Accommodation and Food Services	\$0	\$355,559	\$455,945	\$811,505
Other Services	\$0	\$237,467	\$628,155	\$865,621
Government & non-NAICs	\$0	\$1,017,478	\$145,364	\$1,162,842
<b>Total</b>	<b>\$22,683,676</b>	<b>\$19,440,737</b>	<b>\$6,643,096</b>	<b>\$48,767,508</b>

**Utility Replacement Tax Impacts**

The full values of the Utility Replacement Tax paid to local governments entities in the 2020-2021 fiscal year can be seen in Table 9.6: Value of FYE 2021 Utility Replacement Tax. These amounts change from year to year based on a number of factors including, local levy rates, utility excise tax dollars payed statewide, and the central assessment of the value of the power plant.

The loss of the power plant will not result in the full loss of this revenue. If a plant ceases to operate, Utility Replacement Tax will no longer be paid; however, the site will begin to be taxed as normal property. If a plant is removed entirely, the reduction in payments to local governments may be significant. However, a site that is redeveloped may continue to pay similar or even higher property tax rates in the future.

Although **4.78%** of the Westwood and **3.21%** of Sargent Bluff Luton School District’s 2020-2021 revenues came from utility replacement tax, even a total loss of this revenue would not result in such a large decrease in school funding. State funding and increases in local property taxes will make up the majority of the difference from the loss of Utility Replacement Tax revenue.

In addition to the figures shown in Table 9.6, **\$73,119** was paid to Liberty Township, **\$39,691** to Western Iowa Tech Community College, and **\$14,879** to the Woodbury County Extension Office.

**Table 9.6: Value of FYE 2021 Utility Replacement Tax**

	Woodbury County	Sargent Bluff-Luton School District	Westwood School District	Other*	Total
Replacement Funds	\$1,300,942	\$864,106	\$498,202	\$232,050	\$2,895,299
Percent of FYE 21 Revenues	1.95%	3.21%	4.78%	N/A	

\* Other may include County Assessor Fees, Agricultural Extension, Community College, County Tuberculosis and Brucellosis Funds.

For more details on how these amounts are calculated see pg. 7.

## Community Survey Findings

To better understand the attitudes and concerns of the community as a whole, we mailed a 2-page survey to a randomly selected sample of 1,000 households in each county. An online version of the survey was also available for survey respondents.

96 Woodbury County residents returned the survey for a response rate of **9.6%**.

**Table 9.7: Woodbury County Response Rate**

County	Responses	Response Rate
Woodbury County (George Neal North and South)	96	9.6%
Overall	879	12.6%

### The Respondents

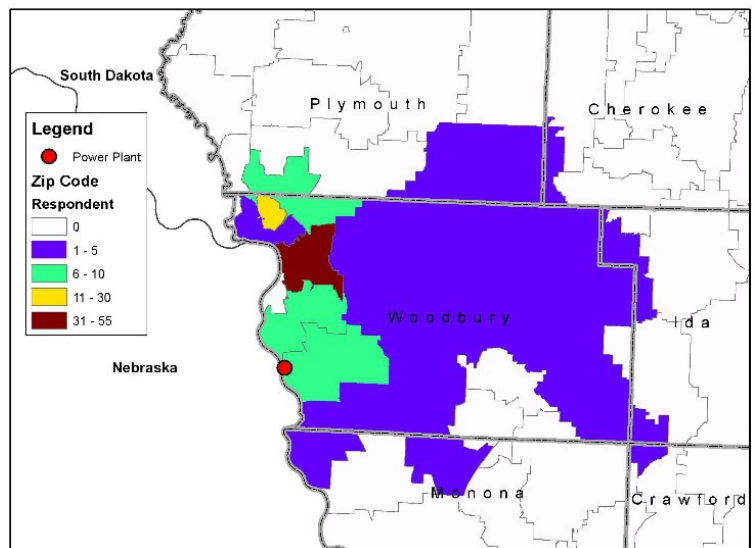
Out of the 96 Woodbury County respondents, 92 reported the zip codes where they live. Twenty-one zip codes were represented of which more than one-third came from zip code 51106, 14% from 51104 and the rest were distributed among other zip codes. Table 9.8: Woodbury County Zip Codes shows the percentage of respondents by zip code and Figure 9.3: Respondents by Zip Code shows the location of respondents.

There were a few respondents who could potentially reside in nearby counties such as Plymouth, Cherokee, Ida, Crawford and Monona counties. For this report, all respondents will be referred to as “Woodbury County respondents.”

**Table 9.8: Woodbury County Zip Codes**

Zip code	Number	Percent
51106	31	33.7%
51104	13	14.1%
51054	9	9.8%
51108	8	8.7%
51052	6	6.5%
51030	4	4.3%
51039	4	4.3%
51007	3	3.3%
51055	2	2.2%
51103	2	2.2%
Others	10	10.9%
Total	92	100.0%

**Figure 9.3: Woodbury County Zip Codes**



**Almost half** of the Woodbury County respondents were aged 65 or older. This is similar to our statewide averages for this survey, but older than the state as a whole. All age levels were represented. Average household size, 2.6 individuals per household, is larger than the statewide average of 2.3. See Table 9.9: Woodbury County Reported Ages for details.

**Table 9.9: Woodbury County Reported Ages**

Age	Number	Percent
18-24	1	1.1%
25-34	2	2.2%
35-44	13	14.0%
45-54	10	10.8%
55-64	21	22.6%
65+	46	49.5%
Total	93	100.0%

Income levels of Woodbury County respondents were well distributed from \$15,000 up to \$150,000 income levels, with the highest percentage at the \$75,000 to \$99,999 income level. See Table 9.10: Woodbury County Reported Household Income below.

**Table 9.10: Woodbury County Reported Household Income**

Household Income	Number	Percent
Under \$15,000	4	4.8%
\$15,000 to \$24,999	9	10.7%
\$25,000 to \$34,999	5	6.0%
\$35,000 to \$49,999	7	8.3%
\$50,000 to \$74,999	15	17.9%
\$75,000 to \$99,999	18	21.4%
\$100,000 to \$149,999	13	15.5%
\$150,000 to \$199,999	10	11.9%
\$200,000 or more	4	4.8%
Total	85	10.7%

## Community Characteristics

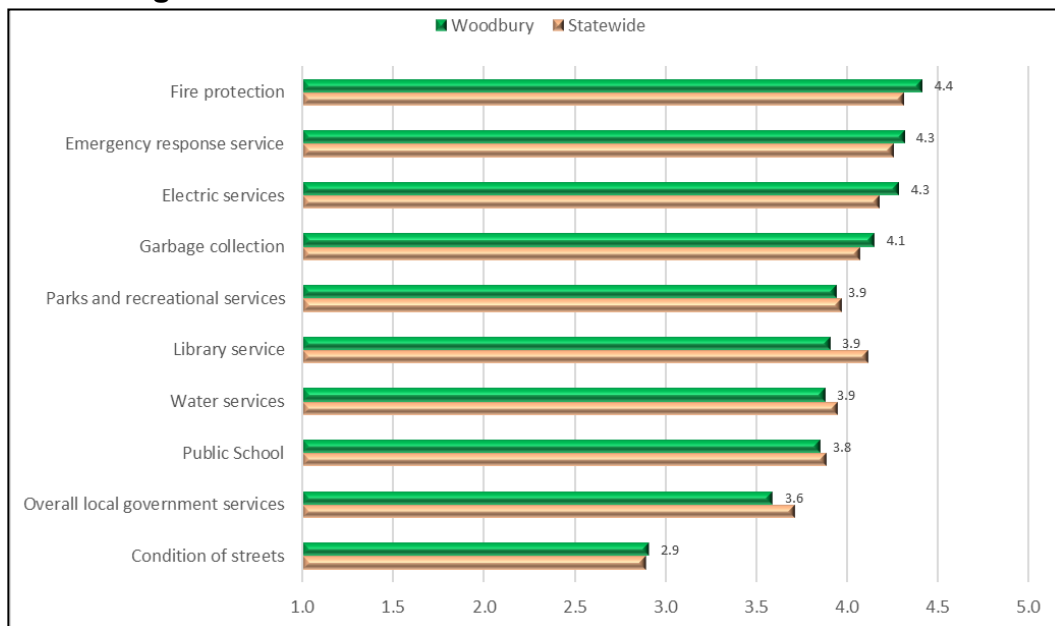
In addition to asking questions about residents' thoughts and opinions of the power plants, we asked about basic community satisfaction. These questions were based off of the questions used in the Iowa Small Town Poll. The Iowa Small Town poll has been conducted since 1994 in 99 communities including the City of Correctionville in rural Woodbury County.<sup>1</sup> We chose these questions to allow for comparisons with the responses to the Iowa Small Town Poll over the past 27 years. Every county in this study contains a community that has participated in the poll.

These questions assess resident satisfaction across a variety of services. The community services are grouped into public and private services. Respondents were asked to rate services using a scale of 1 to 5 (1 being very poor to 5 very good). A series of questions also measure the respondents' perceptions of their communities using adjectives. Community adjectives rated from 1 to 5 (1 being for the negative adjective to 5 for the positive adjective).

The responses to these questions provide a snapshot of each county's residents' current levels of community satisfaction. As some of these communities experience change over the coming years, these results can serve as a baseline to evaluate the effect on residents.

Woodbury County respondents perceived all the local public services as good/very good except for "condition of streets". Four services were scored higher than the statewide averages (fire protection, emergency response, electrical and garbage services). Graph 9.3: Ratings of Local Public Services below shows the ratings, with "fire protection" and "emergency response service" rated the highest.

**Graph 9.3: Ratings of Local Public Services**

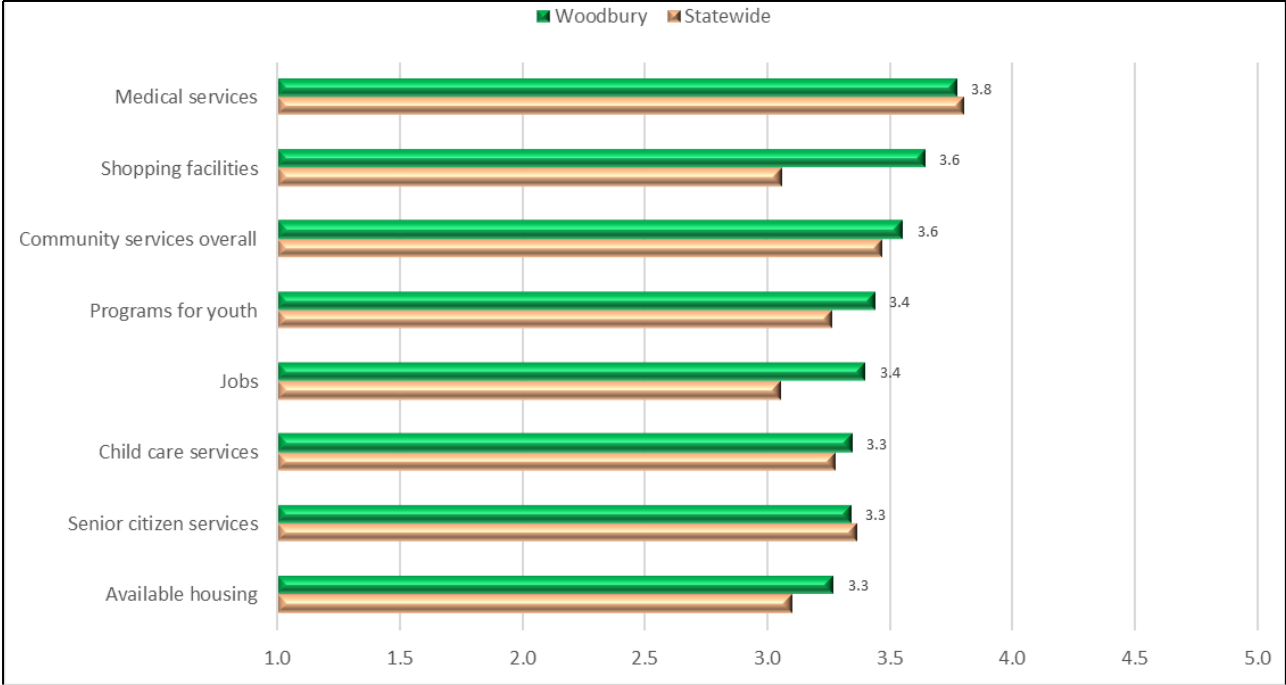


<sup>1</sup> See <https://smalltowns.soc.iastate.edu> for more information about the Iowa Small Town Project.



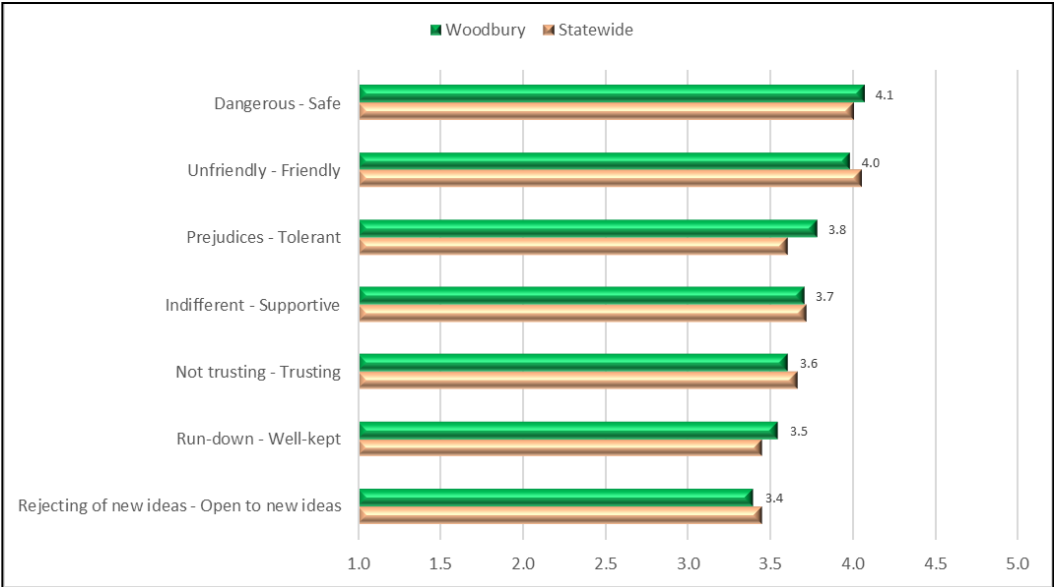
All of the non-government services ratings were generally scored higher than statewide averages. Graph 9.4: Ratings of Local Non-Governmental Services below shows that “medical services” got the highest rating while “available housing” got the lowest.

**Graph 9.4: Ratings of Local Non-Governmental Services**



Graph 9.5 shows that the communities where Woodbury County respondents live were perceived to be “safe”, “friendly”, “tolerant”, “supportive”, and “trusting”. Overall rankings were similar statewide averages.

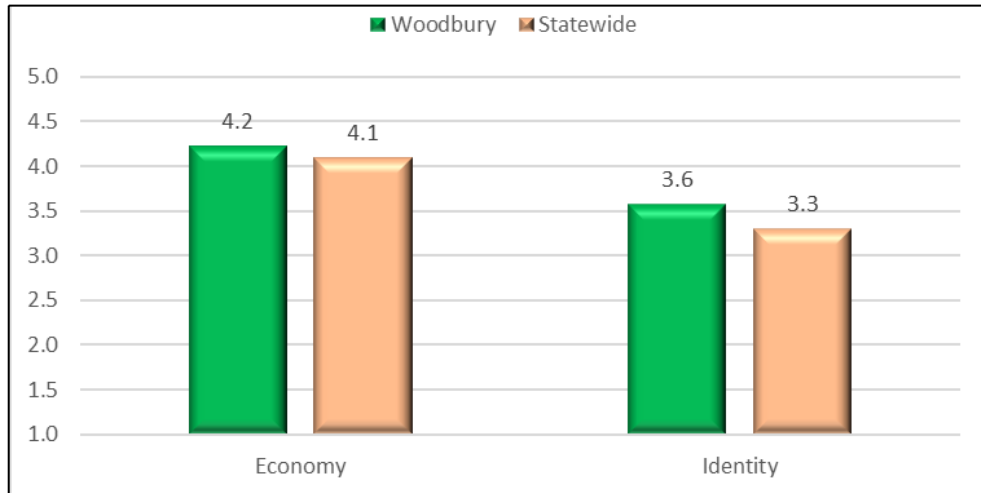
**Graph 9.5: Adjectives Describing the Community**



### Perceived Local Impacts of George Neal Power plant

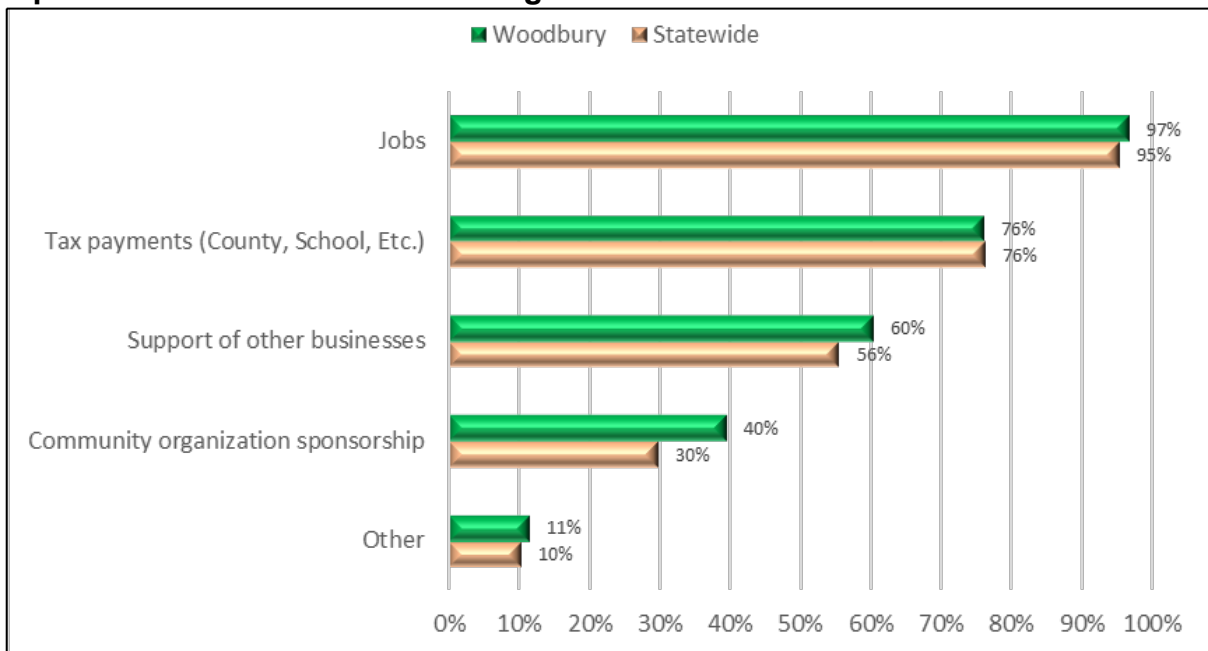
On a scale of 1 – 5 (1 being not at all important to 5 as extremely important), respondents in Woodbury County saw George Neal North and South as being slightly more important to their area’s economy and identity than the state averages. See Graph 9.6: Local Importance of the Generating Station for details.

**Graph 9.6: Local Importance of the Generating Station**



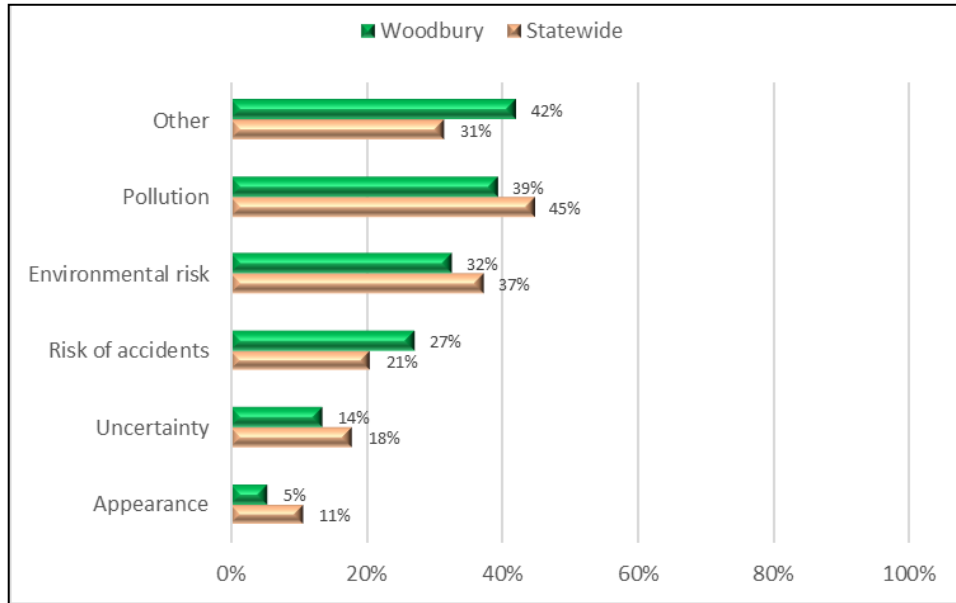
Compared to the statewide data, Woodbury County respondents perceived higher benefits from the power plant to their community. Per Graph 9.7: Benefits of the Generating Station, almost all stated “job provision” as the greatest benefit, followed by “tax payments (county, school, etc.)” and “support to other businesses”.

**Graph 9.7: Benefits of the Generating Station**



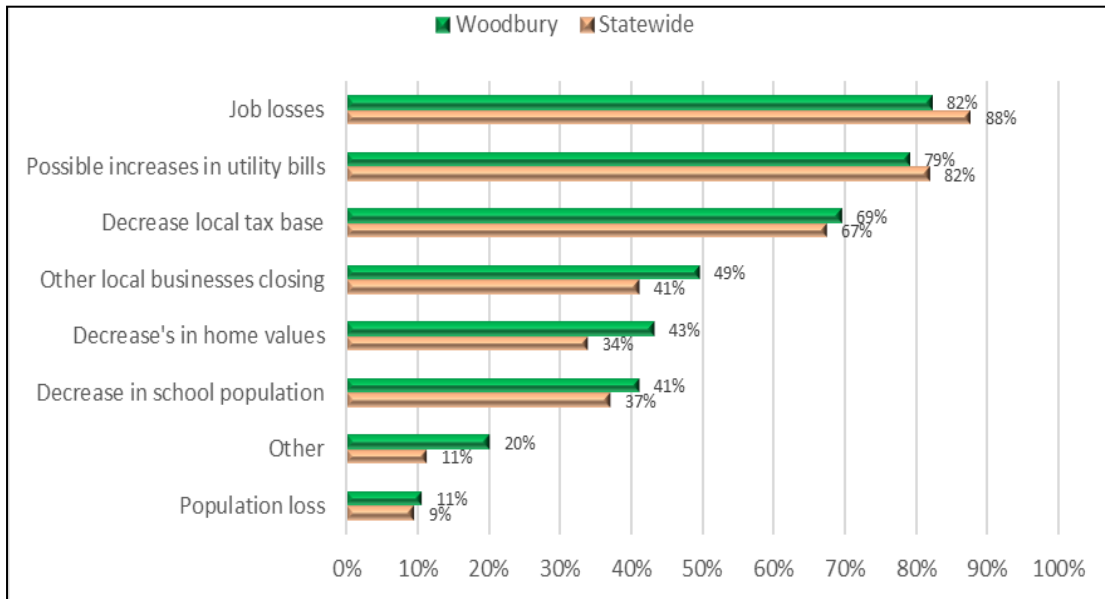
Residents were less likely to perceive negative local effects due the presence of George Neal North and South except for “risk of accidents.” Graph 9.8: Negative Effects of the Generating Station show details. Many who selected “other” wrote in that they saw no negative effects.

**Graph 9.8: Negative Effects of the Generating Station**



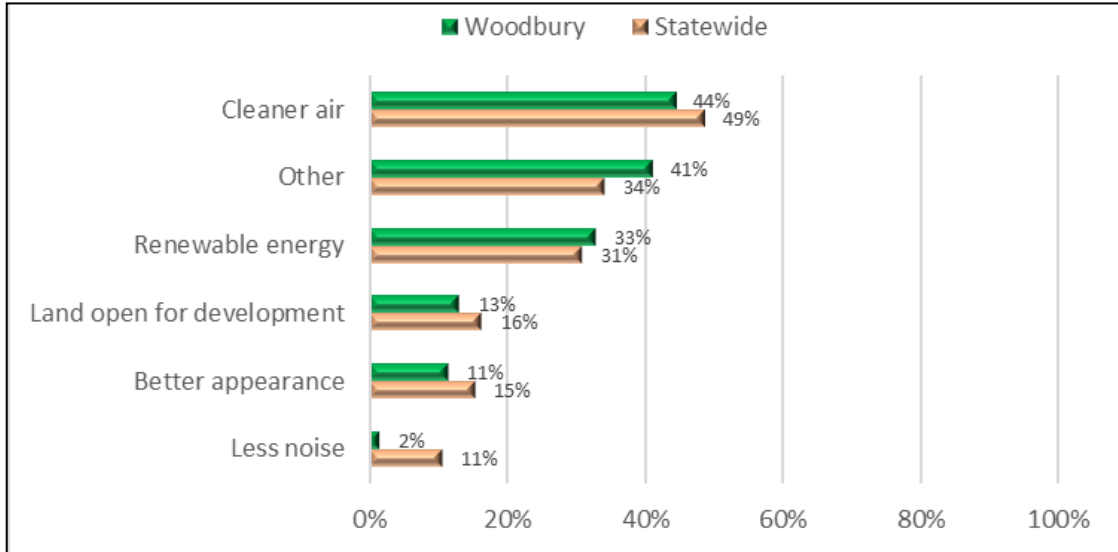
If George Neal North and South were to close, Woodbury County respondents were concerned with “job losses”, “possible increases in utility bills”, and a “decrease in the local tax base”. Graph 9.9: Concerns about Closure provides details below.

**Graph 9.9: Concerns about Closure**



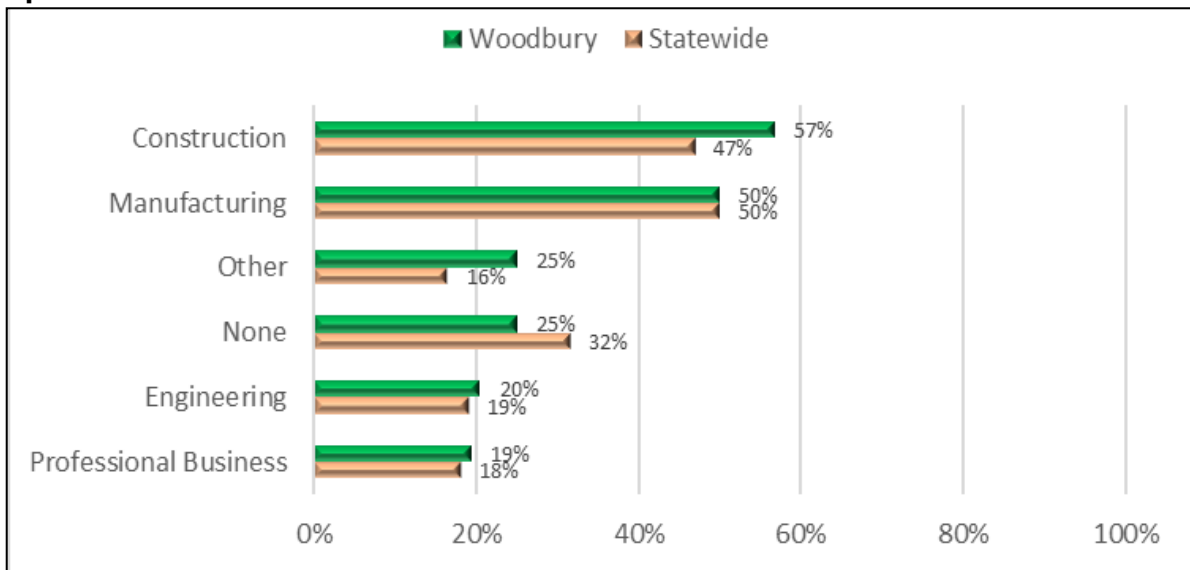
If George Neal North and South were to close, residents of Woodbury County were less likely to expect potential positive effects compared to statewide averages except for “less noise” per Graph 9.10: Positive Effects of Closure below.

**Graph 9.10: Positive Effects of Closure**



Resident of Woodbury County were overall more likely to believe that there would be local jobs available to George Neal North and South workers. Only **25%** of Woodbury County respondents believed that there would be no local jobs available for power plant employees. See Graph 9.11: Other Jobs Available for Power Plant Workers for details.

**Graph 9.11: Other Jobs Available for Power Plant Workers**



## Focus Groups and Key Informant Interviews

We held a focus group or spoke individually with five key informants in Woodbury County. The interview participants included economic development and local government staff. Following our interview script (see **Appendix 2**) we asked interviewees their views on 1) Benefits of the Neal North and South Generating Stations for the local area; 2) Drawbacks or any negative effects the plant might have; and 3) Their thoughts about the future of the plant.

### Benefits

The local jobs created were the first benefit mentioned by most of our interview or focus group participants. **“We have a lot of people that work for the power plant and other industries that support the power plant... that’s a huge benefit for our community and for the Siouxland area in general.”** Another participant added, **“People don’t just work there, but they are good jobs. We want jobs that pay like they do at the plant.”** The power plant jobs are seen as an ideal for many workers, **“The energy company in Sioux City is always one of the jobs that people here in Sioux City say ‘Get a job with MidAmerican, get a job at the power plant.’ They’re known as good jobs.”**

MidAmerican was also cited a key player in local philanthropic and development initiatives. **“They are very good community partners.”** An economic developer shared that, **“We have two major fundraisers a year and they are always a sponsor for both.”** MidAmerican also plays a key role in recruiting businesses locally **“When we have a prospect come to town interested in opening a plant they are able to join in with the conversation and let them know about their ability to provide power.”**

A school employee noted the importance of the plant to school finance, **“They provide a significant amount of our local tax base and tax revenue. [...] I would think that they’re the second largest contributor in terms of tax base and valuation to the school.”**

Respondents also shared confidence in the reliability and affordability of coal relative to other power sources. **“It’s a local source of electricity that is very reliable, very dependable, and very cost effective especially when you compare to some of the other electrical providers in the area.”** The recency of the power crisis in Texas in February of 2021 was also noted to underscore this point, **“We all know the Texas moment. We went through -28 degrees here in Siouxland and we did not lose power. That is because they are able to keep it going through the peaks.”**

Finally, a local government employee mentioned that many local businesses serve the power plants, **“If you think about all the local contractors that it takes to serve a plant of that size, if it is welders or pipefitters or janitorial or food service, you name it. That really has a ripple effect in our community for the economy.”**

## Drawbacks

Pollution was the first drawback mentioned in our focus group. **“Having them as close as they are to our community, there are always concerns about the pollution aspect of them burning coal out there.”** The participants also mentioned that, as a large industrial use, they had some concerns about the safety of the plant. **“There are concerns about overall safety. If something catastrophic happened out there it would have a negative impact on Sargent Bluff and in particular to the individuals that work there. It is a job that safety is always a concern.”**

Another issue mentioned was the train traffic that the plant requires. **“[The train traffic] has improved as we’ve added crossings, but [it is a drawback]. All those coal trains come through Sargent Bluff [...]. People complain a lot about the trains, not as much anymore since we’ve become a quiet zone and added another crossing. Now you can always get past.”** The trains themselves were also a safety concern. **“You worry about our schools being right by the train tracks. I was a middle school principal and those kids tend to want to take shortcuts across the train tracks to get home a little quicker. We’ve caught kids riding the train a little ways. It’s one of those dangerous things.”**

Finally, one participant mentioned a potential drawback being the uncertainty of relying so heavily on a single industry. **“It’s a big factor in our local economy so we have to keep an eye on it. I know that it is costly to operate and it’s not as clean as renewables. Other communities have had their plants shut down, but we’ve been able to keep ours and the company has made investments in scrubbers and in other things.”**

## Future

Overall the participants in the focus group were hopeful that the plant would be around for the foreseeable future. **“I hope they stay in some form. In terms of the value that they add to the community.”** They saw recent investments in the plants as a sign of commitment to keeping them open. **“The continual upgrades of the plants and continual investment is important. They have shut down some plants because they haven’t been upgraded. They are invested in fewer plants rather than spreading it out.”**

There was significant concern for what effects a complete shutdown would have on the area. **“If it were to close that would be devastating to our local economy. In many ways from valuation to job loss. It would be devastating to our community and to Siouxland in general.”**

At the same time, there was a general recognition that the mix of energy generation in Iowa is changing. **“I see coal plants being a part of the foreseeable future, but maybe not in the same way that they have been in the past. MidAmerican is moving towards renewables. I think they’re at 83% now. But if they move to all renewables then we wouldn’t have been warm at -28 degrees. As technology continues to improve, coal plants may play a lesser role, but I don’t think we’re**

**quite there yet.”** Another participant mentioned that even with increased renewable energy generation the plant will be an important part of the electrical grid. **“They will have a role to continue to play in backup generation. Hopefully ours will continue to receive investments and upgrades and be part of the equation.”**

## Appendix 1: Coal Power Plant Economic Impact Survey

### 1. How important do you believe the Prairie Creek Plant is to your ....

	Not at all Important	Slightly Important	Important	Very Important	Extremely Important
Community's economy?	1	2	3	4	5
Community's identity?	1	2	3	4	5

### 2. What benefits, if any, does the power plant provide to your community? (Check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Jobs                                | <input type="checkbox"/> Support of other businesses |
| <input type="checkbox"/> Tax payments (County, School, Etc.) | <input type="checkbox"/> Other (please describe)     |
| <input type="checkbox"/> Community organization sponsorship  | <input type="checkbox"/>                             |

### 3. What negatives, if any, does the power plant provide to your community? (Check all that apply)

- |   |   |
|---|---|
| <input type="checkbox"/> Pollution          | <input type="checkbox"/> Uncertainty                  |
| <input type="checkbox"/> Risk of accidents  | <input type="checkbox"/> Appearance                   |
| <input type="checkbox"/> Environmental risk | <input type="checkbox"/> Other (please specify) _____ |

### 4. What concerns would you have if the power plant were to close? (Check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Pollution loss          | <input type="checkbox"/> Decrease in school population       |
| <input type="checkbox"/> Decrease local tax base | <input type="checkbox"/> Possible increases in utility bills |
| <input type="checkbox"/> Decrease in home values | <input type="checkbox"/> Other local business closing        |
| <input type="checkbox"/> Job losses              | <input type="checkbox"/> Other (please specify) _____        |

### 5. What positive things may occur locally if the power plant were to close? (Check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Cleaner air       | <input type="checkbox"/> Renewable Energy             |
| <input type="checkbox"/> Less noise        | <input type="checkbox"/> Land open for development    |
| <input type="checkbox"/> Better appearance | <input type="checkbox"/> Other (please specify) _____ |

### 6. What other jobs are available nearby for the plant workers? (Check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Manufacturing | <input type="checkbox"/> Professional Business        |
| <input type="checkbox"/> Construction  | <input type="checkbox"/> None                         |
| <input type="checkbox"/> Engineering   | <input type="checkbox"/> Other (please specify) _____ |

### 7. How do you rate the local government services in your community?

	Very Poor	Poor	Uncertain	Good	Very Good
Condition of streets	1	2	3	4	5
Electric services	1	2	3	4	5
Emergency response service	1	2	3	4	5
Fire protection	1	2	3	4	5
Garbage collection	1	2	3	4	5
Library service	1	2	3	4	5
Parks & recreational services	1	2	3	4	5
Public school	1	2	3	4	5
Water service	1	2	3	4	5
Overall local gov. services	1	2	3	4	5



**8. How do you rate the non-government's community services in your city?**

	Very Poor	Poor	Uncertain	Good	Very Good
Childcare services	1	2	3	4	5
Senior citizen services	1	2	3	4	5
Programs for youth	1	2	3	4	5
Available housing	1	2	3	4	5
Medical services	1	2	3	4	5
Shopping facilities	1	2	3	4	5
Jobs	1	2	3	4	5
Community services overall	1	2	3	4	5

**9. Using the adjectives below, how would you describe your community?**

Dangerous	1	2	3	4	5	Safe
Unfriendly	1	2	3	4	5	Friendly
Indifferent	1	2	3	4	5	Supportive
Run-down	1	2	3	4	5	Well-kept
Not trusting	1	2	3	4	5	Trusting
Prejudices	1	2	3	4	5	Tolerant
Rejecting of New Ideas	1	2	3	4	5	Open to New Ideas

**10. Please provide the following demographic information:**

In which Zip code do you live? \_\_\_\_\_

How many are in your household, including yourself? \_\_\_\_\_

What is your age?     18-24     25-34     35-44     44-54     55-64     65+

What is your household income? (Check one answer)

- |  |  |
|--|--|
| <input type="checkbox"/> Under \$15,000                | <input type="checkbox"/> Between \$75,000 and \$99,999   |
| <input type="checkbox"/> Between \$15,000 and \$24,999 | <input type="checkbox"/> Between \$100,000 and \$149,999 |
| <input type="checkbox"/> Between \$25,000 and \$34,999 | <input type="checkbox"/> Between \$150,000 and \$199,999 |
| <input type="checkbox"/> Between \$35,000 and \$49,999 | <input type="checkbox"/> \$200,000 or more               |
| <input type="checkbox"/> Between \$50,000 and \$74,999 |  |

**\$20 Gift Card**

If you would like to enter to win one of the 10 available \$20 gift cards, please provide your contact information below so that we can mail you the gift card.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Email or Telephone: \_\_\_\_\_

*Thank you for your feedback and your assistance!  
Please return this completed survey in the enclosed postage-paid envelope.*

## Appendix 2: Focus Group / Interview Questions

### Introduction

Thank you for being willing to participate in this focus group. Remember, your participation is completely voluntary and you can stop at any time. This focus group will last approximately one hour. Feel free to ask any questions now or at any point during the focus group.

The purpose of this study is to better understand the economic and social impacts of **[coal power plant]** in your community. This survey is part of a larger study on coal power plants in the state. It is hoped that the information gained in this study will benefit your community by helping local and state leaders better understand the role these power plants play in local economies. We will record this conversation and may use quotes in the publication of this study. We will not identify you with any quotes used, but it may be possible to identify you.

This study is funded by the Iowa Environmental Council.

**Question 1:** What are the major benefits to your community from **Local Coal Plant?**

Jobs?

Taxes?

Support of other industries?

Community Identity?

Do any of your local philanthropic efforts or charities benefit from the power plant? (E.g. a sports team sponsorship, community organizations)

**Question 2:** What are the drawbacks to your community from **Local Coal Plant?**

Pollution?

Uncertainty?

Appearance?

**Question 3:** What are your thoughts about the future of the power plant in your community? (Closure / downsizing / transition)?

Who will be directly impacted?

Who will be indirectly impacted?

Have efforts already been made around a transition?

Thank you for your willingness to participate today and for your valuable contributions to this study.

### Appendix 3: IMPLAN Industry to NAICS 2-digit Sector Aggregation

NAICS 2 Digit	IMPLAN SECTOR
11 Ag, Forestry, Fish & Hunting	1 Oilseed farming
	2 Grain farming
	3 Vegetable and melon farming
	4 Fruit farming
	5 Tree nut farming
	6 Greenhouse, nursery, and floriculture production
	7 Tobacco farming
	8 Cotton farming
	9 Sugarcane and sugar beet farming
	10 All other crop farming
	11 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming
	12 Dairy cattle and milk production
	13 Poultry and egg production
	14 Animal production, except cattle and poultry and eggs
	15 Forestry, forest products, and timber tract production
	16 Commercial logging
	17 Commercial fishing
	18 Commercial hunting and trapping
	19 Support activities for agriculture and forestry
21 Mining	20 Oil and gas extraction
	21 Coal mining
	22 Copper, nickel, lead, and zinc mining
	23 Iron ore mining
	24 Gold ore mining
	25 Silver ore mining
	26 Uranium-radium-vanadium ore mining
	27 Other metal ore mining
	28 Stone mining and quarrying
	29 Sand and gravel mining
	30 Other clay, ceramic, refractory minerals mining
	31 Potash, soda, and borate mineral mining
	32 Phosphate rock mining
	33 Other chemical and fertilizer mineral mining
	34 Other nonmetallic minerals
	35 Drilling oil and gas wells
	36 Support activities for oil and gas operations
	37 Metal mining services
	38 Other nonmetallic minerals services
22 Utilities	39 Electric power generation - Hydroelectric
	40 Electric power generation - Fossil fuel
	41 Electric power generation - Nuclear
	42 Electric power generation - Solar
	43 Electric power generation - Wind

	44 Electric power generation - Geothermal
	45 Electric power generation - Biomass
	46 Electric power generation - All other
	47 Electric power transmission and distribution
	48 Natural gas distribution
	49 Water, sewage and other systems
23 Construction	50 Construction of new health care structures
	51 Construction of new manufacturing structures
	52 Construction of new power and communication structures
	53 Construction of new educational and vocational structures
	54 Construction of new highways and streets
	55 Construction of new commercial structures, including farm structures
	56 Construction of other new nonresidential structures
	57 Construction of new single-family residential structures
	58 Construction of new multifamily residential structures
	59 Construction of other new residential structures
	60 Maintenance and repair construction of nonresidential structures
	61 Maintenance and repair construction of residential structures
	62 Maintenance and repair construction of highways, streets, bridges, and tunnels
31-33 Manufacturing	63 Dog and cat food manufacturing
	64 Other animal food manufacturing
	65 Flour milling
	66 Rice milling
	67 Malt manufacturing
	68 Wet corn milling
	69 Soybean and other oilseed processing
	70 Fats and oils refining and blending
	71 Breakfast cereal manufacturing
	72 Beet sugar manufacturing
	73 Sugar cane mills and refining
	74 Nonchocolate confectionery manufacturing
	75 Chocolate and confectionery manufacturing from cacao beans
	76 Confectionery manufacturing from purchased chocolate
	77 Frozen fruits, juices and vegetables manufacturing
	78 Frozen specialties manufacturing
	79 Canned fruits and vegetables manufacturing
	80 Canned specialties
	81 Dehydrated food products manufacturing
	82 Cheese manufacturing
	83 Dry, condensed, and evaporated dairy product manufacturing
	84 Fluid milk manufacturing
	85 Creamery butter manufacturing
	86 Ice cream and frozen dessert manufacturing
	87 Frozen cakes and other pastries manufacturing
	88 Poultry processing

89 Animal, except poultry, slaughtering
90 Meat processed from carcasses
91 Rendering and meat byproduct processing
92 Seafood product preparation and packaging
93 Bread and bakery product, except frozen, manufacturing
94 Cookie and cracker manufacturing
95 Dry pasta, mixes, and dough manufacturing
96 Tortilla manufacturing
97 Roasted nuts and peanut butter manufacturing
98 Other snack food manufacturing
99 Coffee and tea manufacturing
100 Flavoring syrup and concentrate manufacturing
101 Mayonnaise, dressing, and sauce manufacturing
102 Spice and extract manufacturing
103 All other food manufacturing
104 Bottled and canned soft drinks & water
105 Manufactured ice
106 Breweries
107 Wineries
108 Distilleries
109 Tobacco product manufacturing
110 Fiber, yarn, and thread mills
111 Broadwoven fabric mills
112 Narrow fabric mills and schiffli machine embroidery
113 Nonwoven fabric mills
114 Knit fabric mills
115 Textile and fabric finishing mills
116 Fabric coating mills
117 Carpet and rug mills
118 Curtain and linen mills
119 Textile bag and canvas mills
120 Rope, cordage, twine, tire cord and tire fabric mills
121 Other textile product mills
122 Hosiery and sock mills
123 Other apparel knitting mills
124 Cut and sew apparel contractors
125 Men's and boys' cut and sew apparel manufacturing
126 Women's and girls' cut and sew apparel manufacturing
127 Other cut and sew apparel manufacturing
128 Apparel accessories and other apparel manufacturing
129 Leather and hide tanning and finishing
130 Footwear manufacturing
131 Other leather and allied product manufacturing
132 Sawmills
133 Wood preservation

134 Veneer and plywood manufacturing
135 Engineered wood member and truss manufacturing
136 Reconstituted wood product manufacturing
137 Wood windows and door manufacturing
138 Cut stock, resawing lumber, and planing
139 Other millwork, including flooring
140 Wood container and pallet manufacturing
141 Manufactured home (mobile home) manufacturing
142 Prefabricated wood building manufacturing
143 All other miscellaneous wood product manufacturing
144 Pulp mills
145 Paper mills
146 Paperboard mills
147 Paperboard container manufacturing
148 Paper bag and coated and treated paper manufacturing
149 Stationery product manufacturing
150 Sanitary paper product manufacturing
151 All other converted paper product manufacturing
152 Printing
153 Support activities for printing
154 Petroleum refineries
155 Asphalt paving mixture and block manufacturing
156 Asphalt shingle and coating materials manufacturing
157 Petroleum lubricating oil and grease manufacturing
158 All other petroleum and coal products manufacturing
159 Petrochemical manufacturing
160 Industrial gas manufacturing
161 Synthetic dye and pigment manufacturing
162 Other basic inorganic chemical manufacturing
163 Other basic organic chemical manufacturing
164 Plastics material and resin manufacturing
165 Synthetic rubber manufacturing
166 Artificial and synthetic fibers and filaments manufacturing
167 Nitrogenous fertilizer manufacturing
168 Phosphatic fertilizer manufacturing
169 Fertilizer mixing
170 Pesticide and other agricultural chemical manufacturing
171 Medicinal and botanical manufacturing
172 Pharmaceutical preparation manufacturing
173 In-vitro diagnostic substance manufacturing
174 Biological product (except diagnostic) manufacturing
175 Paint and coating manufacturing
176 Adhesive manufacturing
177 Soap and other detergent manufacturing
178 Polish and other sanitation good manufacturing

179 Surface active agent manufacturing
180 Toilet preparation manufacturing
181 Printing ink manufacturing
182 Explosives manufacturing
183 Custom compounding of purchased resins
184 Photographic film and chemical manufacturing
185 Other miscellaneous chemical product manufacturing
186 Plastics packaging materials and unlaminated film and sheet manufacturing
187 Unlaminated plastics profile shape manufacturing
188 Plastics pipe and pipe fitting manufacturing
189 Laminated plastics plate, sheet (except packaging), and shape manufacturing
190 Polystyrene foam product manufacturing
191 Urethane and other foam product (except polystyrene) manufacturing
192 Plastics bottle manufacturing
193 Other plastics product manufacturing
194 Tire manufacturing
195 Rubber and plastics hoses and belting manufacturing
196 Other rubber product manufacturing
197 Pottery, ceramics, and plumbing fixture manufacturing
198 Brick, tile, and other structural clay product manufacturing
199 Flat glass manufacturing
200 Other pressed and blown glass and glassware manufacturing
201 Glass container manufacturing
202 Glass product manufacturing made of purchased glass
203 Cement manufacturing
204 Ready-mix concrete manufacturing
205 Concrete block and brick manufacturing
206 Concrete pipe manufacturing
207 Other concrete product manufacturing
208 Lime manufacturing
209 Gypsum product manufacturing
210 Abrasive product manufacturing
211 Cut stone and stone product manufacturing
212 Ground or treated mineral and earth manufacturing
213 Mineral wool manufacturing
214 Miscellaneous nonmetallic mineral products manufacturing
215 Iron and steel mills and ferroalloy manufacturing
216 Iron, steel pipe and tube manufacturing from purchased steel
217 Rolled steel shape manufacturing
218 Steel wire drawing
219 Alumina refining and primary aluminum production
220 Secondary smelting and alloying of aluminum
221 Aluminum sheet, plate, and foil manufacturing
222 Other aluminum rolling, drawing and extruding
223 Nonferrous metal (exc aluminum) smelting and refining

224 Copper rolling, drawing, extruding and alloying
225 Nonferrous metal, except copper and aluminum, shaping
226 Secondary processing of other nonferrous metals
227 Ferrous metal foundries
228 Nonferrous metal foundries
229 Custom roll forming
230 Crown and closure manufacturing and metal stamping
231 Iron and steel forging
232 Nonferrous forging
233 Cutlery, utensil, pot, and pan manufacturing
234 Handtool manufacturing
235 Prefabricated metal buildings and components manufacturing
236 Fabricated structural metal manufacturing
237 Plate work manufacturing
238 Metal window and door manufacturing
239 Sheet metal work manufacturing
240 Ornamental and architectural metal work manufacturing
241 Power boiler and heat exchanger manufacturing
242 Metal tank (heavy gauge) manufacturing
243 Metal cans manufacturing
244 Metal barrels, drums and pails manufacturing
245 Hardware manufacturing
246 Spring and wire product manufacturing
247 Machine shops
248 Turned product and screw, nut, and bolt manufacturing
249 Metal heat treating
250 Metal coating and nonprecious engraving
251 Electroplating, anodizing, and coloring metal
252 Valve and fittings, other than plumbing, manufacturing
253 Plumbing fixture fitting and trim manufacturing
254 Ball and roller bearing manufacturing
255 Small arms ammunition manufacturing
256 Ammunition, except for small arms, manufacturing
257 Small arms, ordnance, and accessories manufacturing
258 Fabricated pipe and pipe fitting manufacturing
259 Other fabricated metal manufacturing
260 Farm machinery and equipment manufacturing
261 Lawn and garden equipment manufacturing
262 Construction machinery manufacturing
263 Mining machinery and equipment manufacturing
264 Oil and gas field machinery and equipment manufacturing
265 Semiconductor machinery manufacturing
266 Food product machinery manufacturing
267 Sawmill, woodworking, and paper machinery
268 Printing machinery and equipment manufacturing



269 All other industrial machinery manufacturing
270 Optical instrument and lens manufacturing
271 Photographic and photocopying equipment manufacturing
272 Other commercial service industry machinery manufacturing
273 Air purification and ventilation equipment manufacturing
274 Heating equipment (except warm air furnaces) manufacturing
275 Air conditioning, refrigeration, and warm air heating equipment manufacturing
276 Industrial mold manufacturing
277 Special tool, die, jig, and fixture manufacturing
278 Cutting tool and machine tool accessory manufacturing
279 Machine tool manufacturing
280 Rolling mill and other metalworking machinery manufacturing
281 Turbine and turbine generator set units manufacturing
282 Speed changer, industrial high-speed drive, and gear manufacturing
283 Mechanical power transmission equipment manufacturing
284 Other engine equipment manufacturing
285 Pump and pumping equipment manufacturing
286 Air and gas compressor manufacturing
287 Elevator and moving stairway manufacturing
288 Conveyor and conveying equipment manufacturing
289 Overhead cranes, hoists, and monorail systems manufacturing
290 Industrial truck, trailer, and stacker manufacturing
291 Power-driven handtool manufacturing
292 Welding and soldering equipment manufacturing
293 Packaging machinery manufacturing
294 Industrial process furnace and oven manufacturing
295 Fluid power cylinder and actuator manufacturing
296 Fluid power pump and motor manufacturing
297 Scales, balances, and miscellaneous general purpose machinery manufacturing
298 Electronic computer manufacturing
299 Computer storage device manufacturing
300 Computer terminals and other computer peripheral equipment manufacturing
301 Telephone apparatus manufacturing
302 Broadcast and wireless communications equipment manufacturing
303 Other communications equipment manufacturing
304 Audio and video equipment manufacturing
305 Printed circuit assembly (electronic assembly) manufacturing
306 Bare printed circuit board manufacturing
307 Semiconductor and related device manufacturing
308 Capacitor, resistor, coil, transformer, and other inductor manufacturing
309 Electronic connector manufacturing
310 Other electronic component manufacturing
311 Electromedical and electrotherapeutic apparatus manufacturing
312 Search, detection, and navigation instruments manufacturing
313 Automatic environmental control manufacturing

314 Industrial process variable instruments manufacturing
315 Totalizing fluid meter and counting device manufacturing
316 Electricity and signal testing instruments manufacturing
317 Analytical laboratory instrument manufacturing
318 Irradiation apparatus manufacturing
319 Watch, clock, and other measuring and controlling device manufacturing
320 Blank magnetic and optical recording media manufacturing
321 Software and other prerecorded and record reproducing
322 Electric lamp bulb and part manufacturing
323 Lighting fixture manufacturing
324 Small electrical appliance manufacturing
325 Household cooking appliance manufacturing
326 Household refrigerator and home freezer manufacturing
327 Household laundry equipment manufacturing
328 Other major household appliance manufacturing
329 Power, distribution, and specialty transformer manufacturing
330 Motor and generator manufacturing
331 Switchgear and switchboard apparatus manufacturing
332 Relay and industrial control manufacturing
333 Storage battery manufacturing
334 Primary battery manufacturing
335 Fiber optic cable manufacturing
336 Other communication and energy wire manufacturing
337 Wiring device manufacturing
338 Carbon and graphite product manufacturing
339 All other miscellaneous electrical equipment and component manufacturing
340 Automobile manufacturing
341 Light truck and utility vehicle manufacturing
342 Heavy duty truck manufacturing
343 Motor vehicle body manufacturing
344 Truck trailer manufacturing
345 Motor home manufacturing
346 Travel trailer and camper manufacturing
347 Motor vehicle gasoline engine and engine parts manufacturing
348 Motor vehicle electrical and electronic equipment manufacturing
349 Motor vehicle transmission and power train parts manufacturing
350 Motor vehicle seating and interior trim manufacturing
351 Motor vehicle metal stamping
352 Other motor vehicle parts manufacturing
353 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing
354 Aircraft manufacturing
355 Aircraft engine and engine parts manufacturing
356 Other aircraft parts and auxiliary equipment manufacturing
357 Guided missile and space vehicle manufacturing

	358 Propulsion units and parts for space vehicles and guided missiles manufacturing
	359 Railroad rolling stock manufacturing
	360 Ship building and repairing
	361 Boat building
	362 Motorcycle, bicycle, and parts manufacturing
	363 Military armored vehicle, tank, and tank component manufacturing
	364 All other transportation equipment manufacturing
	365 Wood kitchen cabinet and countertop manufacturing
	366 Upholstered household furniture manufacturing
	367 Nonupholstered wood household furniture manufacturing
	368 Other household nonupholstered furniture manufacturing
	369 Institutional furniture manufacturing
	370 Wood office furniture manufacturing
	371 Custom architectural woodwork and millwork
	372 Office furniture, except wood, manufacturing
	373 Showcase, partition, shelving, and locker manufacturing
	374 Mattress manufacturing
	375 Blind and shade manufacturing
	376 Surgical and medical instrument manufacturing
	377 Surgical appliance and supplies manufacturing
	378 Dental equipment and supplies manufacturing
	379 Ophthalmic goods manufacturing
	380 Dental laboratories
	381 Jewelry and silverware manufacturing
	382 Sporting and athletic goods manufacturing
	383 Doll, toy, and game manufacturing
	384 Office supplies (except paper) manufacturing
	385 Sign manufacturing
	386 Gasket, packing, and sealing device manufacturing
	387 Musical instrument manufacturing
	388 Fasteners, buttons, needles, and pins manufacturing
	389 Broom, brush, and mop manufacturing
	390 Burial casket manufacturing
	391 All other miscellaneous manufacturing
42 Wholesale Trade	392 Wholesale - Motor vehicle and motor vehicle parts and supplies
	393 Wholesale - Professional and commercial equipment and supplies
	394 Wholesale - Household appliances and electrical and electronic goods
	395 Wholesale - Machinery, equipment, and supplies
	396 Wholesale - Other durable goods merchant wholesalers
	397 Wholesale - Drugs and druggists' sundries
	398 Wholesale - Grocery and related product wholesalers
	399 Wholesale - Petroleum and petroleum products
	400 Wholesale - Other nondurable goods merchant wholesalers
	401 Wholesale - Wholesale electronic markets and agents and brokers
44-45 Retail	402 Retail - Motor vehicle and parts dealers

trade	403 Retail - Furniture and home furnishings stores	
	404 Retail - Electronics and appliance stores	
	405 Retail - Building material and garden equipment and supplies stores	
	406 Retail - Food and beverage stores	
	407 Retail - Health and personal care stores	
	408 Retail - Gasoline stores	
	409 Retail - Clothing and clothing accessories stores	
	410 Retail - Sporting goods, hobby, musical instrument and book stores	
	411 Retail - General merchandise stores	
	412 Retail - Miscellaneous store retailers	
	413 Retail - Nonstore retailers	
	48-49 Transportation & Warehousing	414 Air transportation
		415 Rail transportation
416 Water transportation		
417 Truck transportation		
418 Transit and ground passenger transportation		
419 Pipeline transportation		
420 Scenic and sightseeing transportation and support activities for transportation		
421 Couriers and messengers		
422 Warehousing and storage		
51 Information	423 Newspaper publishers	
	424 Periodical publishers	
	425 Book publishers	
	426 Directory, mailing list, and other publishers	
	427 Greeting card publishing	
	428 Software publishers	
	429 Motion picture and video industries	
	430 Sound recording industries	
	431 Radio and television broadcasting	
	432 Cable and other subscription programming	
	433 Wired telecommunications carriers	
	434 Wireless telecommunications carriers (except satellite)	
	435 Satellite, telecommunications resellers, and all other telecommunications	
	436 Data processing, hosting, and related services	
	437 News syndicates, libraries, archives and all other information services	
	438 Internet publishing and broadcasting and web search portals	
52 Finance & insurance	439 Nondepository credit intermediation and related activities	
	440 Securities and commodity contracts intermediation and brokerage	
	441 Monetary authorities and depository credit intermediation	
	442 Other financial investment activities	
	443 Direct life insurance carriers	
	444 Insurance carriers, except direct life	
	445 Insurance agencies, brokerages, and related activities	
	446 Funds, trusts, and other financial vehicles	
53 Real estate &	447 Other real estate	

rental	448 Tenant-occupied housing
	449 Owner-occupied dwellings
	450 Automotive equipment rental and leasing
	451 General and consumer goods rental except video tapes and discs
	452 Video tape and disc rental
	453 Commercial and industrial machinery and equipment rental and leasing
	454 Lessors of nonfinancial intangible assets
54 Professional-scientific & tech svcs	455 Legal services
	456 Accounting, tax preparation, bookkeeping, and payroll services
	457 Architectural, engineering, and related services
	458 Specialized design services
	459 Custom computer programming services
	460 Computer systems design services
	461 Other computer related services, including facilities management
	462 Management consulting services
	463 Environmental and other technical consulting services
	464 Scientific research and development services
	465 Advertising, public relations, and related services
	466 Photographic services
	467 Veterinary services
468 Marketing research and all other miscellaneous professional, scientific, and technical services	
55 Management of companies	469 Management of companies and enterprises
56 Administrative and Support and Waste Management and Remediation Services	470 Office administrative services
	471 Facilities support services
	472 Employment services
	473 Business support services
	474 Travel arrangement and reservation services
	475 Investigation and security services
	476 Services to buildings
	477 Landscape and horticultural services
	478 Other support services
479 Waste management and remediation services	
61 Educational Services	480 Elementary and secondary schools
	481 Junior colleges, colleges, universities, and professional schools
	482 Other educational services
62 Health Care and Social Assistance	483 Offices of physicians
	484 Offices of dentists
	485 Offices of other health practitioners
	486 Outpatient care centers
	487 Medical and diagnostic laboratories
	488 Home health care services
	489 Other ambulatory health care services

	490 Hospitals
	491 Nursing and community care facilities
	492 Residential mental retardation, mental health, substance abuse and other facilities
	493 Individual and family services
	494 Child day care services
	495 Community food, housing, and other relief services, including rehabilitation services
71 Arts, entertainment & recreation	496 Performing arts companies
	497 Commercial Sports Except Racing
	498 Racing and Track Operation
	499 Independent artists, writers, and performers
	500 Promoters of performing arts and sports and agents for public figures
	501 Museums, historical sites, zoos, and parks
	502 Amusement parks and arcades
	503 Gambling industries (except casino hotels)
	504 Other amusement and recreation industries
	505 Fitness and recreational sports centers
	506 Bowling centers
72 Accommodation & food services	507 Hotels and motels, including casino hotels
	508 Other accommodations
	509 Full-service restaurants
	510 Limited-service restaurants
	511 All other food and drinking places
81 Other services (except Public Administration)	512 Automotive repair and maintenance, except car washes
	513 Car washes
	514 Electronic and precision equipment repair and maintenance
	515 Commercial and industrial machinery and equipment repair and maintenance
	516 Personal and household goods repair and maintenance
	517 Personal care services
	518 Death care services
	519 Dry-cleaning and laundry services
	520 Other personal services
	521 Religious organizations
	522 Grantmaking, giving, and social advocacy organizations
	523 Business and professional associations
	524 Labor and civic organizations
	525 Private households
9A Government Enterprises	526 Postal service
	527 Federal electric utilities
	528 Other federal government enterprises
	529 State government passenger transit
	530 State government electric utilities
	531 Other state government enterprises
	532 Local government passenger transit
	533 Local government electric utilities
	534 Other local government enterprises

93 Non-NAICS	535 * Not an industry (Used and secondhand goods)
	536 * Not an industry (Scrap)
	537 * Not an industry (Rest of world adjustment)
	538 * Not an industry (Noncomparable foreign imports)
9B Administrative Government	539 * Employment and payroll of state govt, education
	540 * Employment and payroll of state govt, hospitals and health services
	541 * Employment and payroll of state govt, other services
	542 * Employment and payroll of local govt, education
	543 * Employment and payroll of local govt, hospitals and health services
	544 * Employment and payroll of local govt, other services
	545 * Employment and payroll of federal govt, military
	546 * Employment and payroll of federal govt, non-military

## Appendix 4: Power plant job titles and possible substitute occupations from the Occupational Outlook Handbook

Adapted from <https://www.bls.gov/ooh/>

**Ash Disposal Facility Operators** – Hazardous Materials Removal Workers identify and dispose of harmful substances such as asbestos, lead, and radioactive waste. Many projects may require night and weekend work. Overtime is common for some workers, particularly for those who respond to emergencies or disasters.

Hazardous Materials Removal Workers need a high school diploma and are trained on the job. Workers may complete training that follows OSHA standards. These workers need federally or state-mandated training, licensing, or permits, depending on the type of waste remediation. In May 2020, the median annual wage for all workers was \$41,950.

**Job Outlook:** Employment of hazardous waste removal workers is projected to grow by 8% from 2019 to 2029, much faster than the average for all occupations.

**Closest Occupations:**

Construction Laborers and Helpers perform many tasks that require physical labor on construction sites. High school diploma or equivalent and on-site job training. \$37,080

Insulation Workers install and replace the materials used to insulate buildings or mechanical systems. High School Diploma or equivalent and on-site job training. \$45,820

**Coal Handler** – Hand Laborers and Material Movers manually move freight, stock, or other materials. Most work full time. Most materials are shipped around the clock, some workers, especially those in warehousing, work overnight shifts.

Hand Laborers and Material Movers usually require no formal educational requirements for anyone to become a hand laborer or material mover. Employers typically require only that applicants be physically able to perform the work. In May 2020, the median annual wage for all workers was \$41,950.

**Job Outlook:** Overall employment of hand laborers and material movers is projected to grow 3 percent from 2019 to 2029, about as fast as the average for all occupations. Job prospects should be good because of the need to replace workers who leave these occupations.

**Closest Occupations:**

Construction Laborers and Helpers perform many tasks that require physical labor on construction sites. Typically, a formal education is not required for most positions, but helpers of electricians, helpers of pipelayers, plumbers, pipefitters, and steam fitters typically need a high school diploma. \$37,080



Delivery truck Drivers and Driver/Sales Workers pick up, transport, and drop off packages and small shipments within a local region or urban area. Typically, a high school diploma or equivalent is required for this job. \$34,340

Heavy and Tractor-trailer Truck Drivers transport goods from one location to another. Typically, this position requires a postsecondary nondegree award. \$47,130

Material Moving Machine Operators use machinery to transport various objects. Typically, no formal education is required for this position, but some companies prefer to hire material moving operators who have a high school diploma. For crane and tower operators, excavating machine operators, and dredge operators, a high school diploma or equivalent is required. \$37,790

Material Recording Clerks track product information in order to keep businesses and supply chains on schedule. Typically, a high school diploma or equivalent is required. \$31,170

Water Transportation Workers operate and maintain vessels that take cargo and people over water. Typically require US Coast Guard-approved training programs to help obtain their required credentials.

### **Coal Handler Foreman, Control Room Operator, Operating Crew Foreman**

We use Power Plant Operator from the Occupational Handbook as the reference

**Power Plant Operators** control the systems that generate and distribute electric power. Most power plant operators, distributors, and dispatchers work full time. Many work rotating 8- or 12-hour shifts.

Power plant operators, distributors, and dispatchers typically need a high school diploma or equivalent combined with extensive on-the-job training that may include a combination of classroom and hands-on training. Many jobs require a background check and drug and alcohol screenings. Nuclear power reactor operators also need a license. The median annual wage for power plant operators was \$85,950 in May 2019.

Job Outlook: Overall employment of power plant operators, distributors, and dispatchers is projected to decline 16 percent from 2019 to 2029. Although electricity use is expected to grow, technological advances and greater efficiency are expected to reduce employment.

### Closest Occupations

Construction Equipment Operators, Construction equipment operators drive, maneuver, or control the heavy machinery used to construct roads, buildings, and other structures, High school diploma or equivalent \$48,160

Electrical and Electronics Installers and Repairers, Electrical and electronics installers and repairers install or repair a variety of electrical equipment.

Line installers and repairers, Line installers and repairers install or repair electrical power systems and telecommunications cables, including fiber optics. High school diploma or equivalent \$65,700

Stationary Engineers and Boiler Operators, Stationary engineers and boiler operators control stationary engines, boilers, or other mechanical equipment, High school diploma or equivalent \$62,150

Water and liquid waste treatment plant and system operators, Water and wastewater treatment plant and system operators manage a system of machines to transfer or treat water or wastewater. High school diploma or equivalent \$47,760

**Lab Technician** - Electrical and electronics engineering technicians work in offices, laboratories, and factories and may be exposed to hazards from equipment or toxic materials. ... Most positions require an associate's degree in electrical or electronics engineering technology. The median annual wage for Electrical and electronics engineering technicians was \$67,550 per year in May 2020.

Job Outlook: Employment of electrical and electronics engineering technicians is projected to grow 2 percent from 2019 to 2029, slower than the average for all occupations.

#### Closest Occupations

Agricultural and food science technicians assist agricultural and food scientists. Associate's degree \$41,970

Biological technicians help biological and medical scientists conduct laboratory tests and experiments. Bachelor's degree. \$46,340

Environmental science and protection technicians monitor the environment and investigate sources of pollution and contamination. Associate's degree. \$46,850

Geological and hydrologic technicians support scientists and engineers in exploring, extracting, and monitoring natural resources. Associate's degree. \$50,630

**Mechanical Maintenance and Floor Operator.** We use Industrial Machinery Mechanics, from the Occupational Handbook as the reference.

**Machinery Maintenance Workers** – Industrial machinery mechanics, machinery maintenance workers, and millwrights install, maintain, and repair factory equipment and other industrial machinery. Workers in this occupation work full time in manufacturing facilities. However, they may be on call and work night or weekend shifts. Overtime is common.

Typically require a high school diploma. Industrial machinery mechanics and machinery workers also usually need at least a year of on-the-job training. Most millwrights go through an apprenticeship program that may last up to 4 years. The median annual wage for industrial machinery mechanics, machinery maintenance workers, and millwrights was \$54,920 in May 2020.

Job Outlook: Overall employment of industrial machinery mechanics, machinery maintenance workers, and millwrights is projected to grow 13 percent from 2019 to 2029, much faster than the average for all occupations. Employment growth will vary by occupation.

### Closest Occupations:

Electricians install, maintain, and repair electrical power, communications, lighting, and control systems. High school diploma or equivalent \$56,900

General maintenance and repair workers fix and maintain machines, mechanical equipment, and buildings. High school diploma or equivalent \$40,850

Machinists and tool and die makers set up and operate machine tools to produce precision metal parts, instruments, and tools. These workers are typically trained on the job. Some learn through training or apprenticeship programs, vocational schools, or community and technical colleges. Although machinists typically need just a high school diploma, tool and die makers may need to complete courses beyond high school.  
\$47,040

Plumbers, pipefitters, and steamfitters install and repair piping fixtures and systems. High school diploma or equivalent. \$56,330

Welders, cutters, solderers, and brazers use handheld or remotely controlled equipment to join, repair, or cut metal parts and products. High school diploma or equivalent.  
\$44,190

**Power Plant and Substation Electrician-** Electricians install, maintain, and repair electrical power, communications, lighting, and control systems. Almost all electricians work full time. Work schedules may include evenings and weekends. Overtime is common.

Most electricians learn through an apprenticeship, but some start out by attending a technical school. Most states require electricians to be licensed. The median annual wage for electricians was \$56,900 in May 2020.

**Job Outlook:** Employment of electricians is projected to grow 8 percent from 2019 to 2029, much faster than the average for all occupations. Homes and businesses continue to require wiring, electricians will be needed to install the necessary components.

### Closest Occupations:

Aircraft and avionics equipment mechanics and technicians repair and perform scheduled maintenance on aircraft. Some workers learn their trade at a Federal Aviation Administration approved aviation maintenance technician school. Others are trained on the job or learn through training in the military. \$66,680

Electrical and electronics installers and repairers install or repair a variety of electrical equipment. Typically need at least a high school education, but most specializations require further preparation through advanced education, work experience, or both.  
\$62,020

Elevator and escalator installers and repairers install, maintain, and fix elevators, escalators, moving walkways, and other lifts. High school diploma or equivalent.  
\$88,540

Line installers and repairers install or repair electrical power systems and telecommunications cables, including fiber optics. High school diploma or equivalent. \$68,030

Power plant operators, distributors, and dispatchers control the systems that generate and distribute electric power. High school diploma or equivalent. \$89,090

Solar photovoltaic (PV) installers assemble, set up, and maintain rooftop or other systems that convert sunlight into energy. High school diploma or equivalent. \$46,470

**Quality Control Technician** – Quality Control Inspectors examine products and materials for defects or deviations from specifications. Most quality control inspectors work full time during regular business hours. Overtime may be required to meet production deadlines.

Most quality control inspectors need a high school diploma and receive on-the-job training that typically lasts as little as 1 month or up to 1 year. Typically need no prior work experience. In May 2020, the median annual wage for all workers was \$41,950.

Job Outlook: Overall employment of quality control inspectors is projected to decline 17 percent from 2019 to 2029.

Closest Occupations:

Construction and Building Inspectors ensure that construction meets building codes and ordinances, zoning regulations, and contract specifications. Typically require a high school diploma or equivalent. \$62,860

Fire Inspectors examine buildings in order to detect fire hazards and ensure that federal, state, and local fire codes are met. Typically require previous work as a firefighter. These workers need at least a high school diploma or equivalent and receive on-the-job training in inspection and investigation. They must usually pass a background check, which may include a drug test.

**Storekeeper** We use Purchasing Managers, Buyers, and Purchasing Agents from the Occupational Handbook as the reference.

Buyers and purchasing agents buy products and services for organizations. Purchasing managers oversee the work of buyers and purchasing agents.

Buyers and purchasing agents typically have a bachelor's degree. Purchasing managers must also have a few years of work experience. The median annual wage for buyers and purchasing agents was \$66,690 in May 2020. The median annual wage for purchasing managers was \$125,940 in May 2020.

Job Outlook: Overall employment of purchasing managers and buyers and purchasing agents is projected to decline 7 percent from 2019 to 2029. However, many openings are expected each year because of the need to replace workers who leave the occupation.

Closest Occupations:

Bookkeeping, accounting, and auditing clerks produce financial records for organizations and check financial records for accuracy. Some college, no degree.  
\$42,410

Logisticians analyze and coordinate an organization's supply chain. Bachelor's degree.  
\$76,270